

**EDUCACIÓN Y PEDAGOGÍA**

# **CREATIVITY AND EMOTIONAL INTELLIGENCE DEVELOPMENT OF FUTURE MUSIC TEACHERS**

**DESARROLLO DE LA CREATIVIDAD Y LA INTELIGENCIA EMOCIONAL DE LOS FUTUROS  
PROFESORES DE MÚSICA**

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## ABSTRACT

The purpose of this research was to investigate the possibility for emotional intelligence and creativity development among future music teachers in an interactive learning environment. The sample of respondents included 60 senior students majoring in music teaching. Of this number, 30 people were distributed into the experimental group (trained following a specially developed program) and 30 – into the control group (trained following traditional methodology). The key method used within this work was comparative analysis. It was applied to compare the outcomes of the experimental group with those of control. As a result of the conducted study, it was uncovered that the most effective way to develop emotional intelligence and creativity is music therapy. In international practice, these conclusions can be taken advantage of by university educators in the field of music, art, and the like, as well as those working with gifted children, teaching music in inclusive schools and classes, and conducting specialized training directed at emotional intelligence and creativity enhancement.

## KEYWORDS

emotional intelligence; future teachers; interaction; learning; music; students

## RESUMEN

El propósito de esta investigación fue investigar la posibilidad de desarrollo de la inteligencia emocional y la creatividad entre los futuros profesores de música en un entorno de aprendizaje interactivo. La muestra de encuestados incluyó a 60 estudiantes de último año de la carrera de enseñanza de la música. De este número, 30 personas se distribuyeron en el grupo experimental (entrenado siguiendo un programa especialmente desarrollado) y 30 en el grupo de control (entrenado siguiendo la metodología tradicional). El método clave utilizado en este trabajo fue el análisis comparativo. Se aplicó para comparar los resultados del grupo experimental con los del control. Como resultado del estudio realizado, se descubrió que la forma más efectiva de desarrollar la inteligencia emocional y la creatividad es la musicoterapia. En la práctica internacional, estas conclusiones pueden ser aprovechadas por docentes universitarios en el campo de la música, el arte, etc., así como por aquellos que trabajan con niños superdotados, enseñan música en escuelas y clases inclusivas y realizan formación especializada dirigida a la atención emocional. potenciación de la inteligencia y la creatividad.

## PALABRAS CLAVE

inteligencia emocional; futuros maestros; Interacción; aprendizaje; música; estudiantes

## INTRODUCTION

A wide range of positive and negative emotions students experience during learning and daily life may well have a notable effect on their emotional intelligence and creativity. This relates, first of all, to the feeling of pride when a difficult composition is performed successfully, interest when learning new subjects, joy from various meaningful social activities (Nikolopoulou, 2018; Zia & Rouhollahi, 2020). Similarly, students may also feel anxiety when taking exams or learning a new piece of music, envy when observing the success of talented peers, anger when unfairly treated by classmates or teachers, and guilt or shame when intending to hurt or let down loved ones or fail to live up to the expectations of others (Bonnevill-Roussy et al., 2017). Of course, all of this affects the display of creative thinking. Given the vast amount of emotions students experience, emotional competence, which consists of understanding and controlling emotional intelligence, is central to their success (Dubovyk et al., 2020).

Emotional intelligence (EI) refers to a set of hierarchically organized core competencies for identifying, expressing, processing, and regulating emotions – both in self and others. The first comprehensive study of EI was conducted by Mayer and Salovey in the late 1990s. They popularized the concept of EI in the academic community and developed the first ability-based measure of this construct. However, the popularity of EI over the years seems to largely result from Goleman's book "Emotional Intelligence" (Goleman, 1995). In addition to becoming an international bestseller, the book has served as a powerful impetus for worldwide media attention to EI. Based on some bold claims by Goleman and others in the popular press, EI has been hailed as a panacea and teaching EI in universities, workplaces, and mental health clinics was proposed as the solution to many of the ills plaguing modern society (Johnson, 2017; Zeidner & Matthews, 2017).

The academic world often refers to EI as a metacognitive trait that affects learning. Being a skill for understanding and managing emotions, EI allows students to cope with negative situations (Jamshed & Majeed, 2019). This ability is important for learning, professional growth, and everyday decision-making. For students majoring in music teaching, EI is fundamental to employment and career development (Zhaoran, 2021) because it is related to con-

fidence, motivation, self-discipline, self-regulation, and leadership skills (Cores-Bilbao et al., 2019). In terms of technological development, EI was found to help people adapt to innovations (Gorgoretti, 2019; Waldron et al., 2018) and exert a favorable impact on e-learning and emotions management to achieve positive outcomes (Altinay et al., 2021; Nogaj & Ossowski, 2017; Xie & Cui, 2016). At the same time, according to Han and Johnson (2012), there is a need to explore how emotion, EI, and creativity are interrelated, especially in preparing future music teachers in an interactive learning environment.

Psychologists (Bezborodova, 2018) argue that creativity is not a special skill or ability of a few people but rather the result of specific education and training. Creativity can be seen as a quality inherent in exceptional individuals and a valuable life skill through which people can develop their potential to use imagination, self-expression, and make original decisions. Conceptually "creativity" is defined as the ability to create something new by using the power of imagination (Bezborodova, 2018; Bezborodova & Bezborodova, 2018). The first attempt to define creativity was made by Guilford (1950). He claims that creativity covers the most typical capabilities of creative individuals that determine the probability of creative behavior, which manifests itself through invention, synthesis, and planning. This behavior, in turn, seems to be linked with certain personality traits that suggest whether and how this behavior will be expressed. Overall, Guilford (1950) argues that creativity concerns all people, and it is not a rare phenomenon inherent in the gifted only. Frolova et al. (2019) define creativity as the combination of elements that are considered original and different. They emphasize that creativity is one of the most valuable human abilities, but its systematic study is somewhat complicated. Iryhina (2019) argue that creativity is directly related to the individual that defines it. For this reason, some psychologists are likely to define the flexibility of thinking, the originality of ideas, the ability to think differently, and the ability to solve problems as qualitative elements of creativity.

## Theoretical Framework

Creativity is defined as the ability to create new, useful, and desirable products (Ilha Villanova & Pina e Cunha, 2021). Loui (2018) studied

the neurobiology of the musical creative process in the field of musical improvisation to understand the nature of musical creativity, the extent to which it depends on general or subject-specific neural and cognitive processes, and whether musical creativity can be taught. Creativity has three modes: intuitive (embodiment), ideal (mental-conceptual), and observational (appreciative, critical, and evaluative). This trimodal model of creativity offers an interdisciplinary framework for understanding creativity (Henriksen et al., 2021). Implicit theories of creativity relate to creative achievement through a mediating role in motivating creativity (Qurbonovich, 2022). Chinese students, according to researchers (Zhao et al., 2021), view the creative student positively, seeing them as very competent, kind, and popular. Students' perceptions of the creative person are positively related to their attitudes toward growth and creative achievement. The foundation of creativity as a way of thinking is the ability to generate multiple ideas and think in different ways (Lucchiari et al., 2019). Creative thinking is considered one of the most important skills of today's changing and unpredictable era; it should be developed through such subjects as art, music, science, and literature (Akyıldız & Çelik, 2020). The conceptual approaches to the modeling of innovative educational space of music specialists are implemented through creative pedagogical activities. The structural components of creativity and the main stages of its formation for understanding the development of creative abilities of a music teacher in modern educational conditions are considered (Liu, 2021). Education experts note the relevance of fostering creative thinking, which in the context of music teacher education shows the importance of experiential and embodied communication between teachers and students in paving the way for the transformation of personal, professional, and institutional habits (Vass & Deszpot, 2017). However, while teachers are generally positive about the importance of creative pedagogy, there are differences between teachers' beliefs and their practices (Campayo-Muñoz & Cabedo-Mas, 2017).

The creative orientation of the educational process contributes to the orientation of an individual in the system of professional and moral values, the choice of students' professional sense, the development of independence, activity, and initiative of future teachers (Bautista et al., 2018). Creative approach to the organization of the learning process redirects it from the sub-

ject and conceptual aspect to the personality of the future specialist; it is manifested in setting learning goals in the form of intellectual tasks, value-conceptual interpretation of learning activities, non-traditional means and actions aimed at meeting the need for innovation and creativity, creation of original programs, projects and creative works (Koner & Eros, 2019).

The study of art disciplines has its own characteristics that distinguish them from other academic disciplines. Works of art project artistic images that directly address sensual sphere, emotions, and feelings of an individual. Music as an art form summarizes many years of experience of spiritual-emotional relationship to the world; it is a unique means of creative personal development. The creative activity of music teachers is connected, first of all, with the creative nature of both art and the pedagogical process (Havrilova et al., 2019).

### Problem statement

The relevance of this topic is due to the growing academic interest in the issue of EI as one of the top-needed skills of the 21st-century music teacher. From the professional perspective, it is of critical importance for music educators to be able to control their own emotions properly and be creative. Therefore, this research seeks to elaborate a new methodology for developing EI and creativity in future music teachers and assess its effectiveness.

The ultimate goal of this work is to investigate the possibility for EI and creativity development among future music teachers in an interactive learning environment

For this, a number of research objectives are to be accomplished:

- define effective tools for developing EI and creativity in future music teachers;
- prove the possibility of EI and creativity development in an interactive environment by means of Hall's emotional intelligence test and Johnson's creativity test;
- identify opportunities for EI and creativity development in an interactive environment on the example of fourth-year university students majoring in music teaching;
- determine ways to develop EI and creativi-

ty in future music teachers in an interactive learning environment.

## METHODS AND MATERIALS

### Research Design

As far as this study aimed to investigate the ways to promote EI and creativity in an interactive learning environment, a special training program developing these skills was designed. For the sake of fairness, it was proposed to be followed to only one group of students out of two formed (experimental – EG). The other group of students (control – CG) underwent traditional training. Then data obtained in both of them were compared.

The first group of techniques proposed within the designed program was concentrated upon the development of emotional self-awareness. They were supposed to help understand one's own motivation and behavior. As concerns the second group, it was directed at improving emotional self-control and the ability to think. These techniques strived to foster an understanding of the non-effectiveness of taking one side or the other during conflicts. Likewise, they intended to encourage people to analyze the situation and emotions at hand.

The experimental study lasted for four months, from September to December 2021. While EI assessment was done via Hall's emotional intelligence test (Appendix 1), the dimension of creative abilities was investigated by means of Johnson's creativity test adapted by Tunik (Appendix 2).

Testing was conducted in each group twice – before and after the experiment. For the creativity assessment to be objective, a favorable environment for study participants was created. This allowed promoting the manifestation of latent abilities in enrolled students. Discussion of the subject matter of the techniques used was avoided. Instead, respondents were proposed to express themselves in an original way and in unfamiliar settings.

1. The order in which the material was presented was as follows:
2. Johnson's creativity test – completion time was limited to 20 minutes;
3. Marlowe-Crowne social desirability scale – completion time was limited to 5 minutes;

Hall's EI test – completion time was not limited as this test consists of 30 statements and contains five scales: emotional awareness, managing emotions (emotional quickness and flexibility), self-motivation (managing one's own behavior by managing emotions), empathy, and managing emotions of other people (ability to influence the emotional state of others).

Overall, the proposed program had a modular structure. More precisely, it comprised four modules and was practice-oriented. Each educational module corresponded to the logical process of creation of new educational products (EPs) and contributed to the increase of the professional competencies of EG participants in the field of musical art.

**Module 1. Introduction to the program: from the concept to the project idea.** This module consisted of lectures (12 hours) and practical sessions (12 hours). Its aim was to deliver knowledge about EI, creativity, and the practice of their development. Program participants were planned to learn the specifics of EI, train the ability to identify, use, understand, and manage emotions in themselves and others, and receive tools for creative thinking development.

**Module 2. Educational products' development.** This module consisted of lectures (4 hours), practical sessions (10 hours), and independent work (32 hours). It contributed to deepening the knowledge of EI, creativity, and ways of their development. Its aim was to create drafts for future EPs and conduct their internal expertise.

**Module 3. Educational products' testing.** This module consisted of practical classes (34 hours). It assumed active involvement of program participants in testing and analysis of the collected testing outcomes.

### Expected Results

After experimental training, research participants were expected to:

- acquire a general idea of EI, creativity, and the paths of their development;
- get acquainted with the leading international and domestic practices that promote EI improvement;

- be able to solve a wide range of their professional problems (related to EI);
- create their own EP for its subsequent dissemination.

*Program Content Example*

**Aim:** support of designing, development, and implementation of EPs for EI and creativity enhancement in music students in an interactive environment (Table 1).

**Field of training:** music teaching.

**Training duration:** 104 hours.

**Attendance mode:** intramural.

**Training period:** September – December 2021.

**Training location:** Xxx University.

**Table 1.** Program Content

No	Module name	Training duration per module (hours)	In-class sessions		IW <sup>1</sup>	Form of control
			L <sup>2</sup>	P <sup>3</sup>		
1.	Introduction to the program: from the concept to project idea	24	12	12	–	Presentation of future EPs' project ideas
2.	Educational products' development	46	4	10	32	Presentation of the developed EPs
3.	Educational products' testing	34		34	–	Use of ready-made EPs
<b>Training duration in total (hours)</b>		104	16	56	32	–
<b>Final assessment</b>				Holding surveys		

Appendix 4 provides a more detailed explanation of the purpose, topics, and forms of control for each module.

1. IW – independent work.
2. L – lectures.
3. P – practical sessions.

### Research Participants

The study sample included a total of 60 fourth-year students of the Xxx University. All of them were born from 2000 to 2001. As for gender distribution, 20 people were males and 40 – females (Table 2).

**Table 2.** Research Participants

	EG	CG
Females (66%)	18	22
Males (34%)	12	8

The only criterion for selecting students was sufficient experience for further professional activities. Therefore, it was decided to enroll only individuals of the last study year.

The possibility of sampling error was 5%. It was calculated by the formula below:

where  $Sampling\ error = z \times \frac{\sigma}{\sqrt{n}}$ , the population value.  $z$  – z-score for 95% confidence is 1.70 (with an assumed number of respondents equaling 50).

### Data analysis

Mathematical processing of the obtained data was done by means of Student’s t-test. Also,

this study benefited from IBM SPSS Statistics software (Ver. 21). Since the data at hand were not normally distributed, Mann-Whitney U-test for independent samples was carried out.

### Research limitations

The key limitation of this study is that gender differences were not taken into account. Other research works evidence that the cognitive and behavioral systems of men and women are functionally different (those of the latter are more often oriented toward empathy). Thus, conflict in the relationship between EI and creativity in men and women may be due to gender differences. Another issue that might have influenced the obtained results is that academic achievements were not taken into account.

## RESULTS

Research results obtained for EI are presented in Table 3.

As can be seen from the above, the emotional awareness indicator in no way changed in the CG, while in EG, it rose by 0.6. The ability to manage emotions shared the same tendency – it remained unchanged in the CG and rose by 0.9 in EG. The parameter of self-motivation showed rather unexpected results. While being stable in the case of CG, it 100% dropped in the EG. The indicator of empathy did not change in both groups. In turn, the ability to manage the emotions of others doubled in the case of EG and stayed at its previous level in CG. These data are the means of surveying results (Table 4).

**Table 4.** Creativity-related indicators

**Table 3.** EI-related pre- and post-testing outcomes

	CG		EG	
	Pre-test (mean)	Post-test (mean)	Pre-test (mean)	Post-test (mean)
1) Emotional awareness (A)	0.3	0.3	0.4	1
2) Managing emotions (B)	0.2	0.2	0.1	1
3) Self-motivation (S)	1	1	1	0
4) Empathy (Q)	1	1	1	1
5) Managing emotions of others (R)	0.4	0.4	0.5	1

Creativity indicators	EG			CG		
	Arithmetic mean (M)	Standard error (m)	Standard deviation, o	Arithmetic mean (M)	Standard error (m)	Standard deviation, o
Expert assessment of creativity (Johnson's creativity test)	26.32	0.57	3.33	22.60	0.92	4.62
Self-assessment of creativity (Johnson's creativity test)	28.76	0.74	4.26	28.92	0.97	4.83

Mean expert assessment (peer assessment) of creative manifestations according to Johnson's creativity test for EG students was  $26.32 \pm 0.57$  points, while in CG, this value was  $22.60 \pm 0.92$  points. Given that the significance level was  $p < 0.05$  (according to Mann-Whitney U-test), the differences in this indicator were considered statistically reliable. According to the survey key, both groups were characterized by an average level of manifestation of creative abilities. As for creativity self-assessment indicators, they were equally high in EG and CG ( $28.76 \pm 0.74$  and  $28.92 \pm 0.97$  points, respectively) and reliably ( $p < 0.05$ ) correlated with expert assessments of creative manifestations (correlation coefficients amounted to 0.37 and 0.40, respectively).

## DISCUSSION

This paper made an attempt to demonstrate that EI and creativity can and should be developed in an interactive environment. Using students majoring in music teaching as an example, this study assumed that under conditions promoting the development of EI in students, it is possible to achieve better learning results. Also, this work holds the view that EI is a valuable skill that affects cognitive achievement, although some scholars argue about this. The importance of EI lies in adaptability. Emotional control and management in learning help create a balanced personality, which is critically important in the 21st century. As far as effective learning requires emotion management (Martin-SanJose et al., 2017), well-developed EI is one of the solutions for succeeding in these terms (Greener, 2018). No less important EI is for aesthetic perception based on visual stimuli (especially those related to negative emotional experience) and the ability to perceive the right emotions from multimedia aesthetics that may conflict with their cultural background (Aminu-

ddin et al., 2009). The present study confirmed and complemented previous research on this issue.

The scientific contribution of this paper is as follows. To enhance the ability to adapt to stressful music teaching and performing situations, a number of music therapy methods that research participants arrived at during the EI and creativity development program are suggested:

- playing any melody before performing for the sake of training;
- method of positive attitudes;
- relaxation techniques (listening to music, reading a book, drawing, watching a favorite movie, yoga, etc.)
- method of purposeful situation imagination;
- singing, articulation exercises.

These techniques can be used both by teachers and students.

Waiting too long before an exam may often provoke an extremely strong and prolonged nervous excitement leading to excessive nerve cell fatigue and apathy. In such cases, the method of positive attitudes is very effective to be benefited from as it allows future music teachers to increase self-confidence and activate the mechanisms of formation of emotional self-regulation. Equally helpful may be the turn to positive self-criticism. For example, assuring oneself that "Everything will be fine, I sing well"

or “I am too worried about my performance” (Iryhina, 2019).

University faculty should also take advantage of the powerful influence of words in this respect: calm the overexcited and encourage the apathetic student before the performance. The method of purposeful situation imagination is expedient to use in cases of stage fright. Imagination is a powerful tool for changing and correcting one’s condition. Every student has in their memory situations in which they felt peace, relaxation, inner silence. In some cases, this may be the beach and a pleasant feeling of relaxation on the warm sand after a swim; in others – the mountains, clean, fresh air, blue sky, snowy peaks. There can be many such situations, but each student should choose the most suitable one for creating the necessary psycho-emotional state: power mobilization or relaxation (Stukalenko, 2018).

The carried-out experiment showed that its participants were very positively disposed toward the training offered as maximum efforts were made to create an interactive environment for student-teacher interaction. Individuals with well-developed EI turned out to be better aware of their inner state than others. The designed training program contributed to students’ emotional flexibility, taught them how to manage their behavior by managing their emotions, helped them become more aware of the feelings of other people, and raised their empathy and readiness to provide support. Besides, students gained useful knowledge on how to understand the state of a person through facial expressions, gestures, shades of speech, and posture and acquired the skill of influencing the emotional state of their fellows (Alsharari & Alshurideh, 2021; Kumar et al., 2019; MacCann et al., 2020; Rodrigues et al., 2019).

This study made a significant contribution to the scientific knowledge on the matter as it proved that EI enhancement via training is indeed possible. Its inferences are supported by other works in the field, e.g., Hodzic et al. (2018), Mattingly and Kraiger (2019), Rocha and Santos (2014). However, we are not aware of experimental studies examining the effects of training different EI branches. Such works may unveil which EI aspects are most significant for promoting a particular result type.

## CONCLUSIONS

This work aimed to investigate ways to advance EI and creativity of future music teachers in an interactive learning environment. For this, it proposed a specially designed training program focused on EI and creativity development and tested it on the example of 30 EG students majoring in music teaching. As a result, the conducted experiment revealed that future music educators with a well-developed EI are characterized by resistance to negative stresses and are less prone to pessimism and strong negative emotions. Therefore, incorporating EI training theory into music education programs would be a beneficial decision for this field.

The developed course on EI and creativity improvement had a positive impact on intrapersonal and interpersonal aspects of EI. In view of this, it may well be used in pedagogical activities as an effective means of forming EI among university students, particularly those engaged in music training.

The scientific and practical value of this research resides in the outlined ways to develop EI and creativity. They are as follows:

1. activation of students’ motivation for emotional interaction in the process of professional training;
2. creation of an appropriate interactive educational environment;
3. emphasis on active practice- and personality-oriented creative process as well as developing EI in future music teachers through the introduction of innovative training approaches;
4. students’ involvement in practical activity through interaction, game-based teaching, dramatization, etc.;
5. instruction on how to self-talk (conduct an internal dialogue) and self-affirm oneself with positive consequences;
6. increase of the effectiveness of musical and pedagogical communication and professional training of future music teachers;
7. greater emphasis on research activities.

The presented theoretical and practical achievements on the problem of EI and creativity development represent a scientific-theoretical basis for further elaboration of a structural and

functional model for the formation of both personal and professional qualities of a future music teacher.

With the help of Hall's and Johnson's tests, this study proved the possibility of developing EI and creativity in an interactive environment. The most effective means for this was musical therapy – a type of influence on emotions and the way to harmonize personality development through the improvement of self-expression and self-knowledge. It was noted to actualize students' feelings, improve their emotional state, and reduce fears, behavioral deviations, communicative difficulties.

In sum, the collected findings may be found useful by:

- faculty of universities, colleges, and other educational institutions centered on preparing professionals in music and pedagogy;
- music teachers in inclusive schools and classes;
- music teachers working with gifted children;
- people of creative professions;
- training centers for EI development.

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