



## FOSTERING COGNITIVE AND SOCIAL DEVELOPMENT THROUGH MUSIC INSTRUCTION IN WINNEBA KINDERGARTEN SCHOOLS

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**ABSTRACT:** Numerous scholarly inquiries have underscored the influential role of music in the educational and developmental journey of young children. Musical engagements have demonstrated a capacity to foster intellectual, social, and multifaceted personal growth, including the cultivation of foundational reading skills such as heightened aural discrimination of sounds and letters. This study presents an exploration of the impact of musical activities on the developmental trajectory of kindergarten children in the Winneba community, with a particular focus on their intellectual and social growth. Grounded in the qualitative paradigm, the research employed a case study design, utilizing interview, observation and Focus Group Discussion (FGD) for data collection from a purposive sample which comprised four (4) teachers and twenty (20) kindergarten children. The findings revealed that while the primary intention behind organizing musical activities in the kindergarten classroom was to infuse joy and energy, these endeavors unwittingly yielded significant positive impacts on intellectual, social, and personal developmental domains. It is anticipated that educators will adopt a more purposeful approach to music pedagogy, expanding beyond traditional singing and dancing activities to incorporate instrument playing and active listening practices.

**KEYWORDS:** Winneba, Kindergarten, Music, Intellectual, Social, Child development.



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## INTRODUCTION

Musical activities have long been recognized as influential factors in the growth and development of children, impacting various facets of their intellectual, social, and overall personal growth. Indeed, participation in music during youth correlates with higher rates of academic achievement, including increased matriculation into medical schools (Cooper, 2003). Moreover, research suggests that engagement in musical pursuits is associated with reduced instances of substance abuse and disruptive classroom behaviors (Texas Commission on Drug and Alcohol Abuse, 1999). Reflecting societal attitudes, a Gallup Poll highlighted by the American Conference revealed that an overwhelming 95% of Americans advocate for music's integral role in a child's comprehensive education, advocating for its inclusion as a mandatory component in school curricula. Additionally, findings by Schlaug et al. (1995) suggest that active involvement in music can induce cortical reorganization, potentially leading to enduring functional changes in information processing within the brain, particularly if initiated during early developmental stages. These insights underscore the profound impact of musical engagement on cognitive and behavioral development, emphasizing its significance in fostering holistic growth among young individuals.

A study on Western classical musicians by Bae et al. (2014) has revealed compelling insights into the neurological adaptations associated with prolonged engagement in specific musical activities. Notably, extensive involvement in musical practice has been associated with the improvement of neuronal representations dedicated to processing the tones comprising the musical scale, with musicians who have dedicated significant years to instrumental training exhibiting the most extensive cortical representations in this regard (Olszewska et al., 2021). For instance, string players demonstrate prolonged surveillance and a more frontally distributed attentional response during pitch processing, while drummers exhibit enhanced memory traces concerning the temporal organization of musical sequences (Munte et al., 2003). Conversely, conductors exhibit heightened auditory spatial surveillance, reflecting the unique cognitive demands associated with their role (Meissl et al., 2022). These findings underscore the remarkable capacity of music lessons to induce specialized neuroplastic changes tailored to the demands of specific instrumental expertise, exploring the intricate dynamics between musical engagement and brain activity.

The profound effect of music on child development has been extensively documented and validated. However, critical questions arise regarding whether kindergarten children in Winneba benefit from these developmental advantages and what specific musical activities are employed to foster their personal, social and intellectual growth. Despite the recognized importance of musical engagement in shaping brain development, the precise nature and extent of activities involving music in Winneba kindergarten classrooms remain unknown. For example, it remains unclear which facets of musical engagement—singing, playing, improvising, performing, or exploring musical literature—are emphasized in these educational settings. As highlighted by Paney and Buonviri (2014), the techniques and strategies employed to cultivate musical abilities play a pivotal role in shaping brain development and consequently dictate the effectiveness of skill transfer across different areas. Therefore, an in-depth review of relevant literature, coupled with a detailed exposition of data collection methods and processes, is necessary to elucidate the specific landscape of musical learning and its ramifications for kindergarten children in the Winneba



community. This study provides insights into the contextual dynamics of musical education and its implications for development of children in Winneba kindergarten schools.

## **REVIEW OF RELATED LITERATURE**

Hargreaves et al. (2003) indicated that numerous studies across disciplines such as music education, psychology, and sociology have attempted to elucidate the significance of music in fostering intellectual development, with a focus on various cognitive and social outcomes. For example, Bodner et al. (2001) have emphasized the organized neuronal framework of the cortex and its influence on spatial-temporal scores, a phenomenon commonly referred to as the "Mozart effect." Specifically, exposure to Mozart's music prior to undertaking abstract spatial reasoning tests has proved to enhance performance, particularly among college students (Jenkins, 2001; Overy, 1998).

Despite these findings, there remains a dearth of research that contributes to how music in the African classroom could provide a positive effect on the development of the African child. While arousal and mood have been identified as mediating factors in the music-cognition relationship (Thompson et al., 2001), the stimulation of cognition through music listening has been well-documented (Demarin et al., 2016), with music training further bolstering this effect, particularly in mathematical domains (Gromko, 2005). The literature suggests that exposure to classical music holds potential for enhancing the intellectual abilities of children.

### **Cognitive Abilities, Sensory Perception and Linguistic Proficiency**

Hallam (2010) explored the intricate relationship between musical engagement and growth of perceptual and language skills, drawing on insights from various scholars (Humpal & Wolf, 1992). Music is seen as a potent tool for cultivating listening skills, particularly beneficial for children facing learning challenges in mainstream educational settings. Blakemore and Frith (2000) suggested that much learning occurs unconsciously, with vast amounts of information processed rapidly during music or speech listening. This processing efficiency is influenced by not only prior musical and linguistic experiences, but also culturally ingrained tonal schemes or languages. Hallam contended that participation in musical activities provides experiential learning that enhances processing abilities, consequently impacting language perception and reading skills. Schon et al. (2004) posited that musical training influences the cortical processing of patterns of language intonation, with noticeable effects emerging quickly, even in young children. Experimental studies, such as Flohr et al. (2000), demonstrated that children exposed to musical training exhibit enhanced cognitive processing with increased cognitive activity.

Moreover, the initial associations between musical aptitude and phonemic pitch awareness imply a connection that links musical skills and the discernment of nuanced phonetic differences in language. Musical abilities predict variations in phonetic contrast perception in acquiring second language and reading abilities in first language development (Slevc & Miyake, 2006). However, while research underscores the potential significance of music learning on language perception and cognitive processing, it raises questions about how these activities are implemented for



kindergarten children in Winneba. How do they engage with musical activities provided by their teachers, and what specific benefits do they derive from these experiences? Gromko (2005) indicated after studying kindergarten children:

Participation in music instruction has demonstrated significant improvements in phonemic awareness among children. In a study where children received four months teaching in music for thirty minutes, held once in a week, the curriculum emphasized active music-making and kinesthetic movements to reinforce steady pitch, beat and rhythm, alongside associating sounds with symbols. Enhanced phonemic awareness appears to stem from the capacity to recognise and connect tonal and rhythmic patterns with visual representations (26).

Therefore, it is crucial for listeners to discern the resemblance in intonation patterns when spoken at various pitch levels. Consequently, engaging with music significantly contributes to the development of perceptual processing systems, aiding in the encoding and recognition of speech sounds and patterns. Early exposure to active music participation, especially for longer durations, can have a substantial impact on kindergarten children's development.

### **Instrumental Practice and Acquisition of Language in Early Education**

Fougerousse (2023) investigated how learning the piano could affect vocabulary and verbal sequencing in second-grade children. Forty-six children participated in a piano-learning intervention programme for three consecutive years, while 57 children did not. The group learning music demonstrated significantly better vocabulary and verbal sequencing scores. At the study's outset, the music group had already been learning piano for two years, yet there were no differences in reading skills when compared with the control group. The authors speculated that it might take a considerable amount of time for the effects to manifest. Additionally, changes in instruction and growth of fluency in reading music could have influenced transfer effects. This underscores the crucial role of teachers in ensuring that music has a substantial impact in kindergarten classrooms, thereby fostering the social, intellectual and personal growth of pupils.

Furthermore, Santos-Luiz (2007) found out the effects of various types of musical activities on at-risk early grade pupils. Five (5) groups had an instruction in piano, singing, rhythm, computer-based activities, or no training for two years. After receiving instruction, the three groups involved in music activities achieved higher scores on tasks related to mental imagery when compared with the control groups. Among them, the rhythm group notably outperformed others on tasks assessing mathematical ability. These results indicate that training in rhythm is vital for the growth of cognition and mathematical abilities, while improved perceptual skills associated with pitch and melody contribute to language development. Collectively, these studies indicate that active engagement in music-making can positively impact intellectual development.

### **Music Participation on Social Skills Development in Children**

It is widely acknowledged that music serves as a universal form of expression and communication, ingrained in the daily lives of individuals across cultures and age groups, as supported by Feld (1984). Anthropological and ethnomusicological research by scholars like Blacking (1976) suggest that music has been an integral aspect of human existence for millennia, with the potential



for musical behavior being inherent in all individuals. Thompson et al. (2023) and have noted that individuals' musical inclinations are shaped by their environment and experiences, often within social groups. Activities such as listening to music, singing, playing instruments (both informally and formally), and creating music (through exploration, composition, improvisation) are commonplace among people, both individually and collectively. Music serves not only as a source of pleasure but also exerts a profound influence that extends beyond mere entertainment.

It is worth noting that taking part in activities involving music allows individuals to express their inner thoughts and emotions while also yielding numerous positive effects. Schellenberg (2020) demonstrated how musical training can enhance sound encoding during infancy and adolescence, with varying impacts influenced by contextual factors and individual differences. Consequently, younger pupils, including those in kindergarten, can socially benefit from musical activities. Collaborative teamwork, the freedom to express oneself musically and the growth of confidence through music-making activities all contribute to the holistic development of children who actively participate in musical pursuits.

## **METHODOLOGY**

The research adopted a qualitative approach utilizing the case study research design, as outlined by Payne et al. (2007), which involves an in-depth exploration of a specific case within its real-world context. In this instance, the focus was on kindergarten (KG) learners in Winneba. A total of 20 kindergarten children and 4 kindergarten teachers from a single school were selected using convenience sampling. The 4 teachers, comprising 2 from KG 1 and 2 from KG 2, were purposely chosen as they constituted the entire KG teaching staff at the school. Among the KG 2 learners, totaling 20, there were 9 girls and 11 boys. KG 2 was selected for its greater language development compared to KG 1, enabling the children to articulate their experiences gained in music and their developmental outcomes.

Data collection was done through interviews, observations, and Focus Group Discussions (FGDs). Interviews were conducted with each kindergarten (KG) teacher in their respective offices to explore the types of musical activities conducted in class and their perceived impacts on children's personal, intellectual and social development. Approximately one hour was spent on each of the teachers for the interview session. Additionally, classroom activities with a musical focus were observed, with a particular emphasis on how teachers facilitate learning during practical activities.

Furthermore, children were organized into groups of five for interactive sessions and FGDs. These discussions aimed to capture the children's perspectives on musical activities, including their experiences with singing, playing instruments, and dancing, in addition to their emotional responses during these activities. Topics explored bothered on how music influences language retention and vocabulary acquisition. It also highlighted how music affects intellectual and social development, teamwork, independence, and discipline. Using these qualitative methods, we thoroughly explored the impact of music in the kindergarten classroom, shedding light on its influence on children's intellectual and social development.





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## DISCUSSION OF FINDINGS

The study focused on assessing the positive impact of activities relating to music on kindergarten (KG) children's intelligence, social, and personal growth, including attributes like teamwork and discipline. It aimed to identify the types of musical activities commonly practiced in KG classrooms. Observation findings, corroborated by interview responses, revealed that the predominant musical activities conducted by teachers in KG classes were singing and dancing. This suggests a lack of emphasis on listening, conceptualization, and instrument playing in these classrooms. While children, during Focus Group Discussions (FGDs), reported strong memory skills, the absence of listening and instrument playing may have limited their intellectual and language development potential.

Research suggests that music instruction can enhance verbal memory, potentially benefiting reading skills. For instance, Price-Mohr and Price (2021) demonstrated that being taught to play a musical instrument improves word retention. Therefore, introducing listening and instrument playing activities could have further bolstered the KG children's memory abilities, contributing to their overall cognitive development. One of the teachers complained about the state of instruments in the school:

We don't have the musical instruments, because of that, we in the KG classrooms improvise by utilizing the children's tables as makeshift percussion instruments, creating beats for musical activities. However, the primary focus remains on engaging the children in singing and dancing, with the belief that this fosters happiness and enthusiasm among the students, encouraging their active participation and eagerness to partake in more musical activities.

Indeed, the emphasis on fostering happiness and engagement through singing and dancing in musical activities is important. Nevertheless, it is imperative to acknowledge the potential advantages of actively engaging in instrument playing, especially concerning academic skills like writing and reading. So, integrating intentional strategies into music education holds promise for enhancing children's development, fostering not just happiness and involvement but also academic competencies like writing and reading. One of the teachers indicated:

It is understandable that as non-music professionals, we use the songs we are most familiar with to engage the children, particularly when they need to energize and move their bodies. Using rhyming songs for activities is an effective way of keeping them engaged, and it's impressive that they remember the words so well. While we may not have access to formal musical training or instruments, our creative approach to incorporating music into the classroom environment is undoubtedly beneficial for the children's overall development and enjoyment.

It is clear that all the teachers share the belief that the singing and other musical activities they incorporate into the classroom environment contribute significantly to the children's intellectual engagement. They noted that activities involving mathematical thinking particularly yield impressive results in numeracy skills. This observation aligns with the thoughts of Incognito et al. (2022) after exploring the impact of a music programme on the mathematics achievement of preschool children. The research findings indicated that children participating in musical activities demonstrated superior performance on mathematics achievement tests compared to those used as



the control group, with the influence of home musical background being acknowledged as a potential contributing factor. Similarly, Holmes (2017) concluded that children participating in an arts programme exhibited better performance in mathematics, with those involved for longer durations achieving the highest scores overall. These studies collectively highlight the positive correlation of musical engagement and mathematical proficiency in young children.

Unfortunately, the kind of activities done in Kindergarten in the Western world regarding musical activities to impact on their intellectual development are not the same as that of Winneba. For instance, in a research by Rauscher et al. (1997), children from diverse preschool backgrounds were divided into different instructional settings: music, computer, or groups without instruction. Those in the music instruction groups participated in sessions involving keyboard and group singing, solo group singing, or computer lessons, with daily singing sessions lasting 30 minutes. Remarkably, children belonging to the keyboard group demonstrated significantly higher scores in spatial recognition tests compared to their peers. The consistent findings suggest a near transfer effect, possibly attributed to the skills acquired during music lessons.

The teachers unanimously agreed that musical activities contribute significantly to the social development of the children. They noted that these activities encourage the children to play together with their friends and foster strong social bonds among them. One of the teachers gave an example of a child purported to be an introvert in the class and said:

In fact, musical activities we do in the class have magically transformed child A to mingle with their friends. Their parents were here to ask us how we did it and we told them that we make them sing together and dance together with their friends. Consistently doing this has changed him now to socialize well with his friends.

It is remarkable how convinced the teachers were about musical activities having had such an impact on the child's social development. The transformation is truly remarkable. By engaging in singing and dancing activities with their friends consistently, the introverted child has become more comfortable and confident in socializing with others. This highlights the powerful role that music plays in fostering social connections and enhancing interpersonal skills. Indeed, the impact of music on social development has been widely recognised by scholars. Broh (2002) highlights that children engaged in musical activities tend to engage in more communication with both parents and teachers. Additionally, their parents are more inclined to communicate with the parents of their children's friends. These social interactions not only contribute to advanced self-esteem in children but also foster increased motivation, self-efficacy, teamwork, and confidence.

One of the teachers indicated:

The children are able to interact with us more when we engage them in singing activities. We deliberately ask them to sing to us when shyness is detected among any of them; and by doing so, they come out and talk to us. As time goes on, you realize that they express themselves freely.

This means that engaging children in singing activities has proven to be an effective way to encourage interaction and overcome shyness. By prompting them to sing, especially when shyness is observed, teachers provide a supportive environment for children to express themselves. Over



time, this practice helps children become more comfortable and confident in expressing their thoughts and feelings, ultimately leading to more open communication and interaction with their teachers.

In the nutshell, the use of musical activities, initially intended for fun and invigoration, has unexpectedly fostered various positive outcomes among the children. Notably, it has instilled confidence in them to perform in front of others, facilitated effective group work, and enabled them to study and express themselves more freely. Musical activities have facilitated the development of friendships among like-minded individuals, contributing to a sense of belonging and social cohesion among the pupils. Furthermore, the participation of children in group music activities has encouraged mutual support, commitment, and bonding towards common goals, as observed by Sward (1989). Overall, these experiences highlight the broader social benefits of including music into early childhood education.

## CONCLUSION

Indeed, the impact of musical activities on children in the KG classroom extends beyond intellectual and social development. These activities also foster motor coordination, concentration, self-confidence, and self-discipline. By engaging in music-making activities, children develop a strong sense of belonging, forge friendships with like-minded peers, enhance their social skills, and cultivate a robust sense of self-esteem and satisfaction. However, in the KG class in Winneba, as observed in the selected school, musical activities are currently limited to singing and dancing. This narrow focus deprives the children of the full spectrum of benefits that music can offer. While the intention behind these activities is primarily for enjoyment, they inadvertently yield positive impacts that music inherently brings. It is evident that participating in musical activities can enhance personal skills, identity, and self-achievement, fostering self-confidence and intrinsic motivation.

Finally, to increase the benefits pupils derive from music education, it is recommended that teachers purposefully design musical activities to target specific skill development areas. This involves consciously selecting appropriate activities that align with desired learning outcomes. Imperatively, musical activities should be diversified to include instrument playing and listening, providing children with broader opportunities to enhance perceptual skills, motor coordination, literacy acquisition, self-esteem, self-efficacy, and aspirations. By embracing a holistic approach to music education, KG children can acquire lifelong skills and experiences that enrich their overall development.






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