

Adapting the Sounds of Intent Framework in Bolivia: Assessing Musical Growth Across Ability and Culture

International Journal of
Music Education
1–15

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DOI: 10.1177/02557614261428084

journals.sagepub.com/home/ijm



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Abstract

This study examined the musical development and lived experiences of four children with exceptionalities. It took place in a children's home (*hogar*) in Bolivia—a residential care setting for children with exceptionalities—through their participation in a Christmas-themed performance. Guided by a transformative approach, the researchers aimed to promote inclusion while amplifying the voices of marginalized children. Data sources included video recordings and field notes. The Sounds of Intent framework was used to gauge musical engagement across rehearsals and the final performance. Findings revealed individualized and collective growth in interactive musical responses, some of which might have gone unnoticed with observation notes alone. A powerful moment of collective interactive engagement occurred during the final performance, adding to the evidence base for the social benefits of collaborative music-making for people with diverse abilities and needs. Also, interview responses indicated participants' positive emotional experiences, supporting the use of accessible resources to facilitate expressive communication. Overall, this study evidenced the use of participatory, child-centered strategies to impact the musical and social development of people with diverse abilities, including in underrepresented cultural contexts.

Keywords

inclusive music education, music assessment, PECS (Picture Exchange Communication System), Sounds of Intent, special music education, transformative research

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Introduction

Assessment plays a critical role in music education, helping to provide insight into students' musical progress while informing pedagogical decisions (Brophy, 2019; Elliott et al., 2019; Welch et al., 2009). In many contexts, music assessment procedures have been aligned with musical developmental phases and standardized learning outcomes (Burbach & Parkes, 2019; Shaw, 2023). However, recent international scholarship has called for more holistic and culturally responsive approaches to assessment, encompassing the complexity and diversity of musical learning—frameworks that are more inclusive, adaptable, and context-sensitive (Ferm Almqvist et al., 2017; Haning & Lehmann-Wermser, 2024). Global trends have emphasized a need for musical assessment frameworks that are both reliable, ensuring validity and consistency; and flexible, allowing adaptation across pedagogical and cultural settings (Brophy et al., 2021). The Sounds of Intent framework (Sounds of Intent, 2025) aligns with this demand by focusing on how musical behavior develops in a variety of contexts, particularly for neurodivergent learners (Ockelford, 2008). Rather than serving as a measure of fixed achievement, this framework has supported music practitioners in understanding how children engage musically and how that engagement can be further expanded (Cheng et al., 2009; Ockelford, 2008). The current study adapted and applied the SoI framework within a special music education context in Bolivia to support inclusive musical learning across cultural and cognitive differences.

Background

Musical development has long been understood as a complex, multifaceted process shaped by cognitive, emotional, social, and cultural differences (Broughton & Costa-Giomi, 2023). While earlier development models framed musical learning in terms of developmental stages or fixed sequences (Gordon, 2012; Swanwick & Tillman, 1986), more recent perspectives have emphasized its dynamic and context-sensitive nature (Hargreaves, 2023). For example, Hargreaves and Lamont (2017) detailed the interplay of musical skills, emotional expression, and social interaction across the lifespan. Similarly, updated reflections on Swanwick's spiral (Swanwick & Tillman, 1986), suggest that development can be recursive, rather than strictly linear, and can be shaped significantly by learners' cultural and social environments (Swanwick, 2022; Welch, 2022). These evolving views have fueled the search for frameworks that acknowledge diverse developmental trajectories, particularly for people whose musical growth may not conform to normative expectations (Welch, 2022). Hence, there has been an increased interest in instruments that provide structure while also remaining responsive to varied learner profiles (Brophy et al., 2021).

Scholars have emphasized the importance of adapting evaluative tools for varied student abilities and cultural backgrounds (Elliott et al., 2019; Hambleton et al., 2005). Comparative studies across nations—including Brunei, Ghana, Canada, China, and the U.S.—have supported how teachers' assessment practices are shaped by their specific contexts, local educational values, and policies (Asamoah et al., 2023; DeLuca et al., 2021). Subsequently, researchers have pointed to the necessity of developing assessments that are both reliable and adaptable, as well as sensitive to the individual, thus making them more capable of addressing diverse student backgrounds while maintaining pedagogical integrity (Brophy, 2019). This process becomes more complex when working with students with exceptionalities, who may require individualized strategies for both instruction and evaluation (Adamek & Darrow, 2018; Jellison, 2015). The concept of Universal Design for Learning (UDL; Moore et al., 2007; Rose & Meyer, 2002) has been promoted as a framework that allows diverse learners to express their learning using various means, thus facilitating flexible assessment for teachers, including within the arts and music education (Adamek & Darrow, 2018; Glass et al., 2013; Jellison, 2015). However, a recent "loving critique" of the framework, a term

used by Hess (2023), has cautioned how it may still encourage teachers to anticipate learner differences, thus leading them to imagine disability through stereotypical and often harmful cultural narratives. Taken together, these concerns have highlighted the need for a model that reflects a wide range of musical engagement across both cultural and ability differences.

The Sounds of Intent Framework

The Sounds of Intent (SoI) framework emerged from decades of research aimed at understanding and supporting the musical development of children with diverse abilities (Cheng et al., 2009; Ockelford, 1991; Lisboa et al., 2021; Welch et al., 2009). The Sounds of Intent research project was prompted by the PROMISE Project in the UK (Welch et al., 2001), which demonstrated widespread benefits of music participation for 2,758 students in 53 special schools. Data from school surveys also indicated a need for clearer guidance on how to ensure the most effective musical experiences for the students, prompting the development of the SoI project in two phases of research (Ockelford, 2008). The first phase involved observational studies focused on categorizing musical behaviors along developmental lines. In contrast to conventional models that begin with typical development and extend into neurodistinct avenues, SoI implemented a reverse strategy. It first identified exceptionalities, particularly among students with profound or multiple learning needs, and later tackled what was considered more usual. The second phase involved empirical research to validate these findings and explored their practical application in diverse music settings. These efforts led to the development of the SoI framework, including its current online version, which was tested extensively before public release (Sounds of Intent, 2025).

The Sounds of Intent framework is a developmental model of musical behavior structured across three domains and six developmental levels (see Figure 1). It is intended to help music educators, therapists, and families understand and support the musical development of a wide range of abilities in diverse settings (Ockelford, 2008; Sounds of Intent, 2025). By organizing musical behaviors across three primary domains—reactive, proactive, and interactive—distinct yet overlapping modes of engagement can be recognized. While SoI has generated significant international interest and informal use outside of the UK (Ockelford, 2005/2019; Ockelford & Zapata Restrepo, 2011; Wilde et al., 2016), published research on its use in global contexts remains limited, offering valuable opportunities for further study. Together, these gaps point to the need for research examining how SoI can be used to understand musical participation across diverse abilities and cultures.

Study Context and Purpose

In Bolivia, inclusive education is promoted through the *Sistema Educativo Plurinacional* (SEP), which mandates decolonized, intercultural, and community-responsive pedagogies to students of all ability levels (Ministerio de Educación, 2017). Music education is included within Bolivia's Ministry of Education curricular program as a means of achieving holistic development and cultural expression, and advocates for the use of regional instruments, folk traditions, and participatory activities in classrooms (Ministerio de Educación, 2025). In this article, *participatory* refers to inclusive musical engagement with active involvement by all children, teachers, and facilitators, consistent with Bolivian inclusive education policy. Additional foundational policy documents, such as the *Documentos Curriculares de Educación Especial* (Ministerio de Educación, 2023), provide clear guidance for tailoring curricular content, objectives, and assessments, specifically to support students with exceptionalities. However, despite these progressive policy guidelines, implementation challenges persist. Teachers often face barriers—insufficient training, limited access to tools and materials, and a lack of institutional support—which are especially prevalent in

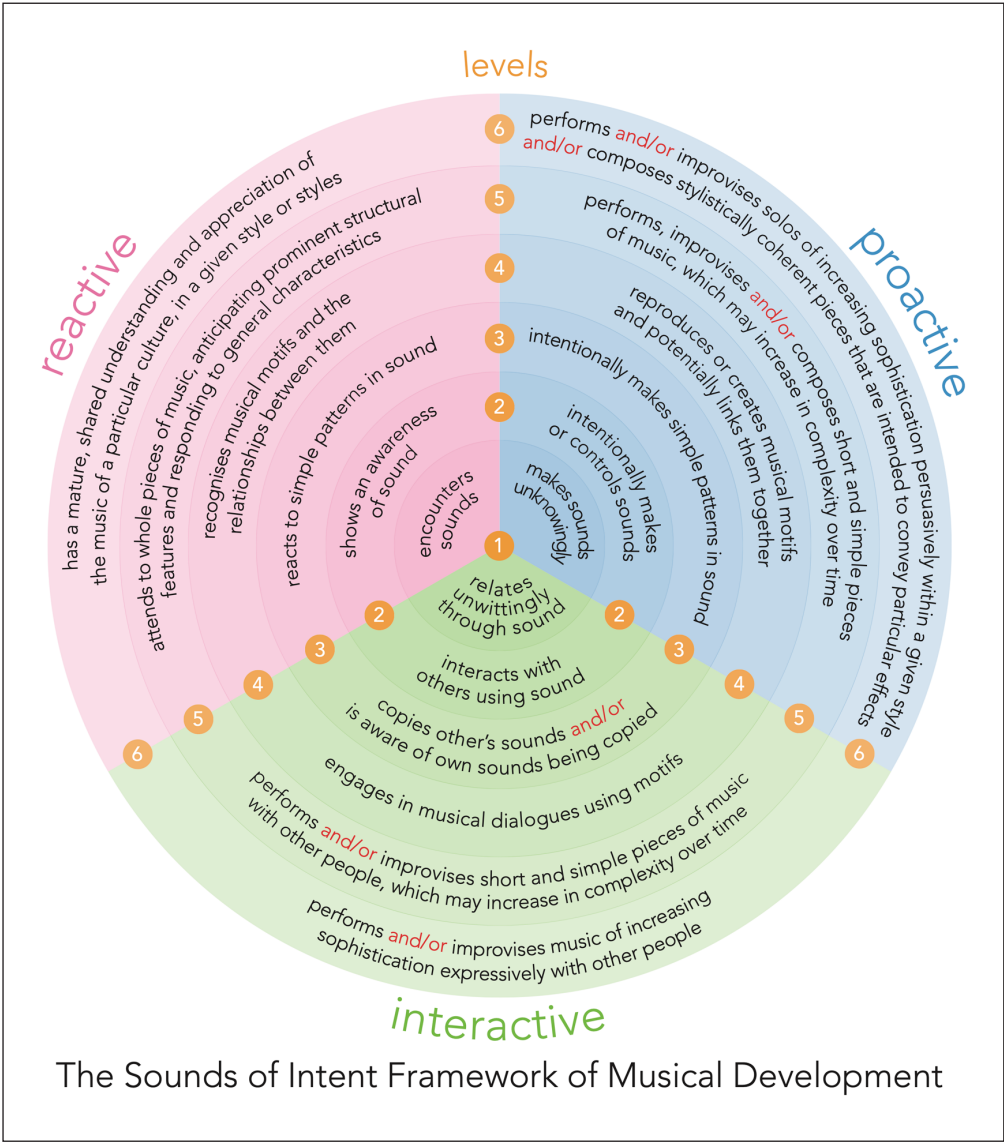


Figure 1. The sounds of intent circular figure with domains and levels.
Note. The three domains of musical engagement are reactive, proactive, and interactive. Each domain is further broken down into six developmental levels.

rural and under-resourced regions (UNICEF, 2018; World Bank, 2024). According to a UNICEF (2022) report on child poverty in Bolivia, educational disparities are further exacerbated by broader socioeconomic inequalities, and children with exceptionalities remained among the most marginalized in Bolivia's education system, facing factors like extreme poverty and social exclusion. This uneven educational context offers an opportunity to develop and explore inclusive educational models that are both culturally relevant, individually sensitive and focused on equity.

As music education has (hopefully) shifted away from linear developmental models, there has been a growing need for assessment approaches that focus on cultural responsiveness and inclusion of children with exceptionalities (Brophy et al., 2021; Haning & Lehmann-Wermser, 2024). In this article, *children with exceptionalities* will be used as an inclusive umbrella term, while other terminology appears sparingly as used in scholarly, historical, and policy contexts. International researchers have highlighted how assessment practices have been shaped by sociocultural contexts and stressed a need for standardized tools that adapt to honor local values, educational goals, and student experiences (Asamoah et al., 2023; DeLuca et al., 2021). This is especially necessary in settings like rural Bolivia, where it is reported that children with exceptionalities have been excluded from formal music learning and assessment (UNICEF, 2022). While this study centers on inclusive music education, it is framed methodologically through assessment. Specifically, the SoI framework was used to document and interpret musical development within an inclusive, culturally diverse music-making context where conventional music assessments are seldom used or are inappropriate. Assessment, therefore, functioned not as an end in itself, but as a means of making musical engagement and growth visible across ability and culture. Arguably, centering these children's voices in both the design and interpretation of music education studies was also necessary, informative, and meaningful (Grimsby, 2025; Yinger et al., 2023). Therefore, the purpose of this study was to assess the musical growth of children with exceptionalities in Bolivia using a flexible, inclusive framework, while exploring how the children themselves felt about the music learning and final performance. Specific questions were:

RQ1: How did children with exceptionalities in Bolivia grow musically through the performance preparation process?

RQ2: What meanings and feelings did children associate with the performance preparation and presentation process?

Method

This project employed a nested case study approach informed by a transformative paradigm. Four children's individual cases were explored and nested within a larger case study—a week-long music education program for children with exceptionalities in a rural Bolivian children's home. While this study did not utilize a transformative research methodology in the strictest sense, it was informed by a transformative approach, which helped to reflect values of inclusion and equity while aiming for social change (Mertens, 2009). This orientation also aided in centering the voices of children with exceptionalities who have been excluded in music education research and marginalized in Bolivian society (Mertens, 2009; UNICEF, 2022; Yinger et al., 2023). Although this study employed mostly qualitative methods, it integrated data with quantitative characteristics, such as numerical labels and frequency counts for the SoI assessment. As clarified above, SoI was used as a flexible, engagement-focused framework applied within a specific cultural context, rather than as a prescriptive or universally linear developmental model.

Participants and Context

Though the study focused on the experiences of four children, the broader project involved a range of primary and secondary participants. Primary participants included 30 children with a range of differences, all residing at a children's home (i.e. *hogar*) in rural Amazonian Bolivia. Secondary participants were 21 staff members at the home—administrators, therapists, aides, nurses, cooks,

chauffeurs—who contributed to the children’s care and development and helped support the project through their everyday roles. All participants made up a convenience sample due to their residence or employment at the home, where the research team had an established connection (cf. Creswell & Creswell, 2018). To best represent the children’s voices, the study focused on the perceptions and musical growth of four young people with diverse abilities who are presented using pseudonyms—Lili, Eva, Diego, and Vicki. The four were selected using *criterion-based case selection* (Patton, 2015), since they all had diagnosed exceptionalities, resided at the Bolivian children’s home, and were involved consistently throughout the duration of the study, including the final interviews. The children’s home where the study took place functioned as a residential orphanage for children with exceptionalities. It served not only as a residence, but also as an educational and therapeutic setting. Founded in the Catholic faith, religious practices were integrated into daily routines. To uphold the community’s traditions and align with the children’s existing celebrations, this project was designed to be a Christmas-themed musical performance.

The musical experiences of four children were central to this study. Rather than emphasizing their diagnostic labels, participants are described through their observed musical behaviors in their music-making context. Lili, an 11-year-old girl, was known for her ever-present smile and gentle, consistent presence in group activities. Sometimes appearing distracted, she remained involved throughout the project and brought a quiet warmth to the group, smiling at peers while participating in shared activities. Eva, 15, was affectionately known as “la mamá” by peers and staff because of her mature, caring role she assumed within the group. Highly responsible and self-directed, she often took initiative in both rehearsals and daily routines. Musically, Eva was the most advanced, demonstrating confident improvisation, singing on pitch, and performing steady rhythms from the first day. Diego, 13, was soft-spoken and rarely vocalized, though he communicated through kind and respectful behavior. Although he sometimes seemed disengaged during music sessions, he remained consistently kind and present and, outside of class, he was a strong athlete and enjoyed playing soccer with peers. Vicki, a 12-year-old girl, was always smiling and brought a consistently positive spirit to the group. During music sessions, she sometimes paused in a distracted state but consistently returned with a gentle focus, evident in her steady eye contact and playing of her instrument.

Procedure

Before beginning the study, international ethical approvals were obtained through the relevant institutional review processes in the United States and Bolivia. This included approvals from a U.S. university, a Bolivian university, and a Bolivian government agency. Upon arrival to the children’s home, all children and staff signed consent forms. Staff members ($n=21$) received a consent form translated to Spanish, which was passed out and collected by the home’s director. The children ($n=30$) were divided into five groups of six children and used a modified consent form. At the top was the question, “¿Quieres participar?” (i.e. “Would you like to participate?”) accompanied by Picture Exchange Communication System (PECS) symbols—a thumbs up for “yes” and thumbs down for “no.” This allowed children to mark or circle their response, and assistance from a staff member was provided if needed. Children also signed their name and date, with assistance as needed. The director explained the project purpose to the children in simple terms, and each child was also asked verbally if they wished to participate in front of two adult witnesses. All children gave their consent to participate.

Following consent collection, children took part in a musical pre-assessment within their same small groups of six. They were asked to sing along to a favorite song to assess pitch matching, tap a beat to the same song for beat accuracy, and echo rhythm tapping on tambourines for rhythmic imitation accuracy. This brief assessment helped gauge each child’s musical strengths eliciting behaviors in the proactive, and in some contexts, interactive domains of the SoI framework. Hence,

these activities helped to provide a baseline of musical engagement at the very start of the project. Based on their musical responses and general engagement, the children were placed in one of three character groups—shepherds, animals, or angels—each designed to provide musical and dramatic opportunities for a range of abilities.

Each group rehearsed once or twice daily for 7 days leading up to the final performance. Rehearsals involved collaborative music making experiences, such as taking turns on specific instruments, group call-and-response on instruments, and ensemble playing. The children also practiced dramatic responses to auditory cues (e.g. bowing heads upon hearing a triangle). Each child was assigned a costume and one percussion instrument, either pitched or unpitched, that they used throughout the remainder of the rehearsals and final performance. Due to time constraints, only some children received brief individualized coaching on their instrumental part, and this included two of the four children from this study—Diego and Eva. In the last two rehearsals, the Spanish narration of the Christmas story was read by an adult volunteer in simple terms, ensuring all participants could follow the storyline and connect with the drama.

We presented the musical drama on the Lion's Club stage in the town's central square on December 23, 2023. Around 100 community members attended, in addition to the children and staff. The final performance lasted approximately 20 min. Each of the three character groups—shepherds, animals, and angels—had their moment to shine with a musical number that integrated instrument playing, singing, and dramatic movements prompted by auditory cues from the narration. The performance was video recorded for later analysis. Immediately following the event, the participating children took part in interviews to capture their impressions of the project. These children were selected according to who was present in the theater's house at the time. Several forms of data were collected across the project, including 8 hr and 41 min of video recordings (capturing rehearsals, the final performance, and child interviews), 42 pages of field notes, and SoI assessment data. The SoI assessment data consisted of observational ratings of children's musical behaviors, aligning with the domains and developmental levels of the Sounds of Intent framework.

Data analysis comprised of two distinct coding cycles using NVivo software. The first cycle followed an inductive approach to identify emergent patterns in the children's musical behaviors and spoken/unspoken expressions (Miles et al., 2020). Code groups captured musical progress, emotional responses, and interpersonal interactions for each interviewed child across rehearsal and performance footage. This was cross-referenced with field notes, interview responses, and SoI assessment data. In the second cycle, patterns emerged while coding categories compressed to align with the research questions, leading to two code categories for each child—"feelings" and "progress."

Ethical Considerations and the Researchers' Role

Ethical considerations were central to the design and implementation of this project, especially considering the vulnerable population and international context. Throughout the fieldwork, care was taken to remain sensitive to the children's comfort and need for respect, with approaches and plans adjusted as needed to ensure that the children's voices and participation were genuinely valued. Reflexivity played a central role, as the research team consistently reflected on issues of positionality, including relationships to the children's home and roles as music educators and researchers (Allen et al., 2019). This awareness informed the interpretive lens, helping to balance insider (*emic*) perspectives of the children's lived experiences with outsider (*etic*) viewpoints grounded in scholarship (Patton, 2015). Triangulation between video observations, field notes, interview data, and SoI assessments further supported credibility in findings. Though member checking was not feasible due to the nature of the project and participants' communication needs, every effort was made to portray the children's experiences with integrity and care.

Results

The following results highlight aspects of the children's musical growth alongside their personal reflections on the project experience. A transformative lens was utilized through the analysis, prioritizing the children's unique experiences and related to the project's broader aim toward social change (Mertens, 2009). Aligned with this orientation, while also seeking to fulfill a pressing need within music education research, the children's voices and lived experiences remained central (Grimsby, 2025; Yinger et al., 2023). Results are organized by research question, first focusing on musical development using the SoI framework and then exploring the children's thoughts and feelings. Following the results for the two research questions is a third subsection, which presents an emergent finding related to the collective impact of interactive music making.

Tracing Musical Development Through Sounds of Intent

The SoI framework served as the assessment instrument to gauge each child's musical behavior and development. Within the model, musical engagement was categorized across three domains—reactive, proactive, and interactive—each progressing through six developmental levels. Data were noted utilizing the format domain.level (e.g. P.3 for Proactive Level 3 and I.5 for Interactive Level 5). Video recordings of all the rehearsals and final performance were analyzed for observable behaviors that corresponded to these levels, guided by the model's descriptors and supplementary SoI resources (Ockelford, 2008; Sounds of Intent, 2025). Each of the four children's musical behaviors were charted independently across sessions, tracing their individual behavior and change. Then, individual data sets were charted together, displaying the possibility of any collective trends across the group.

Due to the group settings, most responses were in the SoI interactive domain with an overall increase in the frequency and complexity across the course of the project (see Table 1). Variation in frequency and response type reflected natural differences in participation and engagement. The greatest improvements were observed during the final performance. While patterns of change and growth varied by participant, each child demonstrated at least one level of higher engagement over time and most showed notable improvements at the final performance. Lili's development was most evident during the December 21 rehearsal, where she demonstrated an I.3 response for the first time (see Figure 1 for reference). Eva, who exhibited advanced musical interactions from the beginning, including I.5 responses in rehearsals, further expanded her engagement in the final performance with four separate instances of I.5 responses. Contrasting this, Diego showed his highest level of engagement during a December 20 rehearsal with an I.3 response but evidenced slightly less complex behavior in the final performance with an I.2. Vicki exhibited her greatest growth at the final performance, where she demonstrated an I.3 response for the first time but also increased her proactive engagements to P.3. Eva and Daniel were absent from rehearsals for a day due to sickness and doctors' appointments.

Quantitative trends were further illuminated through reflective field notes, which provided rich descriptions of the children's musical engagement during rehearsals and the performance. Notes from a rehearsal captured moments of collective musical interaction and peer-led improvisation involving children beyond the four focal participants (pseudonyms used):

FASCINATING THING HAPPENED: Mario started improvising with two mallets on xylophone and I first led the group in clapping along with him on the beat . . . then, I picked up the guitar and started playing along and the rest of the group started playing their instruments to the improvisation.

Table 1. Interactive Musical Engagement: Sol Summary.

Date	Sol domains and levels by participant (f)			
	Lili	Eva	Diego	Vicki
12/17/23	I.2 (1)	I.2 (1) I.3 (1) I.4 (2)	I.1 (1)	I.2 (1)
12/18/23	I.2 (3)	I.4 (1) I.5 (2)	I.2 (2)	P.2 (1)
12/19/23	I.2 (1)	I.2 (1) I.5 (1)	I.2 (1)	I.2 (1)
12/20/23	I.2 (1)	Absent	I.2 (1) I.3 (1)	P.2 (1) I.2 (1)
12/21/23	I.2 (1) I.3 (1)	I.4 (1) I.5 (2)	Absent	P.2 (1)
Concert	I.2 (2) I.3 (2)	I.3 (1) I.5 (4)	I.2 (1)	P.3 (2) I.3 (1)

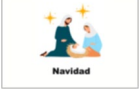
Note. Domains and levels from the Sounds of Intent framework are indicated using the format domain.level (e.g. P.2 for Proactive Level 2 and I.3 for Interactive Level 3). Parenthetical numbers indicate the observed frequency of each response type across all sessions for that date.

Field notes also helped capture moments of engagement for the four central participants of this study. For Lili, a field note for the December 21st rehearsal stated, “During *Feliz Navidad* (with no instruments), [Lili] started dancing accurately to the beat. She bobbed her hands to the eighth notes mostly accurately, smiling and twisting from side to side.” To support Lili’s I.3 response in the final performance, a field note described how “. . . she joined various friends in clapping on the beat to the fast part . . . she continued the group’s movement for the remainder of the song.” There were several details of Eva’s leadership, such as: “She helped a young boy strum the guitar hand over hand . . . she was perfectly on the beat and also trying to sing along.” Concert notes for Eva stated how, “she played her drum along with the music, improvising rhythm patterns.” Diego’s I.3 musical response within his group’s rehearsal activity is evidenced by, “For each consecutive chorus and verse, he played appropriately—loud and soft—immediately based on the dynamic of the music.” During this activity, Diego’s group focused on expressing dynamic changes collectively in their song throughout the week. Although Diego’s Sol assessment suggested a slight change during the final performance (see Table 1), field notes mentioned that he was out of frame for most of the performance video. The only visible moment was his I.2 response, likely underrepresenting his actual engagement. A different field note illustrated Vicki’s I.2 rehearsal response on December 19 stating, “. . . she shook her tambourine from time to time . . . when I encouraged everyone to play, ‘¡Todos tocan!’” Her I.3 engagement during the concert was supported by the field note stating, “[Vicki] joined immediately in clapping the fast part . . . she was aware of the sounds and attempted to join in.”

Children’s Reflections on Their Musical Experiences

To understand the children’s perceptions of the project, brief interviews were conducted immediately following the final performance using PECS response options. PECS was selected due to its reported benefits for children with limited expressive language (Lerna et al., 2014). Each child was asked how the rehearsals made them feel, how the concert made them feel, and their favorite part of the concert.

Table 2. PECS-based Interview Responses for Four Children.

Interview question	Participant			
	Lili	Eva	Diego	Vicki
How did the Concert make you feel?				
How did our practices make you feel?				
What was your favorite part of the concert?		"Todo" ("Everything")	"Todo" ("Everything")	
				

Note. Images of PECS cards are shown if they were selected by the participants, while spoken responses are shown in quotation marks. Participants had the option to select more than one response.

Following each question, they were presented with a small selection of laminated cards, each with a familiar image or symbol paired with a Spanish word below it (e.g. a sad face with “triste,” hands clapping with “aplausos”). Cards were presented in the same order for all children, and the final card was “otro” (meaning “other”) with an image of a question mark. This final card offered children the option to express a different answer than the choices shared, and they were told they could choose more than one answer if they wished. The PECS approach was a low-pressure, child-friendly means of obtaining feedback from participants with diverse communicative abilities.

Several commonalities emerged from the children’s interview responses, offering insight about their lived experiences during the project (see Table 2). Although all interviews were conducted individually, each child expressed a sense of enjoyment and connection to the musical performance. All children shared that the rehearsals and performance made them feel “happy” or “very happy,” reflecting their affective responses to the music-making experiences in those moments. When responding about their favorite aspects of the performance, Lili pointed to “music” and “Christmas,” while Vicki chose “applause.” This suggested that their most memorable moments were shaped by the music itself, thematic content of the event, and the social-emotional impact of audience recognition. Eva and Diego’s verbal responses each expressed how they liked “todo” (i.e. “everything”) about the performance. This reflected a broad, positive view and appreciation for the experience.

Emergent Finding: Collective Musical Interaction

A powerful moment of collective engagement occurred during the final performance and was not prompted by direct instruction, demonstrating the potential of interactive musical growth among children with varying abilities. During *Anton Tiruliru*, a traditional Spanish carol with two contrasting sections, a small group of children began improvising movements in response to the musical changes—clapping the beat of the fast choruses and waving arms from side to side during the

slow verses. As the song progressed, additional children joined in. By the end of the song, nearly all children were performing the same coordinated gestures quite accurately to the beat. Field notes helped capture this unified, peer-led improvisational moment:

. . . then, during the fast part, they immediately started clapping, always on beat. FASCINATING. Various children did this and they were scattered throughout the group. As the song went on, more and more children stopped playing their instruments and joined together in clapping ACCURATELY on the beat. FASCINATING!!!

This unplanned yet unified response both reflected the children's awareness of musical structure and responsiveness to peers' behaviors. Field notes, SoI assessments, and video footage captured this moment of spontaneous interaction, emphasizing how peer-based music making might enhance musical engagement among children with diverse abilities.

Discussion

The purpose of this study was to explore and assess the musical behavior and possible growth of children with exceptionalities in Bolivia using a flexible, inclusive framework, while examining how the children themselves felt about the music learning and final performance. By using a nested case study approach, the experiences of four children were examined under the broader context of the project, allowing for both individual and collective analyses of inclusive music-making experiences. The SoI framework allowed for nuanced recognition of engagement, assessing the children's unique musical responses in a manner that may not have been captured by field notes alone. This flexibility in assessment is in line with recent calls for individualized, non-standardized assessment in music education and special education research (Haning & Lehmann-Wermser, 2024; Mertens, 2009). Our findings align with past SoI investigations in culturally distinct settings, where the framework helped to capture nuanced musical engagement and notable moments of interactive participation among children with exceptionalities (Cheng et al., 2009; Lisboa et al., 2021). Powerful instances of interactive musical responses have also been reported in children without exceptionalities using the SoI framework, which supports how all children are capable of meaningful and responsive music-making (Voyajolu, 2020). PECS-based interviews allowed low- to non-speaking children to express their feelings and opinions, offering a social-communicative scaffold (Lerna et al., 2014) and aligning with the need to center children's voices in research (Grimsby, 2025; Yinger et al., 2023). By utilizing a transformative approach, the project prioritized the children's experiences, while fostering inclusive participation in a culturally meaningful performance toward social change (Mertens, 2009). Taken together, the results from this project supported the value of inclusive, interactive music-making in fostering both musical and social-communicative development.

The most powerful musical moment emerged during the final performance. While video observation notes documented this occurrence generally, it was the SoI framework that helped capture the developmental significance of this collective response, specifically through the children's shared interactive levels of engagement. As more children joined in with moving to the music in time, the event reflected not only collective musical growth, but their shared responsiveness to each other. Answers to questions in the follow-up PECS-based interviews also revealed children's sense of joy and connection during the final performance. Altogether, this emergent finding reflected a transformative approach—embracing the children's diverse abilities and showcasing their collective music-making to prompt social change. In a rural Bolivian community where children with exceptionalities are often overlooked, this public celebration of their music-making offered a new way of seeing the children's value and potential.

This study had several limitations. As mentioned, all children were not always visible in the videos, although there were over 8.5 hr of video in total. This limited the observation of certain participants, most notably in the final performance when Diego's interactive responses were not fully captured. Another limitation was that data analysis was conducted by a single researcher, thus limiting opportunities for inter-rater reliability and collaborative coding. This was unfortunately not possible given the scope and timeline of the international project. Although interviews were conducted immediately following the final performance, more formal member checking was not possible due to the project's structure and participant's capacities. Despite these constraints, this project offered valuable insights into inclusive music-making practices in underrepresented contexts.

Implications and Conclusion

Findings from this work suggest several practical directions for music educators, music therapists, and researchers seeking to foster inclusive music making experiences. First, the use of the Sol framework provided a flexible yet structured tool to gauge musical engagement in ways that captured individual variation. This aligns with calls for such assessment instruments in music education (Brophy et al., 2021; Elliott et al., 2019; Haning & Lehmann-Wermser, 2024), particularly to help support children with diverse abilities. Secondly, incorporating PECS-based interviews supported how non- or low-speaking children can meaningfully share their experiences when provided with accessible communication tools (Lerna et al., 2014). This approach might be helpful in both inclusive research practices and classroom settings, where the fostering of expressive communication is desired for children with communication needs. Practitioners are also encouraged to prioritize interaction-based activities, as these moments were especially beneficial for the children's musical and social development. While the context and scale of this project were very specific, the findings pointed to broader possibilities for inclusive practice, particularly in settings where children with exceptionalities continue to be marginalized. Future studies in diverse cultural settings could implement longer timelines, deeper analyses, and structured instructional features. Continued research may further illuminate how participatory, child-centered frameworks—such as the Sounds of Intent—might support musical and social development across diverse abilities and cultural contexts. As efforts continue to make music education more inclusive, recognizing and capturing the unique musical capacities of children with exceptionalities will be essential in reimagining what meaningful participation can look and sound like around the world. Together, practitioners and researchers can work toward this by supporting culturally responsive approaches that celebrate diverse musical expressions.

Acknowledgements

The authors would like to thank the administrators and staff at the hogar in Bolivia for their support of this project, as well as the children who made the research possible. Special thanks are due to Gina Nagel, whose connection to the hogar and assistance during fieldwork were invaluable.

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Ethical Considerations

This study was approved by the Anderson University Human Subjects Committee (USA), Comité de Ética de la Universidad Mayor de San Simón (Bolivia), and Departamento de Asistencia y Desarrollo Social (Bolivia).

Author Contributions

Amalia Allan: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Resources; Software; Validation; and Writing—original draft.

Adam Ockelford: Conceptualization; Funding acquisition; Resources; Supervision; and Writing—review & editing.

Graham F. Welch: Conceptualization; Funding acquisition; Resources; Supervision; and Writing—review & editing.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This project was supported by a grant from the Society for Education, Music and Psychology Research (SEMPRE).

Declaration of Conflicting Interests

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

Data Availability Statement

Data are not publicly available due to confidentiality. De-identified summaries are in the manuscript and additional details available upon request.

References

- Adamek, M. S., & Darrow, A. A. (2018). *Music in special education* (3rd ed.). The American Music Therapy Association.
- Allen, K. R., Letiecq, B. L., Robert, K. A., Rosenblatt, P. C., & Wieling, E. (2019). Dialogue about reflexivity. In A. M. Humble, & M. E. Radina (Eds.), *How qualitative data analysis happens: Moving beyond "themes emerged"* (pp. 213–220). Routledge.
- Asamoah, D., Shahrill, M., & Abdul Latif, S. N. (2023). Towards developing classroom assessment literacy: Exploring teachers' approaches to assessment across cultures. *Cogent Education*, 10(2), Article 2280301. <https://doi.org/10.1080/2331186X.2023.2280301>
- Brophy, T., Krieger, C., Leite, M. C., McCaffrey, M., Wolf, D. P., & Poulin, J. M. (2021). Guiding principles for the assessment of arts learning: A discussion draft created by delegates at the 10th World Summit on Arts Education October 11-15, 2021. *Creative Generation Journal*, 1–9.
- Brophy, T. S. (2019). Assessment in music education: The state of the art. In T. S. Brophy (Ed.), *The Oxford handbook of assessment policy and practice in music education* (Vol. 2, pp. 903–932). Oxford University Press.
- Broughton, M. C., & Costa-Giomi, E. (2023). Perspectives on music development introduction. In M. S. Barrett, & G. F. Welch (Eds.), *The Oxford handbook of early childhood learning and development in music* (pp. 147–148). Oxford University Press.
- Burback, F., & Parkes, K. A. (2019). The development of standards-based assessments in music. In T. S. Brophy (Ed.), *The Oxford handbook of assessment in music education* (Vol. 1, pp. 651–670). Oxford University Press.
- Cheng, E., Ockelford, A., & Welch, G. (2009). Researching and developing music provision in special schools in England for children and young people with complex needs. *Australian Journal of Music Education*, 2, 27–48.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- DeLuca, C., Rickey, N., & Coombs, A. (2021). Exploring assessment across cultures: Teachers' approaches to assessment in the U.S., China, and Canada. *Cogent Education*, 8(1), Article 1921903. <https://doi.org/10.1080/2331186X.2021.1921903>

- Elliott, D. J., Silverman, M., & McPherson, G. E. (2019). Philosophical and qualitative perspectives on assessment in music education: Introduction, aims, and overview. In D. J. Elliott, M. Silverman, & G. E. McPherson (Eds.), *The Oxford handbook of philosophical and qualitative assessment in music education* (pp. 3–26). Oxford University Press.
- Ferm Almqvist, C., Vinge, J., Väkevä, L., & Zandén, O. (2017). Assessment as learning in music education: The risk of “criteria compliance” replacing “learning” in the Scandinavian countries. *Research Studies in Music Education*, 39(1), 3–18. <https://doi.org/10.1177/1321103X16676649>
- Glass, D., Meyer, A., & Rose, D. (2013). Universal design for learning and the arts. *Harvard Educational Review*, 83(1), 98–119. <https://doi.org/10.17763/haer.83.1.33102p26478p54pw>
- Gordon, E. E. (2012). *Learning sequences in music: A contemporary music learning theory*. GIA Publications.
- Grimsby, R. (2025). The songbird and the percussionist: Listening to and implementing non-speakers’ musical preferences. *International Journal of Education & the Arts*, 26(16), 1–31. <http://doi.org/10.26209/ijea26n16>
- Hambleton, R. K., Merenda, P. F., & Spielberger, C. D. (Eds.). (2005). *Adapting educational and psychological tests for cross-cultural assessment*. Lawrence Erlbaum.
- Haning, M., & Lehmann-Wermser, A. (2024). *Assessment in music education: Unity and diversity* (1st ed). GIA Publications.
- Hargreaves, D. J. (2023). Cultural diversity and the explanation of musical development. In M. S. Barrett, & G. F. Welch (Eds.), *The Oxford handbook of early childhood learning and development in music* (pp. 186–203). Oxford University Press.
- Hargreaves, D. J., & Lamont, A. (2017). *The psychology of musical development*. Cambridge University Press.
- Hess, J. (2023). The dangers of predictable learner variability: Challenging the imagining of disability in the Universal Design for Learning in music education. *Bulletin of the Council for Research in Music Education*, 236, 21–42. <https://doi.org/10.5406/21627223.236.02>
- Jellison, J. A. (2015). *Including everyone: Creating music classrooms where all children learn*. Oxford University Press.
- Lerna, A., Esposito, D., Conson, M., & Massagli, A. (2014). Long-term effects of PECS on social–communicative skills of children with autism spectrum disorders: A follow-up study. *International Journal of Language and Communication Disorders*, 49(4), 478–485. <https://doi.org/10.1111/1460-6984.12079>
- Lisboa, T., Shaughnessy, C., Voyajolu, A., & Ockelford, A. (2021). Promoting the musical engagement of autistic children in the early years through a program of parental support: An ecological research study. *Music and Science*, 4, 1–24. <https://doi.org/10.1177/20592043211017362>
- Mertens, D. M. (2009). *Research and evaluation in education and psychology*. Sage.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2020). *Qualitative data analysis: A methods Sourcebook*. Sage.
- Ministerio de Educación. (2017). *Orientaciones para la planificación curricular con enfoque de educación inclusiva en el Sistema Educativo Plurinacional (SEP)*. [Guidelines for curriculum planning with an inclusive education focus in the Plurinational Education System (SEP)]. Ministerio de Educación del Estado Plurinacional de Bolivia. https://www.minedu.gob.bo/index.php?option=com_k2&view=item&id=156:orientaciones-para-la-planificacion-curricular-con-enfoque-de-educacion-inclusiva-en-el-sistema-educativo-plurinacional-sep-modalidad-directa
- Ministerio de Educación. (2023). *Documentos curriculares de educación especial*. [Curricular documents of special education]. Ministerio de Educación del Estado Plurinacional de Bolivia. https://www.minedu.gob.bo/index.php?option=com_k2&view=itemlist&task=category&id=67:documentos-curriculares-de-educacion-especial
- Ministerio de Educación. (2025). *Educación Musical: Educación Secundaria Comunitaria Productiva*. [Music education: Community-based productive secondary education]. Ministerio de Educación del Estado Plurinacional de Bolivia. <https://red.minedu.gob.bo/repositorio/fuente/34214.pdf>
- Moore, S. L., Rose, D. H., & Meyer, A. (2007). Teaching every student in the digital age: Universal design for learning. *Education Technology Research and Development*, 55, 521–525. <https://doi.org/10.1007/s11423-007-9056-3>

- Ockelford, A. (1991). The role of repetition in perceived musical structures. In P. Howell, R. West, & I. Cross (Eds.), *Representing musical structure* (pp. 129–160). Academic Press.
- Ockelford, A. (2008). *Music for children and young people with complex needs*. Oxford University Press.
- Ockelford, A. (2019) *повторение в музыке теоретические и метатеоретические перспективы* [Repetition in music: Theoretical and metatheoretical perspectives]. (A. Molchanov, Konstantin Kurlenya & O. Kalinkina, Trans.). State Conservatory of Music. (Original work published 2005).
- Ockelford, A., & Zapata Restrepo, G. (2011). Sonidos de la intención (SoI): Un proyecto para valorar y promover el desarrollo musical en niños con dificultades múltiples y severas de aprendizaje. [Sounds of Intent (SoI): A project to assess and promote the musical development of children with multiple and complex learning needs]. *Revista Acontratiempo*, 18, 1–9.
- Patton, M. Q. (2015). *Qualitative research & evaluative methods*. Sage.
- Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal Design for Learning*. Association for Supervision and Curriculum Development.
- Shaw, B. P. (2023). A content analysis of assessment articles in American music education journals, 2000–2020. *Bulletin of the Council for Research in Music Education*, 236, 58–86. <https://doi.org/10.5406/21627223.236.04>
- Sounds of Intent. (2025). *An inclusive framework of musical development*. <https://soundsofintent.org/en/home/index>
- Swanwick, K. (2022). Reflections on the sequence of musical development. *British Journal of Music Education*, 39(1), 44–50. <https://doi.org/10.1017/S0265051721000279>
- Swanwick, K., & Tillman, J. (1986). The sequence of musical development: A study of children's composition. *British Journal of Music Education*, 3(3), 305–339. <https://doi.org/10.1017/S0265051700000814>
- UNICEF. (2018). *Bolivia: Child protection thematic report*. <https://open.unicef.org/sites/transparency/files/2020-06/Bolivia-TP5-2018.pdf>
- UNICEF. (2022). *Pobreza multidimensional infantil en Bolivia: Una propuesta metodológica 2022*. [Multidimensional infant poverty in Bolivia: A methodological proposal 2022]. https://www.unicef.org/bolivia/media/4631/file/Esp_Pobreza%20multidimensional%20infantil%20en%20Bolivia.pdf
- Voyajolu, A. (2020). *Mapping emerging musicality: Exploring the trajectory of musical development in the early years using the Sounds of Intent Framework* [Unpublished doctoral dissertation]. University of Roehampton.
- Welch, G. F. (2022). Reflections on the concept of musical development. *British Journal of Music Education*, 39(1), 92–105. <https://doi.org/10.1017/S0265051721000310>
- Welch, G. F., Ockelford, A., Carter, F.-C., Zimmermann, S.-A., & Himonides, E. (2009). 'Sounds of Intent': Mapping musical behaviour and development in children and young people with complex needs. *Psychology of Music*, 37(3), 348–370. <https://doi.org/10.1177/0305735608099688>
- Welch, G. F., Ockelford, A., & Zimmermann, S.-A. (2001). *Provision of music in special education: PROMISE*. University of London Institute of Education.
- Wilde, E., Ockelford, A., & Welch, G. (2016) Muziekonderwijs voor kinderen met speciale onderwijsbehoeften. *Cultuur + Educatie*, 16(45), 56–77.
- World Bank. (2024). *Poverty & equity brief: Bolivia*. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099227301032518267>
- Yinger, O. S., Vasil, M., & Sheridan, A. (2023). Centring perspectives of disabled children in music education research. *Music Education Research*, 25(4), 406–417. <https://doi.org/10.1080/14613808.2023.2242365>