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Rybalko A. P., Denysova T. V. Organization of online learning in higher mathematics during quarantine

The article is devoted to the topical problem of organizing the educational process in higher education institutions during quarantine, in particular, the introduction of synchronous online classes using cloud services. The need for a full-scale transition to distance learning requires the search for alternative teaching methods, the use of new forms and tools to provide access to knowledge in real time. There is a need to solve specific pedagogical and psychological problems that arise in conditions of impossibility of personal communication of the teacher with students. All these aspects require comprehension and thorough scientific and methodological support.

The paper presents a model for the organization of educational process of students, developed and used in teaching higher mathematics to students of computer specialties during quarantine. The analysis of pedagogical, psychological and technical problems arising during the implementation of online learning is made. The features of creating a distance learning system for teaching higher mathematics for computer science students are highlighted, the structure of the educational process and resources for its implementation are proposed. The experience of the authors in organizing synchronous online classes, communication with students and the use of various information technologies and tools is given, the effectiveness of their use in the educational process under quarantine restrictions is substantiated.

The developed structure of the educational process allows to organize effective educational and cognitive activities of students during quarantine. The implemented online learning system significantly develops the personal potential of students, increases their competitiveness, ensures the formation of general and professional competencies.

Further research in this area may be devoted to improving various aspects of teaching methods during quarantine, attracting of modern Smart-technologies, using of mobile applications, etc.

Key words: higher education institution, higher mathematics teaching, computer science students, distance education, online learning, quarantine, synchronous classes, cloud services.

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Rudyk T. O., Sulima O. V.

CONSIDERING PROFESSIONAL COMPETENCE OF A TEACHER OF HIGHER MATHEMATICS AT THE TECHNICAL UNIVERSITY

At the present stage of development of higher education, it requires new pedagogical thinking to meet the needs of society for intellectually developed, comprehensively educated and responsible specialists who can work creatively and constructively in constantly changing socio-economic conditions.

The teacher is not only a carrier and transmitter of scientific information but is an organizer of the cognitive activities of students, their independent work and scientific creativity.

The essential role of mathematics in the integrative approach to the implementation of science and mathematics education requires consistent, thorough and high-quality teaching. The professional competence of higher mathematics teacher at a technical university is the ability to carry out one's professional activities. The purpose of the article is to substantiate that the main professional competence of a mathematics teacher is the ability not only to acquaint students with the basics of higher mathematics, but also to arouse interest in the discipline, to form mathematical competence of technical university students as an integral part of their general cultural and professional competences, to show the importance of mathematics knowledge and skills.

The article identifies the basic competencies that together determine the success of higher mathematics teacher's educative activities at the technical university. The represented result of questionnaires of first- and fourth-year students of the Instrument-Making Faculty of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" show the will of students to solve more problems of applied subjects, to implement independent work on search, development and solving the tasks during practical lessons that concern to future profession.

Key words: professional competency, teacher, mathematics, students, problem-based learning, motivation, questionnaire, professional activities.

(статтю подано мовою оригіналу)

A 2019 Programme for International Student Assessment (PISA) survey found that 36% of Ukrainian 15-year-old schoolchildren do not reach the basic level of knowledge in mathematics. This is a very alarming signal, which means that so many 15-year-old Ukrainians can perform only basic arithmetic operations, but they can no longer work with fractions or percentages. Ukraine's result in mathematical sciences is 41–46 (among 79 countries).

In order to create opportunities for equal access of Ukrainian schoolchildren to modern and high-quality mathematics education, formation of the appropriate level of mathematical competence, taking into account the results of the international study of PISA quality education on mathematical competence of basic secondary education in Ukraine, 2020–2021 academic year was declared by the president of Ukraine as a mathematical education year in Ukraine.

The next step towards quality mathematics education was the order of the Cabinet of Ministers of Ukraine on August 5, 2020 on the approval of the Concept for the Development of Science and Mathematical Education (STEM-education), the implementation of which is scheduled for 2027.

STEM education originated in the United States in the 1990s. And nowadays STEM professions are in great demand here. Moreover, they are called the professions of the future, reasonably believing that this is one of the most effective approaches to education. After all, STEM is not just about programming, coding, engineering and teamwork skills. It is also about competitive advantages for building a career in such hotly relevant areas of activity as biochemistry, bioengineering, astrophysics, geology, strategic management.

STEM graduates are in much greater demand among employers, and accordingly receive a much higher salary and can choose more favorable working conditions.

Therefore, we can make a clear conclusion: the fact that it is planned to introduce STEM education in all Ukrainian schools by 2027 – an undoubted step forward in educating a modern, competent, competitive generation.

The Concept emphasizes that the main tasks for ensuring the proper quality of science and mathematics education in sphere of higher education are increasing the professional competence of teachers with implementing new teaching methods, introduction of digital technologies to educational process, introduction of problem-based learning (creating problematic situations in which students individually look for answers), utilizing pedagogical approaches by teachers to educate and assess, using methods and means that contribute to the development of researching competencies of students.

The essential role of mathematics in the integrative approach to the implementation of science and mathematics education requires consistent, thorough and high-quality teaching. The professional competence of higher mathematics teacher at a technical university is the ability to carry out one's professional activities.

The purpose of the article is to substantiate that the main professional competence of a mathematics teacher is the ability not only to acquaint students with the basics of higher mathematics, but also to arouse interest in the discipline, to form mathematical competence of technical university students as an integral part of their general cultural and professional competences, to show the importance of mathematics knowledge and skills. The teacher must create such conditions for the educational process so students can understand the value of mathematics education for their own development and in the context of their future practical activities and are aware of the relevance of studying mathematics.

In recent decades, due to the rapid development of information technology, the application of mathematics in science and technology has increased significantly. New knowledge gives a powerful impetus to the motivation to study mathematics. Mathematical knowledge is becoming increasingly demanded. On the other hand, the knowledge of the discipline "Mathematics", with which former students come to universities, is currently extremely low. Despite the fact that the education system in Ukraine supposes continuity in the transition from secondary to higher education, it should be recognized that the level of mathematical training of school graduates is largely insufficient for students to master mathematical disciplines. Experience shows that many students do not cope with the university course. Let's highlight the main reasons that do not allow students to effectively master the mathematical disciplines:

- lack of skills of independent work among school graduates;
- inability to work with educational and scientific literature;
- poor school preparation in mathematics;
- poorly formed algorithmic activity;
- the fundamental difference in the volumes of the studied information at school and university.

The process of mathematical education can be presented as a scientifically controlled process, the purpose of which is to achieve a high level of mathematical readiness of university graduates. The main task of mathematics teacher is to form the mathematical competence of students at a technical university in the process of developing mathematics and the development of cultural and professional competences respectively.

Let's define the basic competencies, which together determine the success of teaching activities in the field of mathematics in a technical university.

The Law of Ukraine "About Higher Education" states that "scientific and pedagogical, scientific and pedagogical staff of higher education institutions are obliged to provide teaching at a high scientific, theoretical and methodological level of the relevant educational program in the specialty, to conduct scientific activities".

At the present stage of development of higher education, it requires new pedagogical thinking to meet the needs of society for intellectually developed, comprehensively educated and responsible specialists who can work creatively and constructively in constantly changing socio-economic conditions.

The teacher is not only a carrier and transmitter of scientific information but is an organizer of the cognitive activities of students, their independent work and scientific creativity.

The main condition for the successful work of a teacher at a technical university is good scientific, technical, engineering, practical, psychological and pedagogical knowledge. Along with scientific qualification, the pedagogical component is becoming increasingly important, which needs constant updating and improvement of psychological and pedagogical knowledge and skills. Pedagogical skills are not acquired during university studies. It is formed only in the process of practical activity. The condition for becoming a novice teacher on the way to improving pedagogical skills is the "continuity of generations", i. e., organization of training directly at the department in the form of mentorship of more experienced teachers over young people, mutual classes visits, permanent scientific and methodological seminars, open classes, internships.

In works [1; 2] we have the results of a survey to research predominant motivation of their educational mathematical activities in teaching mathematics of 1st and 2nd year students of the Instrument-Making Faculty of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", specialty "Automation and computer-integrated technologies" to research predominant motivation of their educational mathematical activities in teaching mathematics, that showed that one of the most important motivations of students to study higher mathematics is the professionalism and personality of the teacher. This is a completely predictable and expected result.

Returning to our student years that passed at Taras Shevchenko National University of Kyiv at the Faculty of Mechanics and Mathematics, we can confidently say that we received a brilliant fundamental education thankfully to the great teachers who combined the qualities of experienced teachers and brilliant scientists. Under the influence of their lectures and seminars, a desire to continue and deepen the study of mathematics in the graduate school of the Institute of Mathematics of the National Academy of Sciences of Ukraine arose, where mathematical science was born. Under the guidance of talented scientists and teachers, we learned to think and create, gained invaluable experience, which we rely on, improve and develop, taking into account modern requirements for higher education and for students as future specialists in their field.

Interest in the subject is firstly caused by the personality of the teacher, his ability to present information, the ability to find the right form to express his thoughts. If a teacher only occasionally glances at his "cheat sheets" and provides material in addition to the textbook, then, no doubt, his lectures will be attended. And if he also has a sense of humor, his lectures will not only be listened to, but also quoted, this is just an ideal lecturer.

The rapid development of computer technology in the modern world has covered almost all spheres of society, including education. Due to this the personal computer has become a powerful educational tool. However, this does not mean at all that the computer, which takes over part of the teacher's functions, can displace the teacher from the learning process. On the contrary, skillful cooperation between a person and a personal computer in education will make the learning process more effective.

The priority direction in the field of modern education is the transition to the implementation of the STEM model, that requires updating of the content of scientific, mathematical and technological educating fields (governmental standards, education programs, textbooks, exercise manuals, didactic materials, studying means, online education resources et cetera).

During the development of a working curriculum of the discipline "Higher Mathematics" (Syllabus) at the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", the teacher justifies the need to study the discipline – higher mathematics, answering the question "Why should a future specialist teach this discipline?", which skills, abilities, experience the applicant of higher education acquires after studying higher mathematics.

However, programs and curricula alone are not enough to ensure that training is carried out in the most rational way and with optimal benefit for the business. A correctly formulated and well-thought-out teaching methodology is essential for success [3]. In technical universities, the need for the relationship between general education and vocational training leads to the fact that teaching mathematics has a professional orientation. A complex of specially developed and selected professionally oriented examples and tasks is one of the main means of implementing the principle of professional orientation of teaching mathematics.

Our research of first-year students of the Instrument-Making Faculty of National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” showed that most of them connect mathematics only with physics, there are also some students who see no connection between mathematics and other disciplines of the university, with the future profession [4]. We also conducted a survey of fourth-year students. As a reply to the question of the questionnaire “Do you think that mathematical knowledge should be used in your future profession?” all students chose “yes”. And to the question “How would you like to change the content of practical classes in mathematics?” students answered that it is necessary to solve more problems of applied subjects, to carry out independent work on search, development and solving problems concerning the future profession. One of the main directions of development of the education system at the present stage is the movement towards strengthening its applied and practical orientation. In this regard, the task related to the development and implementation of learning technologies that would help provide students not only with a system of knowledge, skills and abilities, but also with certain personally significant qualities that are important outside the education system. Such technologies include the technology of the contextual approach, which assumes the linking of the learning process to the future professional activity of students, which, in turn, is the main motivating factor of the learning process.

Using contextual tasks in the process of teaching mathematics:

- contributes not only to increasing the cognitive activity of students, but and allows to achieve the required level of mathematical knowledge in terms of their application in future professional activities;
- leads to the correct perception and understanding by students of the very essence of the mathematical methods they study, not just the formal memorization of their handwriting in the form of formulas, equations, functions;
- assists in the processes of “interdisciplinary integration”;
- contributes to the strengthening of mutual cooperation between pedagogues teaching specialized disciplines and teachers of mathematics, that, in turn, leads to a more thoughtful compilation of programs in mathematics, considering the opinions of specialists from the graduating departments.

For the correct formulation of teaching mathematics, it is necessary to achieve a certain level of understanding between mathematics departments and special departments. Success is evident where this level is high enough [3].

This competence provides an individual approach and the maximum development of knowledge of each student. In addition to knowledge of normative teaching methods, it is necessary for each teacher, taking into account the accumulated pedagogical experience, to have their own teaching methods, which are personality-oriented, an integral part of which are the methods of educational activities of the teacher and student, aimed at solving a specific problem.

The introduction of science and mathematics education is carried out taking into account the following principles: personal approach aimed at considering the age, individual characteristics of students, their interests and abilities; constant updating of the content of education taking into account the achievements of science, technology development and labor market requirements; use of technologies of developmental and problem-based learning.

The problem should be understandable to students, and its formulation should arouse the interest and desire of students to solve it. Problem-based learning is focused on the formation and development of students’ ability to creative activity and the need for it, therefore, we will consider the problem-applied learning context.

The principles on the basis of which the problem-applied context can be created in the process of teaching mathematics to technical universities students are:

- the principle of updating the content of education – ensuring the personal inclusion of students in educational activities, their conscious assimilation of the content of education, the formation of a system of basic knowledge – the basis for professional growth and professional mobility;
- the principle of applied orientation – the orientation of the content and methods of teaching towards the formation of students’ readiness to use the mathematical apparatus during study of related disciplines and in various types of future practical activities, using the means of information and communication technologies;
- the principle of the leading role of interpersonal interaction – the highlighting of cooperative activities (first the teacher and students, and then students among themselves) as the leading activity in the learning process (formation of students’ readiness for productive work in the production team).

We conducted a survey of second-year students using the “Methods of self-assessment of motives for educational, cognitive and professional activities” N. A. Bakshaeva, A. A. Verbytsky [5], which showed [4] that the application for two years of problem-applied context in teaching students mathematics based on the use of problem-based teaching methods, helps to increase students’ interest in learning mathematics by intensifying their educational and cognitive activities, development independence, the disclosure of creative potential.

The problem-applied context is the main, but not the only one in students “education, its main function is to motivate, activate students” activities, develop thinking and creative potential, promote conscious assimilation of learning content.

The Concept of STEM-education emphasizes that “the introduction of science and mathematical education requires pedagogical and scientific-pedagogical workers to actively use the latest pedagogical approaches for teaching and assessment, innovations in education, interdisciplinary learning practices, teaching methods and tools that promote research and inventive competencies of students”.

As you know, mathematics is very difficult for the majority of students to master. Therefore, the teacher of mathematics is placed in especially difficult conditions. The implementation of an individual approach in teaching

mathematics becomes mandatory. The teacher must believe in the strengths and capabilities of the students, without which it is impossible to reveal the potential abilities of the student. It is very important to abandon the accusatory position in attitude of the teacher towards the student. A teacher, like any educator, should strive not to punish a student for a particular offense, but to devote the efforts and time to prevent such offenses and eliminate the causes that are reasoning them, fostering students' activities in the right direction [3]. The teacher must be able to create situations in which the student will be successful, conduct a competent assessment of the student's results, which will contribute to the mobilization of learning activities.

Regular monitoring of students' work is also very useful. If it is properly established, it helps to identify the main and basic in the discipline being studied, to distribute the time of classes in the right way, and to the teacher to provide the student with the necessary help at the right time – all of that is a reliable guarantee of the success of training [3].

Today, the whole world is in the conditions of strict quarantine measures and learning in isolation has become a challenge for all participants of the educational process. The introduction of quarantine and the need to continue the educational process using distance learning tools have become a real challenge for higher education institutions.

Distance learning is a new, specific form of learning, the basis of which is the independent work of students and the widespread use of modern information and telecommunication technologies, learning platforms that allow education distantly. National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" uses the distance learning platform "Sikorsky" – this is an open virtual learning environment of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", which provides administrators, teachers and students with ample opportunities for the use of modern technologies of distance learning, development of academic disciplines web resources, organization of interaction between teachers and students, as well as management of distance learning process. Distance learning also performs an upbringing function – it promotes the formation of independence, self-improvement and creativity of students.

It is important to mention one of the difficulties of distance learning from the point of view of research and teaching staff – is the lack of "live" contact between teacher and student.

Students who reluctantly communicate in the course of classroom studies due to psychological reasons, during the period of distance learning can maintain contact with the teacher through electronic means of communication. Particularly relevant in the period of distance learning is individual counseling of students by a teacher.

Individual counseling of students by the teacher can take place via e-mail.

We have identified and used the following forms complex of education organization:

- introductory informational lecture at the beginning of the course of study, which orients technical university students in the specifics of the discipline "Mathematics";
- problem-setting lecture at the beginning of the study of each topic, built as a sequence of problem situations, the content of which are introductory-illustrative and introductory-problem applied tasks;
- traditional lectures and workshops;
- seminars dedicated to the analysis of students' independent work, at which, individually or through group activities, students present the results of problem homework assignments;
- seminars with using work in small groups, the content of which is the solving of standard applied problems, contributing to the formation of various types of educational activities and the development of quasi-professional activities of students;
- extracurricular independent work of students.

The methodology for conducting classes developed by us contributes to the establishment of a connection between the abstract mathematical sciences and the future professional activity of students by identifying the problems of this activity, the solving of which is facilitated by the use of the studied mathematical material.

One of the goals of teaching mathematics is to develop motivation for learning [6]. If we consider the problem of the formation of motivation for the study of mathematical disciplines of students of a technical university, then the development of motives associated with the content of the teaching is facilitated by the teacher's activities aimed at, on the one hand, to show the beauty of mathematical statements, proofs, reasoning, on the other hand, to demonstrate the need for a student to master rather difficult theory for getting the chosen profession. In this case, the use of professionally oriented tasks and other methods of a competence-based approach to teaching mathematics in the educational process is particularly relevant [4].

It is possible to highlight the problems which freshmen meet in the first days of studying:

- 1) low level of mathematical knowledge, skills and abilities;
- 2) weak motivation to learn and fulfill the requirements set by the teacher, lack of skills in achieving the objectives, weak self-control and self-organization.

Considering these factors, first- and second-year students of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" were asked to fill out a questionnaire "What motivates me to study?" The questionnaire was filled in (anonymously) by 75 students.

There were 10 questions in the proposed questionnaire. The student had to put priority points from 1 to 10 in front of each point (1 point will receive the strongest motivation, 10 points – the weakest).

The results of the questionnaire showed that the first three places are occupied by motivations № 3 “Desire to get a grade on the exam”, № 1 “Professionalism and personality of the teacher”, № 2 “Desire to gain knowledge of the subject, interest in mathematics” [1]. Such motivation of students to study makes learning not only necessary, but also attractive, gives strength to overcome difficulties, to show patience, perseverance, perseverance. The results of the student survey allowed teachers to make adjust teaching and educational work in groups.

The development of motives associated with the learning process is facilitated by the use of computer tools, elements of research activities in the educational process, training sessions in the form of scientific seminars, discussions, student mathematical competitions and contests. Every year, before the Day of the Faculty, we hold an Olympiad in higher mathematics among 1st and 2nd year students of the instrument-making faculty of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”. The winners of the Olympiads receive financial encouragement and additional points to the semester rating.

Motivation to deeply master the foundations of mathematics contributes to a further deeper understanding of special disciplines. As a result, the students who successfully participated in mathematical Olympiads and competitions in their junior years, had a high rating in the exact sciences, often later on during higher courses and after graduating from the university achieve success in research activities.

Conclusions. The professional competence of the teacher is determined not only by his experience and professionalism, the presence of universal human qualities, but also the ability, in accordance with their pedagogical experience, to form these qualities in students. It is mathematics, its methods of reasoning that develop logical thinking and develop the student’s mental ability, pave the way between different sciences and serve as the basis on which modern achievements of society are built and maintained.

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Рудик Т. О., Суліма О. В. Про професійну компетентність викладача вищої математики в технічному університеті

Вища освіта на сучасному етапі свого розвитку вимагає нового педагогічного мислення для задоволення потреб суспільства в інтелектуально розвинених, освічених і відповідальних фахівцях, здатних конструктивно та творчо працювати в соціально-економічних умовах, що постійно змінюються.

Викладач є не лише носієм і передавачем наукової інформації, а й організатором пізнавальної діяльності студентів, їхньої самостійної роботи, наукової творчості.

Суттєва роль математики в інтегративному підході до реалізації природничо-математичної освіти вимагає послідовного, ґрунтовного, якісного її викладання. Професійна компетентність викладача вищої математики в технічному університеті – це здатність до здійснення своєї професійної діяльності. Мета статті – обґрунтувати, що основна професійна компетентність викладача математики полягає в умінні не тільки познайомити студентів з основами вищої математики, а й викликати зацікавленість до предмета, сформувати математичну компетентність студентів технічного університету як невід’ємний складник їхньої загальнокультурної і професійної компетентності, а також показати значимість математичних знань і вмінь.

У статті визначені базові компетентності, які в сукупності визначають успіх викладацької діяльності викладача вищої математики в технічному університеті. Наведено результати анкетування студентів I та IV курсів приладобудівного факультету Національного технічного університету України "Київський політехнічний інститут імені Ігоря Сікорського", яке свідчить про бажання студентів на практичних заняттях із вищої математики більше розв'язувати задачі прикладної тематики, проводити самостійну роботу з пошуку, розроблення та розв'язку задач, що стосуються майбутньої професії.

Ключові слова: професійна компетентність, викладач, математика, студенти, проблемне навчання, мотивація, професійна діяльність.

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МЕТОДИЧНІ ЗАСАДИ ФОРМУВАННЯ ДИРИГЕНТСЬКО-ХОРОВОЇ КУЛЬТУРИ МАЙБУТНІХ ФАХІВЦІВ В УМОВАХ ПЕДАГОГІЧНИХ ВУЗІВ

У статті розглянуто методичні засади формування диригентсько-хорової культури майбутніх фахівців в умовах педагогічних вузів. Підкреслено, що сучасні вимоги освітньої системи України передбачають необхідність методичного забезпечення цілеспрямованого освітнього процесу фахової підготовки майбутніх учителів мистецтва. Уточнено поняття "професійна культура", "диригентсько-хорова культура". Проаналізовано правові документи та науково-педагогічні дослідження, що відповідають вимогам до майбутнього фахівця вищої сучасної школи.

У зв'язку із цим визначено завдання з формування диригентсько-хорової культури в умовах педагогічних вузів, а саме: 1) реалізовувати міжпредметні зв'язки диригентсько-хорового циклу; 2) розвивати в майбутніх фахівців диригентсько-хорові знання, навички, уміння; 3) використовувати можливості освітнього середовища педагогічного вузу, що передбачає спрямування педагогічної взаємодії на зміцнення духовного світогляду майбутніх фахівців; 4) формувати в майбутніх фахівців диригентсько-хорову культуру, здатність до комплексного саморозвитку в музично-педагогічному аспекті.

Окреслено методичні засади, що передбачають виконання певних завдань, а саме: метод засвоєння диригентсько-хорових знань, умінь, навичок; метод евристичної бесіди; метод персоналії; метод культурного контексту; метод роз'яснення; метод поточного й підсумкового контролю. У зв'язку зі зростанням інформаційно-технічного прогресу використання комп'ютерних технологій передбачає застосування різних методів і форм формування диригентсько-хорової культури в майбутніх фахівців.

З огляду на вищесказане можемо стверджувати, що визначені методичні засади відповідають ефективному результату формування диригентсько-хорової культури в майбутніх фахівців в умовах педагогічних вузів.

Ключові слова: завдання, методичні засади, майбутні фахівці, диригентсько-хорова культура, педагогічні вузи.

Сучасні вимоги освітнього простору України потребують фахівців із високим професійним рівнем знань, навичок, умінь. Тому виникає необхідність методичного забезпечення цілеспрямованого освітнього процесу фахової підготовки майбутніх учителів мистецтва, що допомагає вдосконалювати особистісні та професійні якості, які виявляються в мотивації і подальшій професійній діяльності [5].

У контексті підготовки майбутніх учителів музичного мистецтва є потреба в дослідженнях теоретико-методологічної основи диригентсько-хорової освіти, обґрунтуванні методичних засад післядипломного освітнього музичного досвіду майбутніх фахівців, адже музично-мистецька освіта сьогодні вимагає формування професійної, художньо-інтелектуальної особистості.

Підкреслимо, що поняття "диригентсько-хорова культура" майбутнього фахівця розглядаємо як специфічний вияв його професійної культури в напрямі музично-педагогічної та виконавської діяльності. Із цього приводу В. Гриньова визначає поняття "професійна культура" як "певний ступінь оволодіння професією, певні способи та прийоми вирішення професійних завдань на основі сформованої духовної культури особистості, рівень якої передбачає зміст професії як соціально-культурного явища з певною структурою, що включає предмет, засоби та результат професійної діяльності (цілі, цінності, норми, методи та методики, зразки й ідеали)" [1, с. 12].

Питання досліджуваного феномену історично визначили фундатори диригентсько-хорової освіти, наприклад Л. Андрєєва, М. Лисенко, М. Леонтович, М. Колеса, В. Живов, А. Єгоров, В. Мархлевський та інші. Музикознавчий аналіз окремих питань щодо організації підготовки хорових диригентів розкрито в наукових працях С. Волкова, П. Ковалик, А. Лашенко, Ю. Лошкова, А. Мартинюк, А. Мірошникової, О. Михайличенко, П. Ніколаєнко, Є. Савчук, Є. Скрипчинської, Т. Смирнової, А. Соколової, О. Тимошенко та інших фахівців. Виконавські диригентсько-хорові проблеми висвітлені в дослідженнях А. Авдієвського, А. Болгарького,