

PalArch's Journal of Archaeology
of Egypt / Egyptology

MUSIC EDUCATION IN LANGUAGE AND COGNITIVE DEVELOPMENT:
A CRITICAL REVIEW

*Ajab Ali Lashari¹, Sumaira Suleman Mahar², Mushtaque Ahmed Solangi³, Saeeda Anjum
Buriro⁴, Aisha⁵, Sadam Hussain Chang⁶*

¹Lecturer Department of Education Sindh Madressatul Islam University Karachi

^{2,5} MS Scholar Sindh Madressatul Islam University Karachi

³Assistant Professor Department of Basic Sciences and Humanities Dawood University of
Engineering and Technology Karachi

⁴University of Sindh Jamshoro

⁶Education & Literacy Department Govt of Sindh

Corresponding Author Email: ajablashari@smiu.edu.pk

**Ajab Ali Lashari, Sumaira Suleman Mahar, Mushtaque Ahmed Solangi, Saeeda Anjum
Buriro, Aisha, Sadam Hussain Chang. Music Education In Language And Cognitive
Development: A Critical Review -- Palarch's Journal Of Archaeology Of
Egypt/Egyptology 20(2), 2101-2111. ISSN 1567-214x**

**Keywords: Music, Education, Language Development, Cognitive Development,
Holistic Development**

ABSTRACT

Music education has been considered an essential broader discipline for centuries for educating the world on broader lessons and teaching with the help of rhythm and sounds. Music has been considered an important genre that represents emotions, feelings, and thoughts in a rhythm that can be considered well for the holistic development of children but has been ignored in the teaching and learning process. Music education has been an ignored subject to apply in education for healthy learning. The study has been designed to critically review the related literature to understand the role of music education holistic development of individuals, particularly language development. A comprehensive educational program that promotes students' holistic learning and development must include music instruction as a critical element for the cognitive learning of individuals.

The paper uses secondary data for the analysis. In this regard, literature has been reviewed to understand the subject matter better. This paper gives detailed account advantages of music instruction, from social and cultural enrichment to the cognitive, linguistic, and emotional

development of individuals. This study emphasises the value of including music education in the larger educational framework by examining numerous research studies and practical examples. The literature review suggests a dire need to implement music education for the holistic development of individuals in today's world.

INTRODUCTION

Even in the 21st century, music education has been ignored and less implemented in educational settings in Pakistan. Music education to adopt and implement has been under criticism around the globe (Savage, 2020). It is not only in Pakistan but around the globe and has been ignored and criticised to use as an essential tool for teaching and learning. It has been considered a challenging task to address music education locally. The hot debate after hiring 750 music teachers for the first time in history by Sindh Government (Ayesha, 2023) on social media has led to music teachers being disliked by the public for the government (The Nation, 2022). Music education was designed and implemented to address the critical issues that have arisen in Pakistan, such as intolerance and extremism. The basic philosophy behind introducing such educational policy and recruiting the teachers through third-party tests, according to the minister "to encounter extremist tendencies" (minister of education) (Web Desk, November 18, 2022). No doubt, music education can play a more significant role in an individual's holistic development, particularly in harmonising with other cultures and languages (Savage, 2018).

There is a strong bond between music and academic success. The learners who found poetry and music lovers are more creative and expressive in their ideas and contextualising them in poetry and Music (Costa-Giomi, 2004). The learners who have a strong motivation for music are liked and appreciated by their peers among fellows.

The connection between music and academic success has been less researched and valued in an educational context. Few empirical studies (Crawford, 2020) assure a strong relationship between these two variables. It is nevertheless challenging to argue for a direct connection between academic success and music lessons (Schellenberg, 2006; Moreno et al., 2011; Tsang & Conrad, 2011; Degé et al., 2011; Rodrigues et al., 2013; Roden et al., 2014; Dumont et al., 2017; Holochwost et al., 2017). There is a need to address that research domain well by the educationists.

Music for Aesthetic Education

The aesthetic is considered an aptitude for appreciating or developing the sense of art in music, sculpture, and literature. Music education is considered one of the most fundamental and challenging forms of aesthetic education, which necessitates that kids start learning how to play instruments and understand music at a young age (Yunusov et al., 2021). As a result, the goal of aesthetic education in all educational settings, including those in schools and out-of-school settings, is to foster an environment where kids can learn about art, music, and sculpture. Another crucial and successful method of teaching children and teens the value of patriotism is through Music (Shermatova, 2021).

Focused attention, memorizing intricate visual patterns, memory, and fine motor skills are all necessary for music training. As a result, engaging in such a problematic activity may improve young children's and teenagers' general cognitive abilities, improving their academic achievement. Schellenberg (2004) claimed that the most likely reason for music interventions' alleged variety of benefits is that such training improves people's general intelligence, which is correlated with many cognitive and academic skills (Deary et al., 2007, Rohde & Thompson, 2007).

Recently, there has been a great deal of interest among scholars, teachers, and policy officials in whether music-related activities in schools enhance students' cognitive and academic abilities. The effectiveness of music training in improving children's and young adolescents' general intelligence has been investigated in several studies (Rickard, Bambrick, & Gill, 2012), memory (Roden, Kreutz, & Bongard, 2012), spatial ability and maths (Mehr, Schachner, Katz, & Spelke, 2013), and literacy skills (Slater et al., 2014), among others (for a review, see Miendlarzewska & Trost, 2013). Schools may consider implementing additional musical activities if music teaching enhances kids' academic performance and cognitive ability (Sala & Gobet, 2017).

Executive functions play a role in still another explanation. According to Conway and Engle (1996) and Peng et al. (2016), cognitive abilities including working memory, control, and flexibility, are significant determinants of academic accomplishment, among other sources. Executive functions are used when learning to play an instrument (Bialystok & Depape, 2009; George & Coch, 2011); therefore, it is feasible that these benefits will extend to nonmusical talents as well.

Music Education and Language Learning

Due to the different cognitive processes and emotional reactions it elicits, music has long been seen as a potent instrument for improving language development. With an emphasis on how music can affect language learning across various age groups and situations, this study summarises significant findings from relevant field research.

According to studies, the musical components of language, such as rhythm, melody, and intonation, are highly perceptible to infants (Crawford, 2020). Early language development can be aided by exposure to musical motifs found in nursery rhymes and lullabies (Samejo, Lashari & Mahar, 2023).

The vocabulary of preschoolers, who participate in music-based activities or creative story-based learning, tends to be better in their academic performance (Maitlo, Soomro & Lashari, 2023). Children can learn new words and expressions by singing rhymes and songs with repeating rhyme schemes. Music can be considered an essential tool for learning a language, particularly the target language.

Phonological Awareness: The capacity to identify and manipulate the sounds of language can be enhanced through Music (Samejo, Lashari, Mahar, 2023). This

ability is essential for reading and developing literacy skills at the initial stage of school.

Music and Second Language Learning

Music can foster a motivating emotional environment conducive to language learning while lowering anxiety (Barrett, 2023). Adult learners of second languages are strongly motivated to learn the language if they are interested in listening to the music of another language (Prest & Goble, 2021; Lashari, Umrani & Buriro, 2021). Music does not carry forward language elements but also cultural learning and cultural representations (Rohde & Thompson, (2007; Samejo, Lashari & Mahar, 2023). Indigenous language culture and language can be preserved well if there is literature and music in that language.

Vocabulary and grammatical structures are easier (Rodrigues, Loureiro & Caramelli, 2013) to remember with the help of the melodic and rhythmic aspects of songs, and learners are more motivated to learn, which helps them to foster their language (Lashari, Umrani & Buriro, 2021).

According to the literature (Rustamov, 2021), music helps people of all ages learn languages and substantially impacts language learning. While there is still much to learn about the specifics of this relationship, the evidence favours the inclusion of music as a valuable instrument for increasing language learning and proficiency in language education programs (Kaschub,2020; Maitlo, Soomro & Lashari, 2023). Music is a potential discipline that can contribute to the language development and cultural understanding of other communities. It is one connecting tool that removes barriers between communities and nations.

Impact of Music Education on Other Skills Development

Those with aesthetic or musical senses have higher cognitive abilities and can perform well in academic activities. Music skills can be transferred to non-music skills (Kaschub,2020)—a look at the empirical evidence. Numerous correlational studies have demonstrated the link between musical and nonmusical abilities such as literacy, mathematics, working memory, and general intelligence. These nonmusical abilities include literacy (Anvari et al., 2002; Forgeard et al., 2008); mathematics (Cheek & Smith, 1999); short-term and working memory (Lee, Lu, & Ko, 2007) and working memory (Cheek & Smith, 1999). This shows that learners who have musical abilities can have cognitive abilities to perform well in other disciplines.

According to Cheek and Smith (1999), pupils who had taken private music lessons did better on the Iowa Test of Basic Skills' mathematics section. Wetter, Koerner, and Schwaninger (2009) discovered a favourable correlation between participating in musical activities and general academic achievement, which aligns with the findings of the latter two research. These findings are the reasons to acknowledge the studies.

Music as a Universal Language

The human experience is enriched by music, a universal language that cuts across cultural barriers. Music education covers various activities, from playing an instrument to comprehending musical theory and history (Kraus & White-Schwoch, 2020). Music education underlines the importance of including music education in regular curricula because it can help develop well-rounded people. Two artistic disciplines—Music and language—have woven delicate threads into the fabric of human existence, forging a connection that transcends generations and cultural boundaries. Language and music can evoke emotions, tell stories, and communicate complicated concepts (Feldman, Lutch, Contzius, & Bugaj, 2020). Even though they are both powerful ways to express themselves, working together opens a world of opportunities.

We can share our thoughts, feelings, and experiences because language is the medium through which we communicate (Jones, 2020). It acts as our forum for communication, discussion, and story-sharing. However, music is a universal language that speaks to the heart and soul (Jones, 2020). It can evoke strong emotions, revive memories, and uplift moods. The intriguing intersection of these two kinds of communication has sparked debate regarding the potential connections between music and language development.

The intriguing link between music and language learning is only now beginning to be demonstrated by research. Studies show that listening to music while learning a language can enhance pronunciation, aid terminology retention, and deepen understanding of linguistic nuance. As the world grows increasingly interconnected, having the ability to communicate effectively in multiple languages is more important than ever. The hope is that by experimenting with new language learning methods, like including musical elements in lesson plans, the learning process as a whole will be enhanced and promote linguistic proficiency.

This study embarks on a journey to comprehend the intricate connection between music and language learning. Drawing from various academic books and research articles, it will cover subjects in cognitive psychology, neuroscience, and instructional design. The paper attempts to shed new light on new directions for educators, language enthusiasts, and learners by investigating the underlying mechanisms through which music influences language learning.

Music Education and Cognitive Benefits

The benefits of music instruction on cognitive development have been repeatedly shown through research. It improves memory, focus, and problem-solving abilities to learn to read music and play an instrument. The connection between music and many academic subjects is highlighted by studies (Rohde & Thompson, 2007) linking musical training to enhanced spatial-temporal cognition and mathematical skills. According to research, youngsters taking music lessons performed better on cognitive control activities, which led to increased intelligence scores and, consequently, academic skills (Degé et al., 2011). Music has been considered adequate for cognitive perspectives. In the

first instance, a specific work is heard and performed, and its creative components are explained musically and pedagogically. Through listening, kids learn about the piece, its musical elements, genre, structure, modes of expression, performance, and artistic content. In the second instance, the musical piece is first studied by being listened to, then set in some form, and its aesthetic content is demonstrated in action.

Recent studies suggest that learning music improves children's and adolescents' scholastic and cognitive abilities (Sala & Gobet, 2017). Along with many other activities, music education includes singing, playing instruments, clapping, and rhythm games. Notably, various specialised programs (such as the Kodály method; Houlahan & Tacka, 2015) have been created to improve the cognitive abilities required for performing music.

Emotional and Expressive Development with the Help of Music Education

Introspection and emotional expression are encouraged by listening to Music (Roden et al., 2014). Students that receive music education are better able to comprehend and control their emotions, which raises their emotional intelligence. Additionally, playing music gives one a creative opportunity for self-expression, fostering self-assurance and self-worth (Rohde & Thompson, 2007).

Singing activities are essential for helping students improve their musical literacy and performance abilities (Vuen & Noami, 2022). The student manages his or her vocal performance during group singing in the classroom. He or she also listens to and watches the performances of his or her peers and tries to engage with them (Akbarova, Tursunova, & Abdunazarov, 2020). After all, singing and listening are taught in the classroom. Along with singing and listening exercises, they can learn about musical instruments and descriptions by playing musical instruments and engaging in creative activities (Shermatova, 2021).

Music Education in Social and Collaborative Skills Development

Group performances and collaborations in music frequently promote interpersonal and cooperation abilities. Students gain the ability to interact with people successfully, listen intently, and coordinate their activities. Students who take part in groups or choirs build a sense of community and belonging, which aids in the development of empathy and cooperation (Rustamov, 2021).

All around the world, music is firmly ingrained in cultural traditions. Through exposure to other musical genres, styles, and traditions, music education helps pupils appreciate and comprehend other cultures. Students get an appreciation for variety and a global perspective through listening to music from various cultures.

Music Education in Lifelong Learning and Wellbeing

Beyond the classroom, music education helps students develop lifetime learning and personal enrichment skills and values. People who enjoy music frequently find joy and relaxation in their musical activities, which improves their mental health and general welfare. The active music group outperformed the scientific class group regarding auditory working memory capacity over 18 months (Roden et al.'s, 2013, 2014; Prest & Goble, 2021). The scientific community is increasingly interested in studies on how music education affects cognitive capacities.

Challenges and Solutions

There are difficulties in putting comprehensive music education programs into place despite the many advantages. The integration of music education can be hampered by a lack of funding, pressure from standardised tests, and a range of instructor skill levels. Schools and educational institutions can work with regional arts organisations to address these issues, give teacher education priority, and push for the inclusion of music in educational policy. There are existing policy issues to implement music education to address intolerance and extremism at the early stage. In this regard, public discourse should be open, and seminars and workshops should be arranged to develop an awareness of mass media so that there should not be barriers to policy development and music education implementation.

CONCLUSION

The power of music education impacts students' cognitive, emotional, social, linguistic, and cultural development. Its inclusion in educational systems is crucial for developing well-rounded human beings with a wide range of skills and a strong appreciation for the arts. Teachers, learners, parents and policy makers need to support music education in holistic development of future generations by recognizing the fundamental significance of music education to encounter extremism and intolerance among youngsters.

REFERENCES

- Akbarova, M., Tursunova, G., & Abdunazarov, Z. (2020). Pedagogical approaches to the formation of musical literacy of students in the system of Higher Education. *European Journal of Arts*, (1), 125-128.
- Amur, A., Bukhari, S. U. P., & Lashari, A. A. (2023). Learning factors causing silence in English language (L2) classrooms at the graduate level. *Global Language Review*, 8(2), 226-235. [http://dx.doi.org/10.31703/glr.2023\(VII I-II\).20](http://dx.doi.org/10.31703/glr.2023(VII I-II).20).
- Ansari, A.K., (August, 10, 2023). Govt strikes a harmonious chord. <https://tribune.com.pk/story/2430102/govt-strikes-a-harmonious-chord>
- Anvari, S. H., Trainor, L. G., Woodside, J., & Levy, B. A. (2002). Relations among musical skills, phonological processing, and early reading ability in preschool children. *Journal of Experimental Child Psychology*, 83, 111e130. [http://dx.doi.org/10.1016/S0022-0965\(02\)00124-8](http://dx.doi.org/10.1016/S0022-0965(02)00124-8).
- Bialystok, E., & Depape, A. M. (2009). Musical expertise, bilingualism, and executive functioning. *Journal of Experimental Psychology: Human*

- Perception and Performance, 35, 565e574.
<http://dx.doi.org/10.1037/a0012735>.
- Barrett, M. (2023). Music education and the natural learning model. In *Teaching Music* (pp. 63-73). Routledge.
- Cheek, J. M., & Smith, L. R. (1999). Music training and mathematics achievement. *Adolescence*, 34, 759e761.
- Conway, A. R. A., & Engle, R. W. (1996). Individual differences in working memory capacity: More evidence for a general capacity theory. *Memory*, 4, 577e590. <http://dx.doi.org/10.1080/741940997>.
- Costa-Giomi, E. (2004). Effects of three years piano instruction on children's academic achievement, school performance and self-esteem. *Psychol. Music* 32, 139–152. DOI 10.1177/0305735604041491.
- Crawford, R. (2020). Socially inclusive practices in the music classroom: The impact of music education used as a vehicle to engage refugee-background students. *Research Studies in Music Education*, 42(2), 248-269.
- Deary, I. J., Strand, S., Smith, P., & Fernandes, C. (2007). Intelligence and educational achievement. *Intelligence*, 35, 13e21. <http://dx.doi.org/10.1016/j.intell.2006.02.001>.
- Degé, F., Kubicek, C., and Schwarzer, G. (2011). Music lessons and intelligence: a relation mediated by executive functions. *Music Percept. Interdisc. J.* 29, 195–201. DOI: 10.1525/mp.2011.29.2.195.
- Dumont, E., Syurina, E. V., Feron, F. J. M., and van Hooren, S. (2017). Music interventions and child development: a critical review and further directions. *Front. Psychol.* 8:1694 doi: 10.3389/fpsyg.2017.01694.
- Feldman, E., Lutch, M., Contzius, A., & Bugaj, K. (2020). *Instrumental music education: Teaching with the musical and practical in harmony*. Routledge.
- Forgeard, M., Schlaug, G., Norton, A., Rosam, C., Iyengar, U., & Winner, E. (2008). The relation between music and phonological processing in normal-reading children and children with dyslexia. *Music Perception*, 25, 383e390. <http://dx.doi.org/10.1525/MP.2008.25.4.383>.
- George, E. M., & Coch, D. (2011). Music training and working memory: An ERP study. *Neuropsychologia*, 49, 1083e1094. <http://dx.doi.org/10.1016/j.neuropsychologia.2011.02.001>.
- Holochwost, S., Propper, C., Wolf, D., Willoughby, M., Fischer, K., Kolacz, J., et al. (2017). Music education, academic achievement, and executive functions. *Psychol. Aesthet. Creat. Arts* 11, 147–166. doi: 10.1037/aca0000112
- Jaschke, A. C., Honing, H., & Scherder, E. J. (2018). Longitudinal analysis of music education on executive functions in primary school children. *Frontiers in neuroscience*, 103.
- Jones, B. D. (2020). Engaging second language learners using the MUSIC model of motivation. *Frontiers in Psychology*, 11, 1204.
- Houlahan, M., & Tacka, P. (2015). *Kodaly Today: A cognitive approach to elementary music education inspired by the kodaly concept*. New York, NY: Oxford University Press.
- Kaschub, M. (2020). Making music education future-ready. *Music Educators Journal*, 106(4), 19-20.

- Kraus, N., & White-Schwoch, T. (2020). The Argument for Music Education. *American Scientist*, 108(4), 210-214.
- Lee, Y., Lu, M., & Ko, H. (2007). Effect of skill training on working memory capacity. *Learning and Instruction*, 17, 336e344. <http://dx.doi.org/10.1016/j.learninstruc.2007.02.010>.
- Lashari, A. A., Mashori, G. R., Abbasi, A. G., & Talpur, Q. (2017c). Motivation to Learn English Language: A Study of Shah Abdul Latif University, Khairpur, Sindh. *International Journal of English Linguistics*, <https://doi.org/10.5539/ijel.v8n1p15>.
- Lashari, A. A., Umrani, S., & Buriro, G. A. (2021). Learners' self-regulation and autonomy in learning English. *Pakistan Languages and Humanities Review*, 5(2), 115.
- Maitlo, S. K., Soomro, A. R., & Lashari, A. A. (2023). The Impact of Picture Series Learning on the Creative Writing Skills of ESL Learners. *Global Digital & Print Media Review*, VI(II), 211-223. [https://doi.org/10.31703/gdpmr.2023\(VI-II\).14](https://doi.org/10.31703/gdpmr.2023(VI-II).14).
- Mehr, S. A., Schachner, A., Katz, R. C., & Spelke, E. S. (2013). Two randomised trials provide no consistent evidence for the nonmusical cognitive benefits of brief preschool music enrichment. *PLoS ONE*, 8. <http://dx.doi.org/10.1371/journal.pone.0082007>.
- Miendlarzewska, E. A., & Trost, W. J. (2013). How musical training affects cognitive development: Rhythm, reward and other modulating variables. *Frontiers in Neuroscience*, 7. <http://dx.doi.org/10.3389/fnins.2013.00279>.
- Moreno, S., Bialystok, E., Barac, R., Schellenberg, E. G., Cepeda, N. J., and Chau, T. (2011). Short-term memory training enhances verbal Intelligence and Executive function. *Psychol. Sci.* 22, 1425–1433. DOI: 10.1177/0956797611416999.
- Peng, P., Namkung, J., Barnes, M., & Sun, C. Y. (2016). A meta-analysis of mathematics and working memory: Moderating effects of working memory domain, type of mathematics skill, and sample characteristics. *Journal of Educational Psychology*, 108, 455e473. <http://dx.doi.org/10.1037/edu0000079>.
- Prest, A., & Goble, J. S. (2021). Language, Music, and Revitalising Indigeneity: Effecting cultural restoration and ecological balance via music education. *Philosophy of Music Education Review*, 29(1), 24-46.
- Rickard, N. S., Bambrick, C. J., & Gill, A. (2012). Absence of widespread psychosocial and cognitive effects of school-based music instruction in 10-13-year old students. *International Journal of Music Education*, 30, 57e78. <http://dx.doi.org/10.1177/0255761411431399>.
- Roden, I., Könen, T., Bonnard, S., Frankenberg, E., Friedrich, E., and Kreutz, G. (2014). Effects of music training on attention, processing speed and cognitive music abilities – Findings from a longitudinal study. *Appl. Cogn. Psychol.* 28, 545–557. DOI: 10.1002/acp.3034
- Roden, I., Kreutz, G., & Bongard, S. (2012). Effects of a school-based instrumental music program on verbal and visual memory in primary school children: A longitudinal study. *Frontiers in Psychology*, 3. <http://dx.doi.org/10.3389/fpsyg.2012.00572>.

- Rohde, T. E., & Thompson, L. A. (2007). Predicting academic achievement with cognitive ability. *Intelligence*, 35, 83e92. <http://dx.doi.org/10.1016/j.intell.2006.05.004>.
- Rodrigues, A. C., Loureiro, M. A., and Caramelli, P. (2013). Long-term musical training May improve different forms of visual attention ability. *Brain Cogn.* 82, 229–235.
DOI: 10.1016/j.bandc.2013.04.009
- Rustamov, I. (2021). Importance of Uzbek and English songs in education and language learning. *Scienceweb academic papers collection*, 11(2).
- Sala, G., and Gobet, F. (2017). When the Music's over. Does music skill transfer to children's and young adolescents' cognitive and academic skills? A meta-analysis. *Educ. Res. Rev.* 20, 55–67. doi: 10.1016/j.edurev.2016.11.005.
- Samejo, A. K., Lashari, A. A., & Mahar, S. S. (2023). A Study of Developing a Prototype of Sindhi Primer of Early Childhood Education Level in Sindh. *Global Social Sciences Review*, VIII(II), 225– 237. [https://doi.org/10.31703/gssr.2023\(viii\).21](https://doi.org/10.31703/gssr.2023(viii).21).
- Savage, J. (2021). The policy and practice of music education in England, 2010–2020. *British Educational Research Journal*, 47(2), 469-483. <https://doi.org/10.1002/berj.3672>
- Schellenberg, E. G. (2004). Music lessons enhance IQ. *Psychological Science*, 15, 511e514. <http://dx.doi.org/10.1111/j.0956-7976.2004.00711.x>.
- Schellenberg, E. G. (2006). Long-term positive associations between music lessons and IQ. *Journal of Educational Psychology*, 98, 457e468. <http://dx.doi.org/10.1037/0022-0663.98.2.457>
- *Slater, J., Strait, D. L., Skoe, E., O'Connell, S., Thompson, E., & Kraus, N. (2014). Longitudinal effects of group music instruction on literacy skills in low-income children. *PLoS ONE*, 9. <http://dx.doi.org/10.1371/journal.pone.0113383>.
- Shermatova, X. (2021). A look at the music education in schools: forms and methods of music education. *Current Research Journal of Pedagogics*, 2(10), 253-258.
- Slevc, L. R., Davey, N. S., Buschkuehl, M., and Jaeggi, S. M. (2016). Tuning the mind: exploring the connections between musical ability and executive functions. *Cognition* 152, 199–211. DOI: 10.1016/j.cognition.2016.03.017.
- Tsang, C. D., and Conrad, N. J. (2011). Music training and reading readiness. *Music Percept.* 29, 157–163. DOI: 10.1525/mp.2011.29.2.157.
- Yunusov, G., Ahmedov, R., Jurayev, I., & Yuldasheva, S. (2021). A Look At The Folklore of Fergana Valley or History of A Song in The Series of Tanovar. *Annals of the Romanian Society for Cell Biology*, 25(6), 2225-2232.
- WebDesk (2022,November 22). JUI-F opposes the Sindh govt's decision to recruit music teachers in schools. <https://www.nation.com.pk/22-Nov-2022/jui-f-opposes-sindh-govt-s-decision-to-recruit-music-teachers-in-schools>
- Web Desk (November 18, 2022). Sindh to recruit music teachers in govt schools in BPS-14. <https://arynews.tv/sindh-recruit-music-teachers-govt-schools-bps-14/>

Wetter, O. E., Koerner, F., & Schwaninger, A. (2009). Does musical training improve music performance? *Instructional Science*, 37, 365e374. <http://dx.doi.org/10.1007/s11251-008-9052-y>