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The impact of vocal education on the development of musical and social skills in children aged 7–10 at Children's Music School No. 1 in Almaty, Kazakhstan

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ABSTRACT

The aim of this study is to examine how vocal instruction influences the musical, social, and academic development of children aged 7–10 at Children's Music School No. 1 in Almaty, Kazakhstan. The study evaluates the effectiveness of music education, with particular attention to group singing, in supporting children's cognitive, social, and musical growth. A comparison was conducted between a Vocal Education Group and a Control Group. Data were collected before and after the vocal instruction through observations, teacher interviews, and questionnaires. The results show that children in the Vocal Education Group improved their social skills by 38%, musical skills by 33%, and academic performance by 18%, while the Control Group showed little progress in these areas. These findings demonstrate that group singing promotes both social cooperation and musical development. The study concludes that music education plays an important role in children's overall development, particularly in group settings. Future research is recommended to investigate the long-term effects of vocal training and to compare its impact with other forms of music education.

1. Introduction

Children's musical, social, and emotional intelligence can grow significantly through vocal education in elementary schools. Research shows that vocal training and music education support both cognitive and social development, providing a foundation for future academic success and emotional well-being (Hallam, 2010). Singing allows children to engage directly with music, helping to improve their listening skills, memory, and emotional expression—abilities that are essential for overall development (Hanna-Pladdy and Mackay, 2011).

Starting at a young age, schools such as Children's Music School No. 1 in Almaty have provided music education, including vocal training, to youngsters living in Kazakhstan. Along with developing technical musical skills, this instruction seeks to cultivate cultural identity and creative expression (Bamford, 2006). Vocal training is a natural component of the process, as music schools in Kazakhstan have long recognized the value of music in promoting cognitive development and creativity.

Studies by Bresler (2007) emphasized the significance of arts education in early life, particularly the role of vocal music in promoting cooperation, self-expression, and creativity. Early vocal education helps children develop a lifetime love of music, boost their cognitive skills, and enhance their emotional and social skills (Bamford, 2006). Schools with music programs, such as Children's Music School No. 1, have developed courses designed to provide their students with early and thorough knowledge of vocal technique, music theory, and performance practices.

Although vocal education has clear benefits, it can still be challenging to participate in and fully maximize the benefits of these programs, especially in places like Kazakhstan. Sometimes, the effectiveness of a program is hindered by problems such as a lack of professional vocal coaches, insufficient resources, and the use of varied teaching methods. Consequently, it is essential to examine the opportunities and challenges of providing high-

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quality vocal education in Kazakhstani music institutions.

The purpose of this study is to determine whether vocal instruction affects the musical development of children aged 7–10 at Children's Music School No. 1 in Almaty. By focusing on this school, the study will provide an insightful analysis of how vocal education supports children's cognitive, social, and emotional development, as well as the challenges and opportunities that arise in delivering such education in Kazakhstan. The impact of complementary activities, such as group singing and practical exercises, on the improvement of musical skills, as well as how these activities fit with world norms in music education, is also investigated in this work. Though studies on music education in Kazakhstan (Hao et al., 2023) have been conducted, there has yet to be a targeted study on the impact of vocal education on children's learning and the development of their musical skills.

Vocal education in Kazakhstan's music schools is crucial for the development of social and emotional skills, as well as musical ability, particularly for children between the ages of 7 and 10. Still, the effects of vocal training on these abilities in Kazakhstan, especially at Almaty's Children's Music School No. 1, have not been thoroughly investigated. Vocal education provides students in these schools with the opportunity not only to enhance their voice but also to explore music concepts, participate in group projects, and develop emotional expression.

Still, vocal education presents several difficulties. Among these difficulties are a lack of instructional materials, the need for more vocal pedagogy teacher training, and issues with accessibility to relevant learning opportunities. Moreover, it remains unknown how additional activities, such as group singing, hands-on exercises, and creative interactions, may impact the musical ability of young people. Within this framework, the present study aims to investigate the impact of vocal education on the development of musical and social skills in children aged 7–10 at Children's Music School No. 1 in Almaty.

The following questions are aimed at being answered by this work.

- Effect of Vocal Education on Musical Competency at Children's Music School No. 1 in Almaty: How does vocal education impact the musical and social skills of youngsters aged 7 to 10?
- Challenges and Obstacles: During vocal education at Children's Music School No. 1 in Almaty, what obstacles and difficulties surround the process?
- Group Activities: How might practical exercises and group singing at Children's Music School No. 1 in Almaty help improve the children's musical ability?
- How can vocal teaching techniques in Children's Music School No. 1 in Almaty help youngsters develop their musical ability?

The purpose of this study is to examine whether vocal education enhances the musical abilities of children at Children's Music School No. 1 in Almaty. It aims to investigate how vocal training supports the development of musical and social skills in children aged 7–10, while also identifying the main challenges and obstacles within the current program and suggesting ways to improve teaching practices. The study further explores the role of extracurricular activities, such as group singing and practical exercises, in strengthening students' musical skills, and considers the teaching methods applied in vocal education and their effectiveness in developing musical abilities. By placing special emphasis on teaching strategies and supplementary activities, particularly group singing, the study provides a comprehensive view of the influence of vocal education in music schools.

2. Literature review

2.1. Music education and child development

For a long time, people have recognized that music education plays a crucial role in helping children develop critical thinking skills, foster social interaction, and manage their emotions. Numerous studies indicate that structured musical activities can benefit both academic performance and social skills. For instance, Jaschke et al. (2018) found that prolonged music education significantly enhanced children's executive functions, including inhibition and planning, thereby fostering improved academic performance. Martins-Said et al. (2025) similarly demonstrated that children who received music education excelled over their peers in both academic and social spheres, indicating a significant correlation between music-based learning and social integration.

The addition of vocal education has demonstrated significant potential. Mendelson et al. (2016) contended that music education not only fosters intellectual development but also bolsters emotional resilience, offering a comprehensive developmental framework for students. These results indicate that schools should allocate more resources to music programs, particularly for young children.

2.2. Vocal training and group singing in education

A growing body of research highlights the unique benefits of singing, particularly when done in groups. Good and Russo (2016) discovered that children participating in group singing exhibited greater cooperation compared to peers involved in visual arts or competitive games. The synchronous aspect of group singing was demonstrated to improve peer interaction and social cohesion among individuals from varied socioeconomic and ethnic backgrounds.

Kropachev et al. (2020) emphasized the cooperative learning benefits of music education in promoting social interaction and collective participation. And emphasized the importance of integrating contemporary vocal techniques and professional collaborations into teacher education programs to improve the quality of music education. Their work emphasizes the importance of vocal performance as both a pedagogical instrument and a domain for student development.

2.3. Music education in the Kazakh context

In Kazakhstan, music education is deeply interwoven with national identity and cultural heritage. Folk traditions, particularly in vocal music, continue to influence teaching practices. Dobrovolskaya and Stoyanova (2017) explored how Russian and Kazakh musical traditions influence youth education, emphasizing the integration of folk elements in modern music pedagogy. Kenzhegalieva et al. (2024) further elaborated on the value of combining traditional and contemporary teaching methods to boost student creativity and preserve cultural identity in the face of globalization.

Studies that focus on Kazakhstan have shown that vocal training works well in Kazakhstani music schools. Organized vocal lessons for children between the ages of 7 and 10 significantly improved both their musical and social skills. These results are like those found in other countries, which show that voice-based instruction is important in many different types of schools around the world.

2.4. Research gap and contribution

Kazakhstan's music education is heavily influenced by the country's cultural heritage, particularly its rich traditions of folk music and the oral transmission of knowledge. The dombra and kobyz, as well as traditional singing styles, play important roles in early childhood education and the development of cultural identity. Kazakhstani music education, in contrast to many Western models that prioritize technique, underscores storytelling, improvisation, and emotional expression, mirroring indigenous pedagogical frameworks and communal learning methodologies. Dobrovolskaya and Stoyanova (2017) examined how Russian and Kazakh musical traditions shape musical identity, emphasizing the preservation of national repertoire in contemporary education. Similarly, Kenzhegalieva et al. (2024) argued that integrating traditional forms with modern methods enhances creativity and cultural awareness among students.

The structured vocal training for children aged 7–10 significantly improves both musical skills and social-emotional development. Jaschke et al. (2018) documented the benefits of long-term music education on executive functions and academic performance, which are here confirmed within a distinctly Kazakh cultural environment. Similar engagement-based studies in other areas of arts education have also highlighted the role of learning context in shaping student outcomes.

Collectively, these studies demonstrate that culturally embedded, group-based vocal practices in Kazakhstan support not only musical and artistic development but also emotional engagement, social bonding, and cognitive growth. The Kazakhstani experience thus enriches global discussions on music pedagogy by offering a model that prioritizes collective, tradition-informed approaches alongside modern instruction methods.

3. Methodology

This study employs a mixed-methods research design, combining qualitative and quantitative approaches to investigate the impact of vocal education on children's development in musical, social, and academic domains. The qualitative component of the study was employed to obtain comprehensive insights into classroom dynamics, the viewpoints of teachers and parents, and institutional objectives. The quantitative part, on the other hand, employed statistical tools such as percentages, means, standard deviations, and reliability coefficients to demonstrate the extent of improvement in children's skills. This combination provides a comprehensive view of the effectiveness of vocal education at Almaty, Kazakhstan's Children's Music School No. 1.

The study included four participant groups: children aged 7–10 enrolled in vocal education, a control group of children without musical training, music teachers, and parents. A purposive sampling technique was employed to ensure the inclusion of individuals directly involved in or affected by the vocal education program at Children's Music School No. 1 in Almaty. To be chosen, kids had to be enrolled in certain vocal courses (group singing and music theory) for at least one semester of school. The children in the control group were the same age and attended the same school, but they had never received any structured music lessons before. Teachers who participated in the study had to have experience in vocal pedagogy and be actively teaching in the program. Parents were selected based on their children's involvement in either vocal education or control groups. This sampling guaranteed a diversity of informed viewpoints pertinent to the research aims.

Data was collected using a combination of qualitative and quantitative instruments.

- Qualitative data were gathered through semi-structured interviews with teachers, parents, and school administrators to capture their views on the effects of vocal education. Classroom observations and document analysis (including curriculum plans and lesson documents) were also used to understand pedagogical strategies and institutional support.
- Quantitative data were collected through structured observations and performance

tracking, which were later translated into percentages of skill improvement and subjected to statistical analysis.

The research instruments used in this study include interview protocols, observation checklists, a document review matrix, and quantitative recording sheets. The interview protocols, designed for parents, teachers, and administrators, gather their perspectives on the effectiveness of vocal education. The observation checklists are applied in classrooms to record student engagement, teaching performance, and the overall classroom environment. The document review matrix is used to examine the curriculum design, instructional goals, and their alignment with expected learning outcomes. Finally, the quantitative recording sheets track participation levels and measure student performance.

A mixed-methods approach guided the data analysis process.

- Qualitative data, gathered from interviews, classroom observations, and document reviews, were analyzed using thematic coding. Recurring themes were categorized into three major areas: academic performance, musical development, and social-emotional skills. Verbatim quotes were extracted to support each thematic category.
- Quantitative data, including metrics such as skill improvement percentages and participation rates, were analyzed using descriptive statistics.

Improvement percentages were calculated based on teacher assessments and observational records comparing baseline skill levels (at the beginning of the semester) with post-intervention performance. For instance, a child showing development in social interaction, pitch control, and musical responsiveness across the term was marked accordingly. These changes were then averaged across each group and expressed as percentage increases. Measures of central tendency (mean) and dispersion (standard deviation) were used to identify patterns at the group level. Cronbach's Alpha was also used to assess the reliability of composite scales applied in rating skill changes.

The demographic data and training courses attended by the study subjects are presented in Table 1. It divides the participants into several groups, including teachers, parents, school officials involved in the study, and children who received vocal education. Table 1 lists the participants' age range, the specific programs they visited, and the skills they acquired from each one. This division clarifies the various points of view and experiences presented in the research, as well as the influence of different educational backgrounds on the investigation results.

Table 1 presents the four groups of participants in this study: children who received vocal training, a control group with no musical training, teachers, and parents. Interviews with music teachers highlighted the importance of group singing, which they regarded as central not only to musical development but also to fostering cooperation and self-confidence among children. One teacher explained that when children sing in harmony, the process goes beyond music; it teaches them to listen attentively, wait for their turn, and support one another.

Parents also reported noticeable changes in their children's behavior at home. For example, one parent shared that her daughter, who had previously been shy, became more confident after a few months of vocal classes and even began to speak up during family gatherings.

Table 1: Participant demographics and training programs

Skills acquired	Programs/training attended	Age range	Number of participants	Group
Vocal performance, music theory, social skills, teamwork	Vocal education, group singing, music theory	7-10 years	40	Vocal education group
Social skills	No music education	7-10 years	40	Control group
Teaching skills, pedagogical methods	Vocal pedagogy, music education training	N/A	10	Teachers
None (parental observations)	None	N/A	10	Parents

N/A: Not applicable

These qualitative insights emphasize the link between structured musical training and the development of both musical abilities and socio-emotional skills in children.

Table 2 provides a detailed summary of participant demographics for both the Vocal Education Group and the Control Group, along with improvements observed in academic performance, musical ability, and social skills. Table 2 shows the percentage of progress in each domain, allowing a clear comparison of the two groups.

The results indicate that structured vocal education has a positive influence on children's cognitive and social development. The Vocal Education Group showed consistent improvements across all three areas, while the Control Group, which did not receive vocal training, demonstrated weaker outcomes, particularly in academic performance and social skills. These findings suggest that vocal education significantly contributes not only to the enhancement of musical skills but also to the overall academic and social growth of children.

Fig. 1 illustrates the increases in academic performance, musical ability, and social skills observed in the Vocal Education Group compared with the Control Group. The results highlight the positive influence of vocal training, as the Vocal Education Group demonstrated significantly greater improvements across all three areas. These quantitative findings were reinforced by qualitative

evidence from interviews and classroom observations. One music teacher noted clear behavioral differences, explaining that students who participated in vocal lessons were more willing to engage in group activities and often supported their peers during musical tasks.

In contrast, a parent from the control group observed that her son, who did not receive vocal training, tended to remain isolated and rarely took part in school events. She emphasized that children in the music program appeared noticeably more confident.

Taken together, these insights indicate that vocal education contributes not only to measurable gains in academic, musical, and social domains but also to broader improvements in social behavior and peer interaction that may not be fully reflected in quantitative data alone.

Table 2: Comparative analysis of skill improvements across music education groups

Group	Social skills improvement	Musical skills improvement	Academic performance improvement	Mean	Standard deviation
Vocal education group	38%	33%	18%	29.7%	5.1
Control group	8%	6%	4%	6.0%	2.0

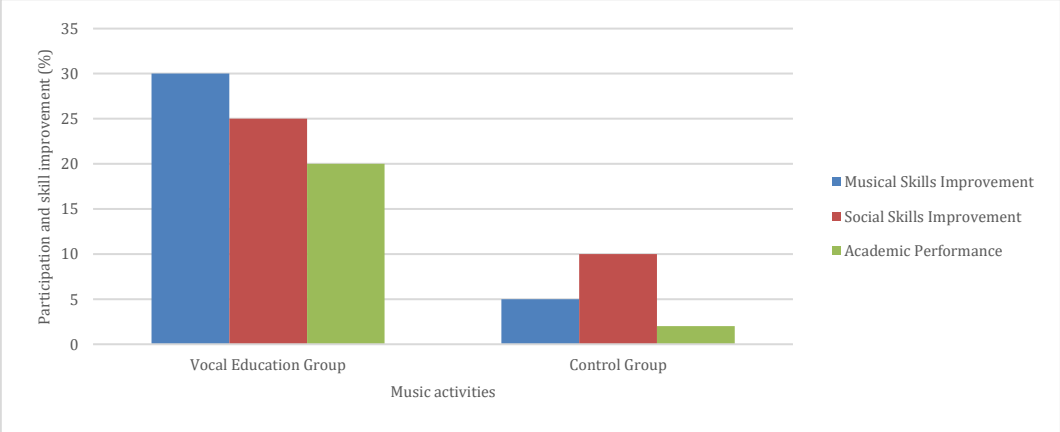

Fig. 1: Comparative improvement in academic, musical, and social skills

Fig. 2 illustrates the relative information on student involvement and their development in social and musical skills across three music-related events: singing, group playing, and playing different instruments. The singing activity had the highest degree of participation (40%), followed by significant gains in both musical skills (35%) and social skills (40%), as shown in Fig. 2. Though less involved, the Group Playing and Various Instruments activities clearly improved social skills (30%), and the Various Instruments activity improved musical skills (25%). These findings demonstrate the significant impact of every activity on students' development in various spheres, particularly with singing standing out in both participation and improvement in social interactions.

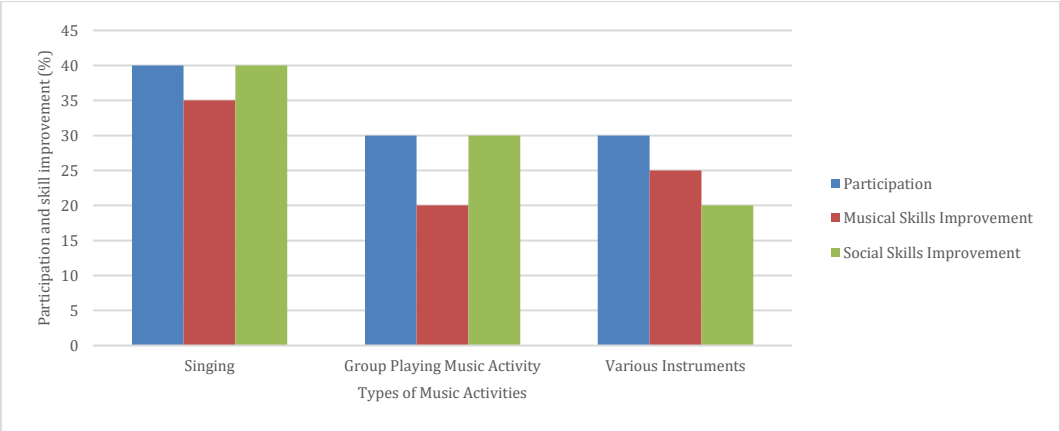

Fig. 2: Comparison of participation and improvement in music and social skills across activities

Table 3 shows a comparison of academic performance, social skills improvement, and musical performance among several music education groups, including the Vocal Education Group, the Individual Singing Group, and the Control Group. Table 3 also features statistical indicators for every group, including mean, standard deviation, and Cronbach's Alpha. These markers enable one to better understand the variability and reliability of the data, guiding the analysis of the impact of music education on children's development. Higher improvements in the Vocal Education Group over the Control Group indicate the notable influence of vocal education on social and musical abilities.

These quantitative results were further supported by participant feedback gathered during the interviews. Teachers consistently emphasized the strong role of group singing in fostering both collaboration and musical growth. As one teacher explained, group singing requires students to attune not only vocally but also emotionally, creating a shared energy that individual practice alone cannot always provide. Students also reflected on these differences. One participant who experienced both individual and group singing reported that while individual practice sharpened technical skills, group singing fostered a sense of teamwork, enjoyment, and collective progress.

Table 3: Comparison of skill improvements across music education groups with statistical indicators

Group	Academic performance (%)	Improvement in social skills (%)	Improvement in musical skills (%)	Mean	Standard deviation	Cronbach's alpha
Group singing	15%	40%	35%	30%	5.3	0.89
Individual singing	10%	30%	25%	21.7%	4.0	0.85
Control group	3%	2%	5%	3.3%	1.5	N/A

N/A: Not applicable

Such perspectives help explain the higher scores achieved by group singing in both musical and social skill development, reinforcing the statistical findings with real-life experiences. The study compared three groups: Group Singing, Individual Singing, and the Control Group. Fig. 2 presents a relative analysis of improvements in social skills, musical skills, and academic performance across these groups. Group singing demonstrated the most substantial gains, with social skills improving by 38% and musical skills by 33%. Fig. 3 shows that individual singing also yielded benefits, with a 28% improvement in social skills and a 27% increase in musical skills. By contrast, the Control Group, which received no musical instruction, showed minimal progress, with only 7% improvement in social skills and 9% in musical skills. Overall, the findings confirm the considerable benefits of music education—especially group singing—in enhancing children's social, musical, and cognitive development.

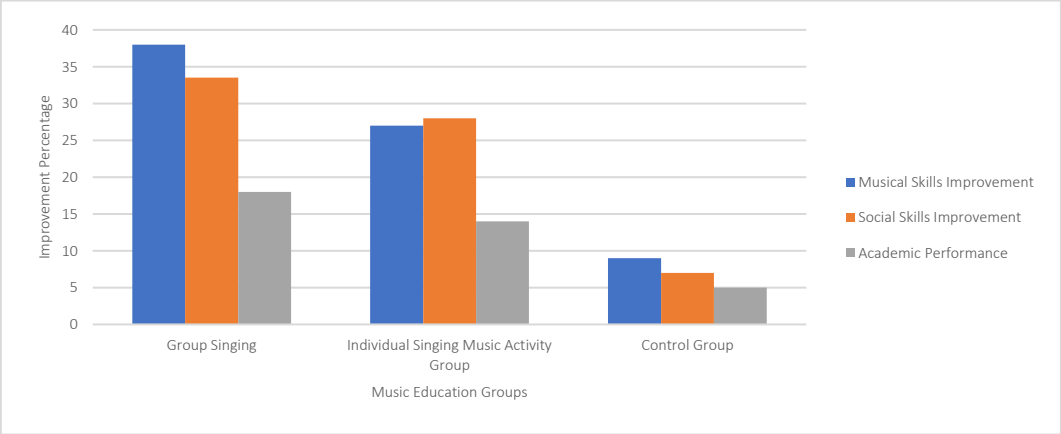

Fig. 3: Comparison of improvement in social, musical, and academic skills across different music education groups

The statistical differences were further supported by qualitative evidence collected during the interviews. Teachers described how group singing fosters a unique sense of collective focus and emotional connection. One teacher observed that group singing encourages students to adjust to one another, becoming more attentive to timing, pitch, and even the emotions of their peers. In this sense, the process extends beyond technical skill to include emotional training.

Parents also linked vocal education to changes in academic behavior. One parent noted that her son became more disciplined with homework after joining group singing, suggesting that the structured nature of rehearsals helped him develop better time management skills.

These perspectives indicate that the strongest gains in the group singing category may result not only from musical training itself but also from the deeper personal engagement and teamwork that the activity requires.

4. Discussion

This study aimed to investigate the impact of vocal education on the development of musical, social, and academic skills among primary school children in Kazakhstan. The results demonstrate that structured vocal education, particularly group singing, has a positive impact on all three domains. Consistent with prior studies, the Vocal Education Group showed the most substantial improvement in social (38%) and musical skills (33%), along with notable advancements in academic performance (18%).

These findings suggest that group musical activities promote collaboration, emotional synchronization, and cognitive engagement. Qualitative data from interviews and classroom observations corroborated this interpretation, indicating that group singing enhanced unity, social confidence, and task persistence. Teachers observed that children exhibited increased empathy and

attentiveness during collaborative music-making activities.

Interestingly, singing alone also improved musical performance (28%), but had a less pronounced effect on social development (27%). This finding aligns with the results of Kropachev et al. (2020), who demonstrated that collaborative work is more effective in developing social skills than individual training. The control group, lacking formal music instruction, exhibited negligible growth, thereby corroborating previous findings (Jaschke et al., 2018) regarding the association between music education and social-cognitive development.

One unique contribution of this study lies in combining academic, musical, and social dimensions within a single framework. Previous studies often isolated these variables, but this mixed-methods research reveals how musical engagement intersects multiple developmental areas. Echoing Mendelson et al. (2016), our results support the notion that music education provides a holistic developmental strategy, encompassing cognitive, emotional, and social aspects.

However, some issues need to be acknowledged. First, the use of self-reported data from parents and teachers can lead to bias, especially when determining how well students are performing. Second, although the study employed both qualitative and quantitative methodologies, the synthesis of these findings could be enhanced using longitudinal data and a more equitable distribution of data sources. The observational data were confined to two classroom sessions, and the interviews, while informative, may represent subjective viewpoints.

The sample size was confined to a single institution, potentially constraining the generalizability of the results. Future research should aim to encompass a variety of school environments throughout Kazakhstan and incorporate variables such as socioeconomic status and gender.

Despite these limitations, the study provides compelling evidence that vocal education, particularly in group settings, enhances not only musical skills but also students' confidence, academic engagement, and social skills. In regions such as Kazakhstan, where cultural heritage is deeply intertwined with music, these results underscore the importance of integrating vocal programs into the broader educational curriculum.

Investing in well-structured music education can foster a generation of learners who are cognitively sharp, emotionally intelligent, and socially capable.

These findings not only confirm the well-established benefits of vocal education but also provide a culturally relevant case study from Kazakhstan, where music education is deeply rooted in national heritage. The study elucidates the coexistence of traditional music values with contemporary pedagogical methodologies, thereby enriching global discourse on culturally responsive music education.

5. Conclusion

This study demonstrates that vocal education helps children learn music, make friends, and perform better in school. The Vocal Education Group showed the most improvement, especially among students who sang in groups. These results demonstrate that making music together not only helps people improve their technical skills but also enables them to express their feelings, work as a team, and become more engaged in class.

Group-based musical activities yielded the most significant advantages; nevertheless, individual singing also exhibited beneficial outcomes, especially in enhancing musical abilities. This suggests that both formats have their own advantages, but singing in a group has unique social and cognitive benefits.

This study employed a mixed-methods approach, combining statistical analyses with interview and observational data to provide a thorough understanding of the effects of music education. The incorporation of qualitative perspectives clarified the emotional and behavioral transformations that quantitative data alone could not fully capture.

These results support the idea of incorporating vocal music education into elementary school curricula to help students develop in a well-rounded manner. In places like Kazakhstan, where music is a significant part of cultural identity, investing in structured vocal programs could help students become more creative, emotionally intelligent, and better equipped to handle schoolwork.

Future studies should investigate the lasting effects of vocal education and evaluate the outcomes of various instructional methodologies. Bigger, more varied samples and more extended observation periods would also help confirm these results. This study situates itself within the Kazakhstani context, where folk traditions and national identity influence musical pedagogy, thereby providing a distinctive contribution to the international music education literature. It demonstrates how local cultural frameworks can enhance global models of arts-based learning, particularly in areas where tradition and new ideas must be effectively balanced.

Policymakers and educators are strongly encouraged to recognize the diverse benefits of music education and prioritize its integration into general education frameworks to support children's comprehensive development and lifelong learning opportunities.

6. Suggestions for future research

Although this study has demonstrated how vocal education enhances children's social, musical, and cognitive skill development, several areas require further research to better understand the role of music education in child development.

1. Examining the long-term effects of vocal education on academic performance, social competency, and musical skills is one of the main directions of future research; longitudinal studies are hence quite important. This would enable academics to evaluate whether the advantages of music education last over time and if they support academic success and emotional well-being in later phases of education.
2. Although this study highlighted the value of group singing, future studies could compare the effects of individual music education with those of group-based education. Knowing the respective advantages of these two strategies will enable music education initiatives to be more suited to the demands of various students.
3. Cultural Contexts: Future studies should investigate how cultural variations affect the efficacy of vocal education programs, as this study was carried out within the framework of Kazakhstan. Research conducted in other nations or areas with varying cultural perspectives on music education can help one understand how cultural settings influence the results of such initiatives.

Future studies should also explore ways to integrate music education with other subjects, such as language arts, math, and physical education, to enhance overall student development. Investigating multidisciplinary teaching approaches may help one understand how music education can support cross-curricular learning and contribute to the holistic improvement of cognitive development. Given the growing importance of technology in education, future research may examine how digital tools and online platforms enhance vocal education. Studies could examine how tools such as interactive music platforms, virtual singing lessons, and music production software might augment conventional approaches and enable vocal education to a larger audience. In essence, even if the present study offers an insightful analysis of the advantages of vocal education, much more needs to be discovered about its long-term consequences, optimal delivery approaches, and connection with broader educational policies. By investigating these domains, future studies can help maximize the benefits of music education and ensure that it continues to offer numerous advantages for children's growth.

Compliance with ethical standards

Ethical considerations

This study was approved by the Ethics Committee of the Department of Vocal Arts, Kurmangazy Kazakh National Conservatory, Almaty, Kazakhstan. Informed consent was obtained from all participants: written from adults, written from parents/guardians for children, and verbal from children. Participation was voluntary, data anonymized, and confidentiality and dignity were strictly maintained.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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