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## TECHNOLOGIES OF EMOTIONAL SELF-REGULATION: A MUSIC EDUCATION CONTEXT

### Abstract

The study is devoted to the study of the effectiveness of an experimental methodology for the formation of Pop Vocal Performing Competence (PVPC) through emotional self-management techniques among future music teachers in the process of their professional university training. Based on research in the fields of emotional intelligence, vocal pedagogy, and the psychology of music pedagogy, a diagnostic tool has been developed to evaluate the four-component PVPC structure using questionnaires, peer review, introspection rubrics, and creative assignments.

A pedagogical experiment was conducted to implement the developed methodology with the participation of control (n = 87) and experimental (n = 91) groups through two-stage verification - preliminary and post-assessment. The results of the preliminary assessment did not show significant differences between the groups. After the introduction of the author's methodology into the educational process, the experimental group demonstrated statistically significant improvements in all PVPC indicators: t-tests of independent samples showed a significant effect of the methodology ( $t(176) = 13.45, p < 0.001$ ; Cohen's  $d = 2.02$ ), and a2-tests confirmed a significant redistribution of students from the basic level of PVPC education to advanced and advanced ( $a2(3, N = 178) = 88.76, p < 0.001$ ). The correlation calculation additionally confirmed the consistency of the PVPC construct components and the validity of the diagnostic device.

In general, the results confirmed the effectiveness of the author's methodology and demonstrated that the integration of emotional self-management technologies into music pedagogical training within the framework of the application of sound scientific approaches and targeted pedagogical strategies leads to a noticeable increase in the level of PVPC formation.

**Keywords:** music teacher training, competence, pop vocals, self-management technologies, emotional intelligence.

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## ТЕХНОЛОГИИ ЭМОЦИОНАЛЬНОГО САМОУПРАВЛЕНИЯ: МУЗЫКАЛЬНО-ПЕДАГОГИЧЕСКИЙ КОНТЕКСТ



### Аннотация

Исследование посвящено изучению эффективности экспериментальной методики формирования Pop Vocal Performing Competence (PVPC) through emotional self-management techniques у будущих учителей музыки в процессе их профессиональной вузовской подготовки. С опорой на исследования в области эмоционального интеллекта, вокальной педагогики и психологии музыкальной педагогики был разработан диагностический аппарат для оценивания четырехкомпонентной структуры PVPC с использованием анкет, экспертного оценивания, рубрик самоанализа и творческих заданий.

Был проведен педагогический эксперимент по внедрению разработанной методики с участием контрольной (n = 87) и экспериментальной (n = 91) групп посредством двухэтапной проверки - предварительное и пост оценивание. Результаты предварительного оценивания не показали значительных различий между группами. После внедрения авторской методики в образовательный процесс экспериментальная группа продемонстрировала статистически значимые улучшения по всем показателям PVPC: t-тесты независимых выборок показали значительный эффект методики ( $t(176) = 13.45, p < 0.001$ ; Cohen's  $d = 2.02$ ), а  $\chi^2$ -тесты подтвердили существенное перераспределение студентов с базового уровня сформированности PVPC на развитый и продвинутый ( $\chi^2(3, N = 178) = 88.76, p < 0.001$ ). Расчет корреляции дополнительно подтвердил согласованность компонентов конструктора PVPC и валидность диагностического аппарата.

В целом результаты подтвердили эффективность авторской методики и продемонстрировали, что интеграция в музыкально-педагогическую подготовку технологий эмоционального самоуправления в рамках применения обоснованных научных подходов и целевых педагогических стратегий приводит к заметному повышению уровня сформированности PVPC.

**Ключевые слова:** подготовка учителей музыки, компетентность, эстрадный вокал, технологии самоуправления, эмоциональный интеллект.

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## МУЗЫКАЛЫҚ-ПЕДАГОГИКАЛЫҚ КОНТЕКСТТЕ ЭМОЦИОНАЛДЫ ӨЗІН-ӨЗІ БАСҚАРУ ТЕХНОЛОГИЯЛАРЫ

*Аңдатпа*

Зерттеу болашақ музыка мұғалімдерінің кәсіби университеттік дайындық үдерісінде Pop Vocal Performing Competence (PVPC) through emotional self-management techniques қалыптастырудың эксперименттік әдістемесінің тиімділігін зерттеуге арналған. Эмоционалды интеллект, вокалдық педагогика және музыкалық педагогика психологиясы саласындағы зерттеулерге сүйене отырып, сауалнамаларды, сараптамалық бағалауды, рубрикалық айдарларын және шығармашылық тапсырмаларды пайдалана отырып, PVPC төрт компонентті құрылымын бағалауға арналған диагностикалық аппарат әзірленді.

Екі сатылы тексеру - алдын ала және пост-бағалау арқылы бақылау (N = 87) және эксперименттік (N = 91) топтардың қатысуымен әзірленген әдістемені енгізу бойынша педагогикалық эксперимент жүргізілді. Алдын ала бағалау нәтижелері топтар арасында айтарлықтай айырмашылықтарды көрсетпеді. Авторлық әдістемені білім беру үдерісіне енгізгеннен кейін эксперименттік топ PVPC барлық көрсеткіштері бойынша статистикалық маңызды жақсартуларды көрсетті: тәуелсіз үлгілердің t-тестілері Әдістеменің айтарлықтай әсерін көрсетті ( $t(176) = 13.45$ ,  $p < 0.001$ ; Cohen's  $d = 2.02$ ), а  $\chi^2$ -тесттер студенттердің PVPC қалыптасуының базалық деңгейінен дамыған және жетілдірілген деңгейге қайта бөлінуін растады ( $\varphi^2(3, N = 178) = 88.76$ ,  $p < 0.001$ ). Корреляцияны есептеу PVPC құрылымдық компоненттерінің сәйкестігін және диагностикалық аппараттың жарамдылығын одан әрі растады.

Тұтастай алғанда, нәтижелер авторлық әдістеменің тиімділігін растады және негізделген ғылыми тәсілдер мен мақсатты педагогикалық стратегияларды қолдану шеңберінде эмоционалды өзін-өзі басқару технологияларын музыкалық-педагогикалық дайындыққа интеграциялау PVPC қалыптасу деңгейінің айтарлықтай жоғарылауына әкелетінін көрсетті.

**Түйін сөздер:** музыка мұғалімдерін даярлау, құзыреттілік, эстрадалық вокал, өзін-өзі басқару технологиялары, эмоционалды интеллект.

**Introduction.** The effective training of future music teachers is one of the priorities of the higher education system, given that it is music teachers in schools, colleges, and extracurricular institutions who, through their professional activities, contribute to the younger generation's introduction to musical culture, shape their aesthetic taste, their appreciation of art, and their ability to express themselves creatively (Hallam, 2002). At the same time, it should be borne in mind that, traditionally, the dominant musical environment in culture is shaped not so much by the academic repertoire as by popular music. It is popular music, historically rooted in folk song traditions, that functions as a socially significant means of expressing emotions and reflecting social experience.

Ethnomusicological studies show that popular music genres have traditionally conveyed collective emotions, recounted socially significant events, and addressed common issues, including in satirical and humorous forms, thereby supporting social communication and shaping cultural identity in communities (Walker, 2019). Contemporary popular music continues to perform this function, maintaining its relevance as the primary emotionally expressive form of folk art (Rodriguez, 2017).

Today, the main genres of popular music are pop, rock, R&B, hip-hop (and related genres). Compositions in these genres generate intense and sustained interest among people around the world, as evidenced by statistics on engagement with them (especially among young people) through digital media and the desire to imitate the vocal styles of famous performers (Rodriguez, 2017). And if music education ignores this reality, a gap arises between students' actual musical preferences, their actual musical practice, and the school curriculum. This gap undermines motivation and limits understanding of the significance of academic music education. For this reason, the training of music teachers should be aimed at developing competencies that will enable them to professionally perform popular music and corresponding vocal styles, as well as effectively teach such performance to students.

In this context, the central pedagogical resource is the pop vocal performance competence of future music teachers, as an integral ability to perform and teach pop vocal repertoire, revealing its stylistic and

artistic-expressive features, as well as teaching pop vocals, creating a space for vivid and active artistic communication in the music education process (Rodriguez, 2017).

Based on an analysis of psychological and pedagogical literature (Sydykova et al., 2020), this competence is viewed as a multi-component construct, the basis of which is provided by a value-based attitude towards popular music as such and the development of the field of professional pop vocal training (Emotional-motivational component) (Bolatkhan et al., 2025). Also, important functions of this construct are realised thanks to such components as:

- Cognitive-epistemological, which encompasses knowledge of the ethnocultural foundations, traditions and artistic methods of the pop vocal repertoire, as well as the ability for metacognitive emotional self-management in professional activity (Khmelevska & Rebrova, 2025);

- Empathic-communicative, responsible for the ability to communicate artistically based on an emotional understanding of artistic events, as well as other participants in artistic communication (audience, students, other musicians in the ensemble);

- Assertive-self-regulatory, responsible for the ability to self-assess and emotionally self-regulate by managing one's own anxiety and transforming negative emotions into artistic experiences. This component also encompasses the ability to perform artistic suggestion by convincingly conveying the emotional content of music to listeners through the use of appropriate means of vocal and stage expressiveness (Bolatkhan et al., 2025).

The definition of these components is supported by research findings in the fields of music psychology, performance science, and music pedagogy. For example, research on self-regulated learning shows that experienced performers and effective teachers use reflection, metacognition, and purposeful self-regulation of learning and emotions during performances (Kenny, 2011). Research on emotional intelligence shows that the perception, understanding, and regulation of emotions influence the quality of communication, stress management, and the ability to create a supportive learning environment (Brackett et al., 2011). Research on musical performance anxiety demonstrates that emotional self-regulation strategies based on cognitive restructuring, attention control, and somatic techniques can transform anxiety from a destructive factor into an artistic experience, thereby contributing to the discovery of authentic means of musical expression (Kenny, 2011). It has also been proven that expressive body movements (posture, gestures, facial expressions), interacting with voice intonation, contribute to the embodiment and understanding of the artistic image of a musical work by the audience (Davidson, 2001; Juslin & Laukka, 2003).

The presence of these abilities in future music teachers has direct pedagogical implications. For example, developed emotional intelligence and the associated self-regulation influence how they present artistic phenomena, respond to students' mistakes, and generally manage artistic communication in the classroom (Brackett et al., 2011). The ability of music teachers to convincingly perform and demonstrate relevant vocal styles influences students' trust and engagement in learning and performing activities (Rodriguez, 2017). The aforementioned pedagogical implications determine the relevance of developing a methodology for forming the pop vocal performance competence of future music teachers. At the same time, the introduction of such a methodology into the process of training future music teachers requires empirical confirmation of its effectiveness. Proof of such effectiveness can be found in experimentally obtained evidence that the pedagogical strategies developed within the framework of the methodology allow for a measurable increase in the level of development of the components of pop vocal performance competence in future music teachers.

The aim of this study is to evaluate the effectiveness of a pedagogical methodology aimed at developing the pop vocal performance competence of future music teachers by integrating pedagogical strategies specifically developed within its framework into the process of professional training of future music teachers. To achieve the main objective of the study, a number of tasks were identified, namely: to develop a set of criteria for assessing the level of development of the components of pop vocal performance competence of future music teachers (hereinafter referred to as PVPC); to conduct a

pedagogical experiment on the implementation of the developed methodology in the educational process with pre- and post-assessment of the level of development of its components; to analyse the data obtained using appropriate statistical methods to determine whether the observed changes confirm the effectiveness of the developed methodology.

*Basic provision.* This study argues that to develop Pop Vocal Performing Competence (PVPC) in future music teachers, which ensures their ability to effectively perform and teach pop vocals, it is advisable to use a special methodology that integrates emotional self-management techniques. The effectiveness of this methodology is ensured by several scientific approaches and pedagogical strategies developed with the established structure of PVPC in mind. The results of experimental testing of the PVPC formation methodology using criterion-based assessment and statistical methods (t-tests,  $\chi^2$ -tests, effect sizes, correlation indicators) are provided, confirming the effectiveness of the proposed methodology and the validity of the diagnostic apparatus.

**Materials and methods.** To achieve the research objective of introducing the PVPC methodology into the professional training of future music teachers, an elective course entitled 'Pop Vocal' was developed. The methodological basis of the course consisted of a number of approaches, in particular:

- technological, allowing the integration of pedagogical and digital technologies (interactive media, virtual reality environments, online platforms, AI-based analytical tools for emotion recognition and feedback) to model the processes of emotional self-regulation in pop vocal performance (Bolatkhan N. et al., 2025; Khmelevska & Rebrova, 2025);

- reflective, which was used to develop students' ability for emotional and performance self-analysis through awareness of internal states during artistic activity (Moon, 2013);

- constructivist, which contributes to the formation of the knowledge base of musical interpretation – performance and pedagogical – activities and at the same time stimulates students to identify personal meanings in artistic communication with a work of art (Shively, 2015);

- the multicultural approach enabled students to comprehend the ethnocultural foundations of pop vocal styles, in particular how modes of artistic and emotional expression and stylistic features vary across different traditions and cultural contexts (Miendlarzewska & Trost, 2014).

- collaborative and facilitative approaches created conditions for empathic interaction in joint creative work, contributing to the formation of the ability to provide emotional support in ensemble performance and pedagogical processes (Barrett, 2014).

- the creative-praxiological approach provided the basis for the integration of creative research and vocal performance, in particular through the development of an understanding of the artistic image in the process of musical performance through experiments with sound and movement, and improvisation to improve the expressiveness of performance (Davidson, 2001).

The research design made it possible to compare the initial level of PVPC formation, implement the author's methodology, and analyse changes in the levels of formation of the four components in its structure (Emotional-motivational, Cognitive-epistemological, Empathic-communicative, Assertive-self-regulatory).

A total of 178 undergraduate students of Abai KazNPU studying under the Music Education programme voluntarily participated in the experiment. The control group (hereinafter CG) consisted of 87 students, while 91 students joined the experimental group (hereinafter EG). All respondents underwent the same diagnostic procedures, but only the students who were part of the EG underwent training as part of an elective course.

A system of criteria and indicators was developed for the diagnosis in accordance with the established PVPC structure. The diagnostics were carried out using the following methods:

- questionnaires aimed at self-analysis of motivation, professional orientation, awareness of the mechanisms of emotional self-regulation in pop vocal performance, and the formation of interpretive thinking;

- expert assessment rubrics evaluating vocal-technical stability, expressiveness, communicative sensitivity, and regulatory behaviour;
- expert assessment of the performance of diagnostic tasks on the interpretation and performance of pop vocal works;
- reflection analysis tools, in particular semi-structured questionnaires for interpretative, performance and pedagogical self-analysis.

A four-level scale developed within the diagnostic model (low, basic, developed and advanced levels) was used to assess each indicator.

The experimental group took an elective course consisting of three modules. Each module combined theoretical training and practical classes, during which techniques of emotional self-reflection and self-regulation, cognitive restructuring, self-imagination, and mindfulness training were applied. The forms of master classes, ensemble music-making, training sessions with modelling of various situations of stage performance, as well as analytical tools using virtual reality technologies were practised.

As part of the analysis of the diagnostic results, descriptive statistics were calculated for each indicator and criterion. Intergroup comparisons were performed using t-tests for independent samples and  $\chi^2$ -tests for the analysis of categorical distributions by PVPC development levels. Cohen's d effect sizes were used to quantitatively assess the magnitude of the differences. Statistical significance was set at  $p < 0.05$ . Overall, the analysis was conducted in accordance with the recommendations for educational research with large samples.

**Results.** To assess the level of PVPC development, a diagnostic tool was developed that corresponds to the identified component structure. Thus, the value-expressive criterion was chosen to diagnose the development of the emotional-motivational component, given that it is precisely the value attitude towards a particular activity and the corresponding educational field that provides the motivational basis for learning, manifesting itself through professional perseverance and creative initiative (Burak, 2019). In this regard, the following indicators were selected for this criterion:

- the level of awareness of the importance of developing the field of professional pop vocal training;
- the degree of intention to embody one's own understanding of artistic meanings in vocal performance.

The Cognitive-epistemological component was assessed for compliance with the indicators of the interpretative-reflective criterion, based on research demonstrating that musical-theoretical and musical-historical knowledge of a musical work manifests itself in the ability to apply it in interpretation (Agawu, 2025), just as knowledge of the mechanisms of emotional regulation is embodied in the ability to apply techniques of cognitive restructuring, visualisation, attention switching and awareness at all stages of performance and pedagogical activity (Lopez et al., 2024). On this basis, the following indicators were identified:

- the level of ability to apply ethnocultural, stylistic, and theoretical knowledge in the interpretation of pop vocal repertoire;
- the degree of reflection and awareness in identifying and regulating one's emotional states in performance and teaching situations.

The Empathic-communicative component was assessed for compliance with the interactive-synergistic criterion, which was determined on the basis of studies of empathic communication and expressive coordination in musical activity, in particular demonstrating that multimodal expressiveness (voice, gestures, facial expressions) is important in artistic communication with the audience and other performers in an ensemble (Davidson, 2001). The following indicators were developed for this criterion:

- the ability to initiate and maintain artistic and emotional communication with the audience, ensemble members and students in the vocal teaching process;
- the level of empathy in ensemble music-making and the vocal teaching process to intensify the artistic expressiveness of the performance.

To assess the Assertive-self-regulatory component, a resilience-performative criterion was chosen, reflecting the proven fact that self-regulation in musical performance manifests itself in the ability to respond flexibly to emotional stress and transform performance anxiety from a destructive factor into an artistic and emotional resource, purposefully using psychophysiological and performance self-control techniques for this purpose (Kenny, 2011). The following indicators were selected for this criterion:

- the degree of ability to transform musical performance anxiety into constructive artistic energy in the performance and vocal-pedagogical processes;
- the level of self-control, confidence and balance of expression in the use of vocal and stage techniques for embodying the artistic image in performance, and vocal pedagogical illustration.

The elective course ‘Pop Vocals’ was developed with the aim of introducing the author's methodology for forming PVPC into the educational process of training future music teachers. The course is based on a set of scientific approaches (technological, reflective, constructivist, multicultural, facilitative, collaborative, creative-praxiological, health-promoting), as well as a number of pedagogical strategies. In particular, during the module ‘Axiological Foundations of Pop Vocal Performance,’ aimed primarily at forming the Emotional-motivational component, the main pedagogical strategy was to encourage students to engage in musical-performance self-analysis and professional self-design (Moon, 2013; Zhang et al., 2021). The module ‘Theoretical Foundations of Emotional Self-Management in the Performance of Pop Vocal Repertoire’ was developed to focus specifically on the formation of the Cognitive-epistemological component, for which the pedagogical strategy was to stimulate students' cognitive activity in relation to artistic and emotional expressiveness and emotional self-regulation in pop vocal performance (Kenny, 2011; Lopez et al., 2024). The module ‘Emotional self-regulation in the performance and teaching of pop vocal repertoire as a communicative-creative process’ was aimed at the comprehensive formation of Empathic-communicative and Assertive-self-regulatory components, for which a pedagogical strategy was implemented to reinforce the manifestation of creativity, communicative empathy and emotional intelligence in pop vocal performance and music teaching processes (Miendlarzewska & Trost, 2014).

To verify the effectiveness of the author's methodology for forming PVPC, an assessment was made of its compliance with the developed criteria and indicators before and after its implementation in the educational process. A comparison of the results at the ascertaining stage of the experiment confirmed that the control group ( $\bar{x} = 1.31$ ;  $SD = 0.51$ ;  $n = 87$ ) and the experimental group  $\bar{x} (= 1.30$ ;  $SD = 0.50$ ;  $n = 91$ ) did not differ significantly before the intervention. The calculation of the independent t-test showed no significant differences:

$$t(176) = 0.14; p = 0.89; d = -0.02.$$

The distribution of respondents by PVPC formation levels was also statistically equivalent:

$$\chi^2(3, N = 178) = 1.65; p = 0.65.$$

Thus, both samples began the experiment with comparable results, which confirmed the correctness of the distribution by groups and the reliability of subsequent comparisons.

The assessment conducted after the introduction of the elective course demonstrated significant changes. In particular, the EG showed a significant increase in the integral competence index (ICI), while the control group showed only minimal progress (see Table 1).

Table 1. Distribution of respondents by PVPC levels before and after the introduction of the methodology

Samples Levels	Pre-test				Post-test			
	EG n = 91		CG n = 87		EG n = 91		CG n = 87	
Advanced	0	0.00%	1	1.15%	33	36.26%	2	2.30%
Developed	10	10.99%	8	9.20%	52	57.14%	21	24.14%
Basic	22	24.18%	25	28.74%	4	4.40%	34	39.08%
Low	59	64.84%	53	60.92%	2	2.20%	30	34.48%
ICI	1.30		1.31		2.95		1.64	
SD	0.50		0.51		0.60		0.69	

Analysis using t-tests showed that the difference in the results of the EG and CG after the introduction of the methodology was statistically significant:

$$t(176) = -13.45, p < 0.001, d = 2.02.$$

In particular, the effect size ( $d = 2.02$ ) indicated a very significant effect, characteristic of pedagogical interventions involving long-term and effective training using emotional regulation technologies (Macnamara & Maitra, 2019).

Analysis using  $\chi^2$  tests showed that the introduction of the methodology led to a strong structural shift in the levels of PVPC formation, confirming a strong redistribution:

$$\chi^2(3, N = 178) = 88.76, p < 0.001.$$

The identified result indicated a qualitative change in the internal structure of PVPC formation, which was confirmed by correlation analysis (construct validity and dynamics). In particular, the post-test correlation matrix showed high internal consistency ( $r = 0.70-0.97$ ) for most pairs of indicators, as well as strong consistency of criteria and indicators with ICI ( $r = 0.76-0.98$ ).

Analysis of the post-test results in CG also revealed stable moderate correlations ( $r = 0.60-0.89$ ), reflecting the development of individual indicators during training using traditional methods, without a specific focus on the formation of PVPC.

Thus, the strong correlation between criteria and indicators in both samples confirmed the validity of the PVPC construct, while the intense growth of correlations in the EG demonstrated that the introduction of the methodology strengthened the links between the components.

An analysis of changes at the component and indicator level ( $\Delta$  values) demonstrated their steady growth, which was particularly intense in the EG (see Table 2).

Table 2. Changes in PVPC formation at the level of criteria and indicators ( $\Delta$ )

Component	Criteria	Indicator	Experimental $\Delta$	Control $\Delta$
Emotional-motivational	value-expressive	1.1	1,63	0,29
		1.2	1,66	0,32
		$\bar{x}$	1,64	0,30
Cognitive-epistemological	interpretative-reflective	2.1	1,59	0,33
		2.2	1,48	0,31
		$\bar{x}$	1,53	0,32
Empathic-communicative	interactive-synergistic	3.1	1,73	0,48
		3.2	1,79	0,46
		$\bar{x}$	1,76	0,47
Assertive-self-regulatory	resilient-performative	4.1	1,58	0,23
		4.2	1,75	0,21
		$\bar{x}$	1,66	0,22

As can be concluded from the data in Table 2, the CG showed a moderate natural increase ( $\Delta = 0.3$ ) in the indicators of the Emotional-motivational component, reflecting typical improvements as a result of training under the traditional programme. At the same time, the EG showed a significantly more intense improvement ( $\Delta = 1.64$ ), reflecting the effect of using methods of motivation formation and training in transforming emotions into audio-visual artistic expression as part of an optional course.

The increase in the indicators of the Cognitive-epistemological component in the EG ( $\Delta = 1.48; 1.59$ ) indicates a deepening of understanding of the theoretical foundations of pop vocal performance, in particular during seminars on emotional awareness of the stylistic, ethnocultural and interpretative foundations of pop vocal performance within the theoretical and analytical module of the elective course.

The most noticeable improvements were observed in the analysis of the dynamics of the formation of the Empathic-communicative component ( $\Delta = 1.73; 1.79$ ). These indicators, related to interactive music-making, emotional responsiveness and ensemble communication, increased significantly thanks to the use of teaching formats that included collaborative creative tasks, emotional mapping and feedback cycles.

The greatest growth in a single indicator was observed in the analysis of the Assertive-self-regulation component (4.2;  $\Delta = 1.75$ ). This corresponds to the main focus of the intervention on emotional self-regulation, in particular the use of anxiety transformation techniques in the performance and pedagogical presentation process.

**Discussion.** The results of the study showed that the use of the author's methodology for developing Pop Vocal Performing Competence (PVPC) through the introduction of an elective course 'Pop Vocals' in the training of future music teachers leads to a consistent improvement in the level of development of all its components. The experimental group showed significantly higher post-test results compared to the control group in terms of the growth of indicators of those elements that were targeted by the pedagogical strategies and methods used in the elective course.

Significant progress in the formation of the Emotional-motivational component indicates that reflective understanding in an axiological context of the problems of developing the field of professional pop vocal training, self-analysis and artistic and value-based reflection on the process of performing a pop vocal repertoire have a positive effect on students' ability to interpret the artistic meanings of musical works and to realise the developmental role of pop vocal performance. This conclusion is consistent with research findings confirming that reflective methods contribute to strengthening and stabilising motivation, as well as developing self-efficacy in performing professions (Burak, 2019).

The steady growth in the Cognitive-epistemological component confirmed that students acquired knowledge about the ethnocultural and stylistic features of pop vocal compositions as a result of completing the module on the theoretical foundations of emotional self-management in the performance of pop vocal repertoire. In particular, the study of the features of pop vocal works through music-theoretical and music-historical analysis, participation in seminars on emotional awareness, as well as the study of cognitive restructuring and mindfulness techniques develops an understanding of the artistic concepts underlying pop vocals, as well as the ability to extrapolate the results of interpretative and reflective analysis into performance and pedagogical decisions (Lopez et al., 2024).

The growth in Empathic-communicative component indicators confirms that ensemble forms of musical-creative work, as well as emotional mapping methods and joint research-creative projects, enhance emotional responsiveness in the pedagogical process and develop the ability to perform pop vocal repertoire expressively. This conclusion is confirmed by the results of research into multimodal communication in musical performance, which affirm the important role of artistic and emotional coordination in collaborative musical creativity, as well as the significant interconnection between vocal technique and non-verbal vocabulary (gestures, facial expressions) in the context of artistic expressiveness (Davidson, 2001).

Significant improvements were noted in the level of development of the Assertive-self-regulatory component, which confirmed the effectiveness of training in vocal-performance stability and artistry in the context of developing the ability to purposefully transform performance anxiety into artistic emotions through techniques of breath control, attention control, and expressive self-control. This is consistent with the findings that emotional and cognitive-behavioural regulation methods reduce destructive pre-performance anxiety and increase artistic coherence (Kenny, 2011).

The correlation measurements provided evidence of the validity of the PVPC construct, in particular, the congruent interaction in its content of the Emotional-Motivational, Cognitive-Epistemological, Empathic-communicative, and Assertive-self-regulatory components. Also, stronger correlations between indicators in the experimental group based on post-test results indicate that the internal structure of competence became more coherent precisely because of the author's methodology. Overall, the results demonstrate that the elective course led to systemic changes in the formation of competence, and the diagnostic apparatus adequately reflected these changes.

**Conclusion.** The aim of the study was to test the effectiveness of the Pop Vocal Performing Competence (PVPC) methodology, based on the integration of emotional self-management technologies and the implementation of appropriate pedagogical strategies and methods in the

professional training of future music teachers in the format of an elective course 'Pop Vocals'. As part of the research tasks, a system of criteria and indicators of the levels of development of this competence was developed based on research in the field of emotional intelligence theory (Brackett et al., 2011), vocal pedagogy (Lopez et al., 2024), and performance psychology (Kenny, 2011). A pedagogical experiment, including pre- and post-assessment, allowed for empirical testing of the methodology. Analysis of the data confirmed its effectiveness; in particular, the experimental group demonstrated a statistically significant increase in all components, as well as a significant redistribution across levels of training and a significant effect size. Correlation matrices showed a coherent internal structure and strong consistency between indicators and the overall competence construct, confirming the validity of the diagnostic apparatus.

The results obtained allow us to assert that the methodological emphasis on emotional self-management, reflective practice, multicultural awareness, and performance self-regulation leads to a measurable improvement in the professional readiness of future music teachers to perform and teach pop vocal repertoire. It has also been demonstrated that the structure, forms, and methods of the elective course (seminars, training sessions with facilitative pedagogical support, joint creative projects, reflective diaries, etc.) contributed to the effective involvement of students in the educational process and facilitated the formation of their PVPC.

The proven effectiveness of the PVPC formation methodology determines possible directions for future research, in particular the feasibility of its adaptation for use in other educational programmes for training future professionals in the field of music education and musical art.

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## БОЛАШАҚ ПЕДАГОГ-ПСИХОЛОГТАРДЫҢ КӘСІБИ ЦИФРЛЫҚ ҚҰЗЫРЕТТІЛІГІН ДАМУДА ЗАМАНАУИ ЦИФРЛЫҚ ТЕХНОЛОГИЯЛАРДЫ ПАЙДАЛАНУ

Аңдатпа

Бұл мақалада болашақ педагог-психологтердің кәсіби цифрлық құзыреттілігін дамытуда қолданылатын заманауи цифрлық технологиялардың рөлі мен тиімділігі жан-жақты талданады. Зерттеу Л.Н.Гумилев атындағы Еуразия ұлттық университетінің «Педагогика және психология» мамандығының 1–2 курс студенттері арасында жүргізілді. Зерттеу барысында DigCompEdu моделі негізінде әзірленген 15 тармақтан тұратын сауалнама қолданылды. Сауалнама болашақ мамандардың цифрлық технологияларды кәсіби мақсатта қолдану жиілігін, онлайн ынтымақтастық құралдарымен жұмыс істеу тәжірибесін, интерактивті платформалар мен жасанды интеллект жүйелерін пайдалану қабілетін анықтауға бағытталды. Нәтижелер студенттердің басым бөлігі Google Workspace, Padlet, Kahoot, Mentimeter, ChatGPT және Canva сияқты құралдарды белсенді қолданатынын көрсетті. Бұл платформалар оқу процесін жандандырып, болашақ педагог-психологтердің мотивациясын, шығармашылық ойлауын және коммуникациялық дағдыларын дамытады. Сондай-ақ, студенттердің 78%-ы цифрлық технологиялар олардың кәсіби мотивациясын арттырғанын, ал 72%-ы коммуникация сапасын жақсартқанын атап өтті. Алынған деректер цифрлық құзыреттіліктің тек техникалық дағдыларды ғана емес, сонымен қатар этикалық жауапкершілік пен деректер қауіпсіздігін қамтитынын көрсетті. Зерттеу нәтижесінде болашақ педагог-психологтердің кәсіби даярлығында цифрлық технологияларды мақсатты және саналы түрде қолдану олардың инновациялық ойлауын, рефлексиялық қабілетін және өз бетінше шешім қабылдау дағдыларын қалыптастыруға ықпал ететіні анықталды.

**Түйін сөздер:** цифрлық құзыреттілік, педагог-психолог, заманауи технологиялар, кәсіби даму, мотивация, жасанды интеллект.