

PROFESSIONAL EDUCATION

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**The Influence of Improvisation and Collective Music-Making on the
Development of Creative Thinking and Emotional Sensitivity
in Music School Students**

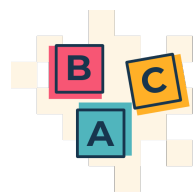
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Abstract. Aim. *This study examines the influence of improvisation and collective music-making on creative thinking and emotional sensitivity among students attending a specialized music school. The objective was to determine whether structured yet flexible musical activities, particularly ensemble-based improvisation, enhance creativity and emotional responsiveness in young musicians. Grounded in sociocultural theories of learning and creativity, the research conceptualizes musical improvisation as a communicative and emotionally nuanced process embedded in collaborative experiences, rather than as a purely technical skill.*

Methodology. *A mixed-methods approach was employed, integrating quantitative data with qualitative insights to explore how improvisational ensemble work affects students' creative capacity and emotional awareness. The 12-week intervention involved 40 students aged 10 to 13 from an urban public music school, divided equally into experimental and control groups, matched by age, instrument, and previous piano training (ranging from two to four years). The experimental group*

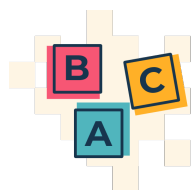


participated in weekly improvisation-based music lessons emphasizing ensemble collaboration and creative exploration. The control group continued with traditional instruction focused on repertoire development and technical proficiency.

Creative thinking was assessed using an adapted version of the Torrance Tests of Creative Thinking (TTCT), modified for musical contexts and evaluated across dimensions such as originality, fluency, and elaboration. Emotional sensitivity was measured through a custom-designed questionnaire incorporating Likert-scale and open-ended items, complemented by structured classroom observations and weekly teacher reflections. This triangulated data collection enabled comprehensive monitoring of both behavioral and self-reported changes in creativity and emotional expression.

Results. *A comparison of pre- and post-test data revealed a significant improvement in the indices of originality, fluency, and flexibility in students' creative thinking. Emotional sensitivity also increased, with participants demonstrating more nuanced emotional expression and greater emotional awareness in their performances. These findings were supported by observational data and teacher notes, which indicated that students became more confident, collaborated more effectively, and showed a greater willingness to take creative risks.*

Conclusions. *The study demonstrates that collective improvisation offers young musicians a supportive environment that fosters creative exploration, emotional connection, and both social and emotional growth. These findings underscore the value of integrating improvisation and ensemble-based learning into formal music education, not only for the development of musical competencies but also for the broader artistic and personal development of students. However, the study's limitations include a small sample size and a relatively short duration. Future research should explore longer-term interventions and involve a more diverse student population to better understand the enduring effects of such pedagogical approaches and their*



broader applicability in music education. Prospective studies should address these limitations by increasing sample sizes, incorporating varied educational contexts, conducting longitudinal research to assess lasting outcomes, and analyzing the specific effects of different improvisational strategies on musical and emotional development.

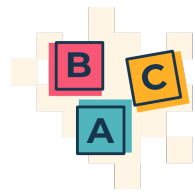
Keywords: *improvisation, collective music-making, creative thinking, emotional sensitivity, music education, student development, ensemble learning.*

Вплив імпровізації та колективного музикування на розвиток креативного мислення та емоційної чутливості учнів музичної школи

Стожок Алла Вікторівна,

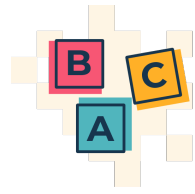
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Анотація. Мета. *Дослідження присвячене аналізу впливу імпровізації та колективного музикування на розвиток креативного мислення й емоційної чутливості здобувачів освіти, які навчаються у спеціалізованій музичній школі. Метою є з'ясування, чи можуть структуровані, але водночас гнучкі музичні завдання, зосереджені на імпровізаційному музикуванні в ансамблевому контексті, сприяти формуванню творчих здібностей і підвищенню емоційної відгукливості в юних музикантів. Теоретичне підґрунтя дослідження становлять соціокультурні підходи до навчання й творчості, згідно з якими музична імпровізація розглядається не лише як технічна навичка, а як комунікативний та емоційно насичений процес, що здійснюється у співпраці.*



Методологія. У дослідженні застосовано змішаний дослідницький дизайн, який поєднує кількісні та якісні методи для вивчення впливу імпровізації й колективного музикування на розвиток креативного мислення та емоційної чутливості здобувачів музичної освіти. Інтервенційна програма тривала 12 тижнів і охоплювала 40 учнів віком від 10 до 13 років, які навчаються в міській державній музичній школі. Учасників рівномірно розподілено на експериментальну та контрольну групи із урахуванням віку, музичного інструмента та тривалості навчання гри на фортепіано (від двох до чотирьох років). Учні експериментальної групи щотижня брали участь у заняттях з імпровізаційного музикування, зосереджених на роботі в ансамблі та розвитку творчого пошуку. Натомість учасники контрольної групи продовжували навчання за традиційною програмою, акцентованою на виконанні репертуарних творів і вдосконаленні технічних навичок. Рівень креативного мислення оцінювали за адаптованою версією тестів креативного мислення Торренса (TTCT), модифікованих для виконання музичних завдань і спрямованих на виявлення таких показників, як оригінальність, вільність і розробка ідей. Емоційну чутливість визначали за допомогою спеціально розробленого опитувальника, який містив шкалу Лайкерта та відкриті запитання, а також через структуровані спостереження під час занять і щотижневі педагогічні рефлексії. Застосований підхід дозволив дослідникам відстежити як поведінкові зміни, так і самооцінки учнів щодо рівня креативності й емоційного самовираження.

Результати. Порівняння до- та післятестових результатів засвідчило суттєве підвищення показників креативного мислення здобувачів освіти, зокрема за такими параметрами, як вільність, гнучкість та оригінальність. Крім того, зафіксовано зростання рівня емоційної чутливості: учні виявили глибше емоційне самовираження та підвищене усвідомлення емоцій у процесі



музичного виконання. Спостереження та педагогічні рефлексії підтвердили ці результати, акцентуючи на зростанні впевненості, рівня міжособистісної взаємодії та готовності до творчого ризику.

Висновки. Отримані дані підтверджують, що колективна імпровізація сприяє формуванню підтримувального середовища для творчого пошуку, емоційної залученості та соціально-емоційного розвитку юних музикантів. Виявлені результати підкреслюють доцільність упровадження імпровізаційних і ансамблевих практик у формальну музичну освіту з метою забезпечення всебічного мистецького становлення здобувачів освіти. Серед обмежень дослідження – невелика вибірка та обмежений часовий період інтервенції. Перспективні напрями подальших досліджень передбачають проведення довготривалих спостережень і залучення ширших вікових груп для глибшого розуміння сталих ефектів і педагогічного потенціалу імпровізаційної діяльності.

Ключові слова: імпровізація, колективне музикування, креативне мислення, емоційна чутливість, музична освіта, розвиток учнів, ансамблеве навчання.

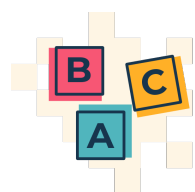
Introduction. Today's music educators face a task that extends beyond teaching technical proficiency: they are also responsible for supporting the emotional and psychological development of their students. Traditionally, music schools concentrated on performance accuracy and repertoire acquisition. However, there is a growing recognition that musicianship involves more than technical execution; it encompasses creativity and the capacity to establish a deep emotional connection with the music. Musicians must be able to generate original musical ideas and authentically express the emotions embedded in the music. For this reason, improvisation and ensemble

performance have emerged as essential components of contemporary pedagogical practices, aligning with these broader educational objectives [13].

Due to its inherently spontaneous and unpredictable nature, improvisation offers a dynamic environment for students to explore musical ideas in real time. Unlike strictly notated performances, improvisation provides the musician with both the freedom for direct personal expression and a deeper sense of ownership over the musical material. When children engage in this creative process collectively, such as in choral groups or ensemble settings, it facilitates new modes of communication, collaborative creation, and empathetic connection with peers. The group-based nature of collective improvisation transforms music-making into a social process that mirrors the complexity of human interaction. It compels students to listen attentively, negotiate musically relevant perspectives, and respond to nuanced contributions from others, thereby broadening their interpersonal and emotional capacities.

The educational value of these practices cannot be overstated, particularly because they are introduced during the formative years of musical education, when students are actively shaping their identities both as artists and as individuals. These experiences go beyond the acquisition of performance skills; completing a music school program establishes a foundation for lifelong creative confidence and emotional intelligence. Within the structured yet expansive environment of the music school, such practices serve as powerful instruments for self-inquiry, the cultivation of empathy, and the pursuit of shared emotional understanding. This article examines the transformative potential of improvisation and collective music-making as enriching elements in music education, supporting the development of creative thinking and enhancing emotional sensitivity among students in specialized music schools.

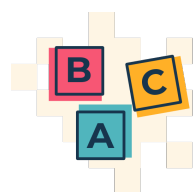
Theoretical Background. Improvisation and collective music-making are key areas of interest in the field of music education, particularly in relation to their influence on students' creative and emotional development. According to scholars such as Xu



Bingjie [3], improvisation within educational settings supports the development of higher-order and divergent thinking, making it a vital component in nurturing creativity among young musicians.

L. Cuervo and E. Campayo argue that improvisation engages a “thinking-in-action” mode, which fosters originality and enhances cognitive flexibility in music students. They also assert that group-based improvisational music-making contributes to the development of empathy and emotional intelligence in children and adolescents [7]. Their research demonstrates that students who engage in collective improvisation become better equipped to recognize and regulate their emotions during performance, while also synchronizing with and responding to the emotional expressions of their peers in an ensemble context. Similarly, R. MacDonald and D. Miell [12] conceptualize collective improvisation as a “social space” where co-constructed musical meanings emerge, and learners form interpersonal connections essential for the development of social identity. This real-time interaction facilitates active listening, emotional adaptation, and musically meaningful collaboration. Such engagement enriches both cognitive and emotional domains and represents an essential component of a more integrated approach to music education. Overall, the pedagogical significance of ensemble improvisation is emphasized by P. Burnard and T. Dragovic [8], who underscore its role in community building, self-expression, and mutual understanding. They highlight the value of shared musical experiences as a means of strengthening social bonds and providing a “non-verbal language” through which emotions can be expressed. This is especially important in educational environments, where young people are in the process of developing emotional literacy.

T. Koutsoupidou, D. J. Hargreaves demonstrate that engaging children in musical improvisation enhances their creative thinking, especially when intrinsic motivation is present. Their study shows that such activities increase learners’ engagement, self-confidence, and readiness to take creative risks, thereby fostering



imagination and encouraging stronger emotional involvement in the music learning process [5].

M. Biasutti explores how improvisational pedagogy can be employed to foster creativity in music school settings. He argues that students who are given the freedom to explore their own musical ideas are more likely to develop a strong musical identity, along with enhanced problem-solving abilities and emotional expressiveness. His pedagogical framework encourages instructors to incorporate open-ended, student-driven musical experiences to promote both cognitive and affective growth [10].

T.-C. Rabinowitch, I. Cross, and P. Burnard demonstrated that long-term participation in group music-making positively influences children's empathy. Their research shows that ensemble performance allows young children to experience and express a broader range of emotions, thereby supporting emotional growth and fostering social integration. Musical interactions help children identify and respond to their peers' emotional cues, strengthening their emotional competence[2].

This article builds on the insights of C. Zhang [1], who identified the positive influence of ensemble improvisation on the development of students' creativity. According to C. Zhang, group improvisation enhances creative thinking, encourages risk-taking, and supports the generation of original ideas. As she states, being in improvisational settings that are non-hierarchical and autonomous enables children to take risks, make aesthetic decisions, and construct their own musical narratives. G. D. Smith underscores the value of spontaneity and collaborative creation in improvisational music education, highlighting their potential to foster student agency, emotional engagement, and long-term artistic development [14].

U. MacGlone and G. G. Johansen investigated how instructors in European higher music education understand and teach free improvisation. Their findings suggest that effective improvisation pedagogy involves cultivating an open, supportive, and nurturing learning environment where students are encouraged to take creative

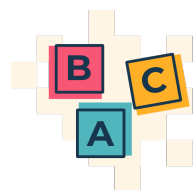
risks. This approach highlights the teacher's role not only as a facilitator of technical skill development but also as a mentor guiding the emotional and psychological dimensions of artistic growth [6].

L. Navarro and H. Chacón-López demonstrated that improvisation significantly enhances children's creativity by developing flexibility, originality, and emotional depth[11]. Their findings provide strong evidence in support of integrating improvisation into standard music instruction to promote balanced musical skill development. The study shows that when creating music spontaneously, young children engage more deeply with their emotions and are better able to express them through music.

L. Green and S. Hallam [9] reinforce this perspective by showing that classroom improvisation helps students feel more emotionally connected and creatively uninhibited. They argue that improvisation provides a safe space for risk-taking, which is essential for artistic progress and emotional development.

Finally, L. Cuervo and E. Campayo [4] emphasize the interconnectedness of collaboration, improvisation, and emotional intelligence in music education. Their research provides compelling evidence that collective improvisation fosters emotional resilience, communicative competence, and a sense of community. As students participate in co-creative activities, they develop the ability to empathize, compromise, and lead. These are skills that are essential not only in musical contexts but also in broader life experiences.

The **aim of the study** is to explore how improvisation and making music together in small groups can help young music school students become more creative and emotionally aware. The goal was to determine whether providing students with opportunities to experiment with sound in a flexible, collaborative setting (particularly through ensemble improvisation) would support their capacity for creative thinking and emotional expression in music. The research is based on the premise that



improvisation is not merely a technical skill but a profoundly social and expressive process shaped by interaction and shared experience.

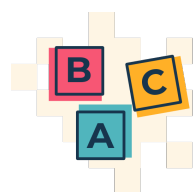
The **objectives of this study** are:

1. To explore the effects of improvisation-based ensemble activities on the development of creative thinking in music school students.
2. To evaluate how collective music-making influences students' emotional sensitivity and self-expression.
3. To compare the outcomes of improvisation-focused instruction with traditional music education methods.
4. To analyze students' behavioral and emotional changes during improvisational sessions through observation and teacher reflections.
5. To contribute to pedagogical strategies that integrate improvisation as a core element of early music education.

Methodology

Research Design

This investigation employed a mixed-method research design incorporating both qualitative and quantitative data collection techniques to examine the effects of improvisation and collective music-making on the development of creative thinking and emotional sensitivity in music school students. The intervention consisted of group-based music lessons focused on improvisation over a period of 12 weeks. The objective was to assess changes in participants' creative behavior and emotional responsiveness before and after the intervention, using observational methods, pre- and post-intervention questionnaires, and teachers' feedback forms. The experimental group received instruction centered on improvisation, while the control group followed traditional repertoire-based instruction.



Participants

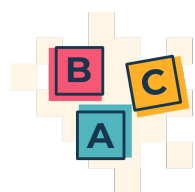
The study sample consisted of 40 participants, aged 10 to 13, from a public music school located in an urban area. The sample was divided equally between an experimental group ($n = 20$) and a control group ($n = 20$). All participants had received formal piano training for a minimum of 2 years and up to 4 years. The control group was matched with the experimental group based on age, instrument, and prior musical experience. Parental consent and student assent were obtained. Participation in the study did not influence academic grading.

Instruments and Materials

Creative thinking was assessed using an adapted version of the Torrance Tests of Creative Thinking (TTCT) applied to a musical context. Performance was evaluated based on originality, fluency, and elaboration in improvisation tasks. Emotional awareness was measured using a custom-designed questionnaire composed of Likert-type and open-ended items, addressing self-perception, emotional insight, and expression through music. Structured non-participant observations were conducted to monitor behavioral indicators such as facial expressions and peer interaction during lessons. Additionally, teachers wrote weekly reflections documenting students' creative engagement and emotional expression.

Procedure

The experimental group participated in a weekly 45-minute ensemble session that included guided improvisation tasks, group improvisation on thematic material, and reflective discussions. Students co-created short musical compositions and explored rhythm, melody, and dynamics. The control group received traditional instruction focused on technical skills, sight-reading, and performance of a set repertoire. Pretests were administered in the first week, and posttests were conducted in the final week. Observational data were collected weekly and analyzed for the frequency and patterns of focal behaviors.



Data Analysis

Descriptive analysis was conducted using a survey-based scoring method, and a t-test was applied to determine differences within the experimental group. Qualitative data obtained from observations and open-ended responses were analyzed thematically to identify recurring patterns related to emotional engagement and creative output. Results from the control group served as a baseline for isolating the effects of the improvisation intervention.

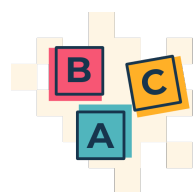
Results and Discussion

Questionnaire Results

Results from the pre- and post-intervention questionnaire indicated that the improvisation-based group music lessons produced statistically significant differences in both creative thinking and emotional sensitivity among the students who participated in these sessions. The questionnaire administered to both the experimental and control groups consisted of a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) and included 20 items divided into two sections: creative thinking and emotional awareness within a musical context.

Creative thinking was measured through items based on statements such as *I can make up my own musical ideas* and *I like to make up tunes without notes*. Emotional sensitivity was assessed using items such as *I pay attention to how music makes others feel* and *When we make music together, I feel closer to other people*.

The average self-rated score for creative thinking in the experimental group increased from 2.9 before the intervention to 4.1 afterward. Affective sensitivity also rose significantly, from 3.0 to 4.3. In contrast, the control group, which continued with what the authors referred to as “business as usual” (consisting of standard instrumental techniques and precomposed repertoire), showed only minimal changes. Creative thinking in this group increased from 2.8 to 3.0, while emotional sensitivity rose from 3.1 to 3.2.



The average summary scores before (Pre) and after (Post) the intervention are presented in Table 1.

Table 1

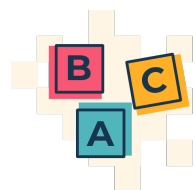
Pre- and Post-Intervention Scores on Creative Thinking and Emotional Sensitivity*

Group	Measure	Pre-Test Mean	Post-Test Mean	Change
Experimental Group	Creative Thinking	2.9	4.1	+1.2
	Emotional Sensitivity	3.0	4.3	+1.3
Control Group	Creative Thinking	2.8	3.0	+0.2
	Emotional Sensitivity	3.1	3.2	0.1

Note*

1. Scores are based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).
2. Each dimension was measured using 10 items.
3. The experimental group participated in 12 weeks of group improvisation-based lessons.
4. The control group followed a traditional curriculum without improvisation tasks.

These findings were supported by open-ended responses. Students in the experimental group described the improvisational experience as “free,” “like telling a story,” and “fun because I can play what I feel.” Several students noted that they began listening more attentively to the musical input of others and felt more confident in contributing their own ideas while playing or singing in an ensemble. Others expressed a newfound enjoyment in making music collaboratively, rather than focusing solely on playing the correct notes. This reflected a shift in their musical self-concept from passive reproduction to active creation.



Observational Findings

There is substantial empirical evidence that students in the experimental group experienced concrete behavioral and emotional changes during the 12-week intervention period. In the early sessions, a large proportion of students demonstrated timidity in producing musical ideas and showed indecision when working in groups. However, by approximately the sixth week, a shift began to emerge. The students started generating their own melodic or rhythmic ideas, listening to how others recombined those ideas in real time, and engaging in expressive musical dialogues.

These musical interactions were accompanied by visible emotional expression. Students smiled during performances, shared physical gestures, and began to exhibit musical elements associated with playfulness, excitement, and, at times, sadness. Observable social behaviors such as eye contact, laughter, synchronized nodding, and phrase imitation occurred more frequently. These affective indicators appear to reflect growing social-emotional engagement, a key outcome of collaborative music-making. The evidence suggests that as students learned to create music, they also developed greater sensitivity to their peers and formed emotional connections through the shared creative process.

These findings are consistent with the results reported by D. T. Smith [15], who found that making music together can significantly impact children's social and emotional development by enhancing empathy, communication, and emotional awareness. In contrast, students in the control group exhibited relatively few of these behaviors.

Classes were predominantly teacher-centered rather than student-centered, with a strong focus on performing assigned repertoire and technical exercises. Although students were able to play the notes accurately, in tune, and in time, there was little to no interactive music-making among them and no shared emotional depth in their

performances. Peer interaction remained minimal, and students tended to seek affirmation from the teacher rather than from their peers.

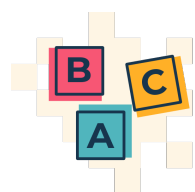
Teacher Reflections

Weekly teacher reflection forms reinforced the positive effects of the improvisation sessions. Educators working with the experimental group observed that, over time, students became noticeably more open, curious, and emotionally expressive. “Before, I used to have to tell them, ‘No, wait, listen to each other,’” one teacher remarked. “Now, their playing naturally aligns with what others are doing.” Another teacher added, “Even the quieter students began to lead musical conversations and to experiment without worrying about mistakes.” This transformation indicated greater musical confidence and a stronger sense of mutual support within the ensemble.

In contrast, teachers working with the control group did not report comparable developments. Their reflections primarily concerned technical accuracy, proper use of equipment, and preparing students for performance. They did not observe meaningful changes in creativity or emotional expression. This contrast highlights an important principle: creativity and emotional depth do not emerge spontaneously; they must be purposefully cultivated.

These results are consistent with previous research on the role of improvisation in promoting both creative and emotional growth. L. Cuervo and E. Campayo argue that group improvisation significantly enhances emotional understanding and social connection. Their empirical findings, based on behavioral observations and self-report data, support the value of collective music-making in fostering empathy and emotional sensitivity among participants [7].

Likewise, L. Navarro Ramón and H. Chacón-López emphasize that environments encouraging musical improvisation promote greater adaptability, emotional expressiveness, and creative confidence in children. They argue that such



pedagogical settings empower students to explore and refine their creative thinking skills, leading to more comprehensive personal and artistic growth [11].

Moreover, improvements in socially responsive behaviors, including turn-taking, joint attention, and musical coordination, correspond with the conceptual framework presented by R. MacDonald and D. Miell. They characterize ensemble improvisation as an inherently social process that facilitates the co-construction of musical meaning, emotional involvement, and mutual understanding [12].

Collectively, these findings highlight that improvisation and collaborative music-making are not peripheral aspects of music education but integral components. For students at the early stages of their musical journeys, these practices not only enhance technical proficiency but also foster emotional intelligence, empathy, and a profound connection to music as a human and socially grounded art form.

As a whole, the results support the argument that improvisation and collective music-making are not supplementary but essential elements of music education curricula, especially for students in the early phases of their training. These pedagogical approaches provide valuable enrichment in terms of technical skill while also offering environments that promote the development of emotional intelligence, empathy, creative confidence, and a meaningful connection to music as both a human and social art.

Conclusions

This study aimed to investigate the impact of improvisation and collective music-making on the creative and emotional development of music school students. The experimental group demonstrated significant improvement in generating original musical ideas, experimenting confidently with sound, and engaging empathetically with peers during music sessions. These findings indicate that improvisation is not solely about enhancing performance skills; it also plays a crucial role in developing

essential social and emotional competencies such as empathy, communication, and collaboration.

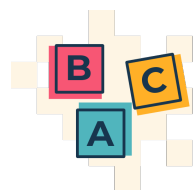
The outcomes of the experiment reinforce existing evidence that collective improvisation fosters flexibility, self-esteem, and emotional intelligence. Based on these results, we advocate for the prioritization of improvisation-based activities within music education and the integration of group music-making as a core curricular component. This approach is essential not only for technical development but also for supporting students' holistic musical and personal growth.

Limitations

Despite the promising results, this study has several limitations. First, the sample consisted of 40 participants, all of whom were enrolled at a single urban music school. Therefore, it is uncertain whether similar outcomes would be observed in broader or more diverse populations. Second, the monitoring period was limited to 12 weeks, raising questions about whether this duration is sufficient to assess the long-term effects of improvisation on creativity and emotional development. Third, some of the assessment methods, such as teacher judgments and student self-evaluations, may be subject to bias. This limitation could be addressed by supplementing subjective evaluations with more objective measures. Another important limitation is that the control group did not participate in any creative activities during lessons, which may have amplified the observed differences. Finally, the study did not account for individual differences in personality traits or prior experience, both of which may influence student engagement and learning outcomes.

Recommendations

Based on the findings of this study, music educators are encouraged to integrate improvisation into regular instruction as a means of fostering creativity and emotional sensitivity in students. Small ensemble formats, such as duos or trios, can promote active listening, musical responsiveness, and the development of collaboration and



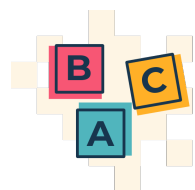
trust. Creating a supportive, non-judgmental learning environment is essential for encouraging students to take creative risks, express emotions, and explore their musical identities. Educators should also include time for reflection and discussion, inviting students to articulate their experiences and connect musical decisions with emotional content. While technical skill development remains important, a balanced instructional approach that incorporates student-led, imaginative activities can result in deeper engagement, increased confidence, and more meaningful musical growth.

Perspectives for Further Research

Future research should address the limitations outlined above. Expanding the sample size and including participants from a wider range of educational contexts could enhance the external validity of findings. Longitudinal studies are particularly valuable for understanding the sustained impact of improvisation on creativity and emotional sensitivity. Additionally, more detailed investigations into specific improvisational techniques would allow researchers to evaluate their differential effects on various dimensions of musical and emotional development.

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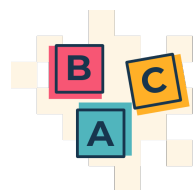
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