

Exploring the Piano From the Age of Eight To Thirty Six Months: Implications For Infant and Toddler Musical Development

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This paper reports on a longitudinal study of a young child's exploration of music on the piano from 8 months to 36 months. Unlike studies of older children playing musical instruments, this study reports on the child's natural exploration of music on the instrument, as opposed to formally taught skill acquisition directly related to the instrument being learnt.

This case study suggests that it is the process of musical exploration, not a final musical product (such as being able to play a specific piece of music) that is of importance at this age in relation to musical development. A number of themes in the child's musical development emerged in relation to musical activities revolving around the piano: 1) initial exploration of sound; 2) playing the piano with a parent was a social experience for the child; 3) a sense of beat developed with musical activities revolving around the piano; 4) playing the piano encouraged singing – particularly the development of accurate pitch; and 5) hearing and being able to see the difference between soft/loud and fast/slow enabled development of the musical concepts of dynamics and tempo.

Introduction

Longitudinal studies of early childhood musical development tend to focus on vocalising and moving to music (e.g., Davidson, McKernon & Gardner, 1981; Gruhn, 2002; Moog, 1976; Moorehead & Pond, 1978; Sundin, 1998). This study reports on my son's musical development in relation to using the piano from 8-36 months of age. Naturally, vocalising and moving to music were also part of his musical development throughout this period, but it was his use of the piano that was interesting, as the role of the piano in general early childhood musical development is barely acknowledged. An exception is Kelley & Sutton-Smith's (1987) case study of an infant, which documented general music development that included exploring the piano from 9 months. The authors noted that exploring the piano with the child's father encouraged singing responses and movement.

In the case outlined by Kelley & Sutton-Smith (1987) and in the current study the young children engaged in a process of musical exploration, with the help of an adult. Studies with young children that focus on the piano or electronic keyboard tend to focus on formal piano/keyboard "lessons", such as Costa-Giomi's (1999) study of the effects of private piano instruction on non-musical cognitive skills, Rauscher & Zupan's (2000) examination of group keyboard lessons on kindergarten children's spatial reasoning, and the study by Marcinkiewicz et al. (1995) that found a group of kindergarten and first grade children who engaged in electronic keyboard instruction in music lessons responded more favourably to music lessons than a non-keyboard group. In each of these cases formal instruction was the focus of musical learning on keyboard, rather than musical play. The latter has been seen by a number of early childhood music researchers as lacking in early childhood music education (Miller, 1989; Morin, 2001; Palmer, 1993; Turner, 2000; Wright, 2003). Alvarez (1989) describes play as "a young child's work", which is more process than product-oriented (p. 61). This was certainly the case in the current study, where my son did not aim to "perform" a musical product (i.e.,

playing a song on piano), but rather took pleasure in the process of exploring the piano and other music-related activities associated with the piano.

Parent-Researchers

When our son Jack was born my partner and I decided that we would document our son's musical development in a naturalistic setting - our home - for the first three years of his life. We were in a position where either my partner or I were at home with Jack for five to six days a week up until he was three years old. From the age of 18 months Jack attended a childcare centre one day a week, and spent occasional time before this (i.e., half days) with relatives.

My partner and I became parent-researchers, a trend in educational research that can be traced back to luminaries such as Jean Piaget and Erik Erikson. Despite this, parent-research has not been dominant in educational research, although there was a resurgence in the 1990s (e.g., Bates et al., 1995; Matthews, 1994). Adler & Adler (1997) have spearheaded the movement in this period, arguing that "it is a naturally-occurring membership role with which children are totally familiar" (p. 22), allowing greater access to children than the position taken by most ethnographers, namely that of either friendly observer or observing friend (p. 21). Graue & Walsh (1995) have called for a change in approach to early childhood research, suggesting that "researchers spend less time attempting to develop grand theories and more time learning to portray the richness of children's lives across the many contexts in which children find themselves" (p. 140). One of the ways this can occur is through parent-research, which allows this richness of children's lives to be portrayed.

As parent-researchers we were engaged in participant observation research, thus analysis of observations and interactions were "carried on sequentially, [with] important parts of the analysis being made" as data was gathered (Becker, 1999, p. 56). As data was gathered themes began to emerge in relation to Jack's musical development revolving around his use of the piano, namely: 1) initial exploration of sound; 2) playing the piano with a parent was a social experience for Jack; 3) a sense of beat developed with musical activities revolving around the piano; 4) playing the piano encouraged singing - particularly the development of accurate pitch; and 5) hearing and being able to see the difference between soft/loud and fast/slow enabled development of the musical concepts of dynamics and tempo.

Theme 1: Initial Exploration of Sound

When Jack was 8 months old we purchased an upright piano. I played the instrument at least four times a week. At first Jack's only interest in the piano was pressing the pedals as I played. However, within the first month he became fascinated with opening and closing the piano lid. This progressed in his ninth month to pressing keys down on the piano keyboard. Jack would sit on the stool with me and press down keys near the keys I was pressing down with the palms of his hands. By his eleventh month Jack would press down keys seemingly at random, without copying where my hands might be on the keyboard. He would also initiate exploration by going to the piano himself and pressing down keys.

At fourteen months I regularly played songs on the piano that my partner and I had sung to Jack. I used my pointer finger only to play the melody, and encouraged Jack to try playing like this. He did, moving from playing the keyboard with his palm to playing single notes with his pointer finger. However, notes were played at random, often close to where my hand was if I was playing. In these initial six months of being exposed to a piano Jack was content to explore sounds he could make on the piano.

Theme 2: Playing the Piano With a Parent Was a Social Experience For Jack

From the first time Jack sat on the piano stool next to me my partner and I referred to this as “piano time with Dad.” Sitting together at the piano quickly became a social experience for Jack. From 10 months onwards Jack would continually want to sit next to me at the piano, whether he was invited or not. This became a time when we would exchange hugs, smiles and talk to each other as we explored the piano. Trehub (2001) points to feelings of well-being that are generated between mother and infant when the mother sings to the infant: “songs could be considered embellishments of human vocal communication or ritualized expressions of love, hope, or complaint. In all likelihood, this type of behavior, by ministering to the emotional needs of mother and infant, promotes reciprocal affectional ties” (p. 441). A similar promotion of reciprocal emotional ties occurred between Jack and I at the piano.

When Jack was 10 months I would play “Hot Cross Buns” on the piano with my right pointer finger, while singing the song. For the next four months this was the most played song on piano, with Jack often requesting “Hot Buns” when we sat at the piano together. Curious about my playing, at 12 months Jack said, “Me Hot Buns.” He placed his pointer finger near my hand as I was playing. I took Jack’s hand and tried to guide it over the piano keyboard to play “Hot Cross Buns” with him. He resisted, saying, “I do.” He then proceeded to play a series of random notes with his pointer finger while singing parts of the song. At the conclusion of his rendition he looked at me and said, “You play.” I would play and sing the song, then Jack would give me a big hug. This interplay between us became commonplace over the next two months at the piano, reinforcing that playing the piano “with Dad” was a social experience for Jack, and a time of bonding for both father and son.

As Jack progressed through his second year of life he was exposed to a variety of other musical instruments, both “found” (i.e., wooden spoons as clap sticks; a tin can with a spoon) and percussion instruments. However, he would always want the piano above these other instruments. From the age of 24 months Jack would come to my office once a week before going to the university childcare centre. For half an hour he had free reign of a variety of percussion instruments. He would explore these, but always ended up wanting to sit at the piano in a music practice room and “play with Dad.” It was never sufficient for me to be nearby if Jack was at the piano; I had to be sitting next to him, playing and singing with him, thus reinforcing that playing the piano was a social experience for Jack.

Theme 3: A Sense of Beat Developed with Musical Activities Revolving Around the Piano

Over the year spanning Jack’s age of 24-36 months the most remarkable area of his musical development was his gradual beat acquisition. At 24 months Jack had no sense of beat. Like many young children he responded to music through movement, but his movements were not synchronised to a steady beat (Rainbow, 1981; Sims, 1985; Moog, 1976). During this year he became gradually synchronised to the beat when moving to music. This occurred initially through Jack copying movements to the beat that accompanied songs he knew (i.e., “Everybody Do This”) and actions copied from television programs (i.e., Teletubbies and Play School). However, at 28 months Jack began keeping a synchronised beat with me at the piano.

At this time Jack began bobbing up and down to the beat when sitting next to me on the piano stool as I played a boogie woogie. As I played I too was bobbing up and down to the beat. I saw Jack initially looking at me and copying me. From the onset there was no lag time between the beat and Jack’s movement response to the beat.

Playing the boogie woogie became a regular occurrence at our piano sessions. From the

third week of being exposed to the boogie woogie Jack would no longer look at me moving to the beat as I played. Rather, he became focused on looking at my hands move over the keyboard as he bobbed up and down to the beat. It was at this time that he would often join in with me, pressing his palms down on the keyboard in time with the beat.

Following on from this, with Jack aged 29 months, I began playing the one chord (C major) to the beat while moving my body to the beat. I encouraged Jack to join in. With his pointer finger Jack began playing single, random notes to the beat. I kept playing, but ceased moving my body to the beat. Jack continued moving his body and playing random notes to the beat. Finally, I stopped playing. Jack continued playing and moving, but within five seconds he had lost the synchronised beat. This episode demonstrates the use of "scaffolding", a term coined by Vygotsky (1978 translation) to describe the way an adult or more capable peer guides the learner through the Zone of Proximal Development, this being "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86 translation). With scaffolding the adult-peer gradually withdraws support as the learner's mastery of a given task increases. As was demonstrated in this episode Jack was not ready for complete withdrawal of my support in order to keep a synchronised beat.

Over the next four months this continued, with Jack unable to keep the beat for longer than 5-10 seconds once I had stopped playing. At 33 months, however, Jack demonstrated that he was ready to keep a synchronised beat for a longer period of time. Again, I had been playing a beat-heavy boogie woogie. As I played Jack bobbed up and down to the beat with me and pretended to move his hands along the keyboard as I did. When I stopped playing Jack continued to bob up and down. Using his left hand he began to play a single note to the beat. He continued to bob up and down. Thirty seconds passed before he began to stray from a synchronised beat. At this point I began playing the boogie woogie again. Jack continued moving and playing his single note and retained a synchronised beat as I joined in. Jack had progressed in his ability to retain a synchronised beat, albeit with the aid of continual scaffolding provided by me at the piano.

Theme 4: Playing the Piano Encouraged Singing: Particularly the Development of Accurate Pitch

Singing was a part of Jack's musical life since his birth. He was sung to daily, and began responding to singing through his own musical babbling at 6 months, described by Moog (1976) as consisting of "sounds of varied pitch, produced either on one vowel or on very few syllables" (p. 63).

Jack's first attempts at singing known songs (sung to him by adults) consisted of singing fragments of known songs. This began with simply imitating some words from a song (e.g., "Baa black sheep hab any wool"), through to singing entire phrases with accurate rhythm and partially accurate pitch, with the melodic contour of songs being generally accurate. Jack initially built up a vocabulary of lyrics from known songs, preferring to speak these than sing them. There were occasions where he did sing specific pitches, sometimes even accurately. This occasional singing of fragments from known songs occurred from 18 months. However, it was only from 28 months that Jack was consistently *singing*, rather than speaking or speak-singing fragments from known songs.

Ever since we had sat at the piano together I had sung while I played songs on the piano to Jack. It was only at 30 months, however, that Jack began singing at the piano with me. Prior to

this his focus had been on moving to music I played, and exploring the sounds the instrument made. I had encouraged Jack to sing, but his focus was solely on the piano. At 30 months we were sitting down at the beginning of a piano session when I asked Jack, "What will Dad sing?" He replied: "Let's sing ABC." I began, not expecting him to join in. I sat there playing the melody of the song with my right hand as I sang the first phrase. To my surprise, he began singing the ends of phrases with me. At the end of the song he clapped and laughed. "Let's do it again!" he said. We did – another seven times, each time Jack contributing more and more to the singing. By the seventh rendition he was singing the entire song with me.

Following this breakthrough Jack always wanted to sing at the piano if I was singing and playing the melody on piano. At 30 months I began withdrawing my vocal support, allowing Jack more opportunities to sing with the piano. I would begin by singing a song Jack would know while playing the melody on piano. "Your turn", I would say, while playing and singing. Jack would join in, but as I continued to play the melody on piano I would not sing. Jack would continue singing. With the piano melody as a guide he sung in time, reaching the end of the song at the same time as I did on the piano. This became a new musical game, one which I made more challenging for Jack at 34 months when I would sometimes stop playing the piano melody all together, only re-entering if he was having trouble keeping in time or keeping accurate pitch.

At 28 months Jack invariably sang the correct rhythm when singing entire songs, but pitch was not always accurate. He tended to correctly pitch intervals such as the minor 3rd and major 2nd, but intervals like the perfect 4th or 5th were problematic. During the 30-34 month period where we played our singing games at the piano and I gradually withdrew my vocal support and ultimately parts of the piano melody, there was a marked increase in Jack's pitch accuracy. He was able to correctly pitch intervals of a 4th or 5th. In addition, by 34 months he was often accurately finding a starting pitch that I played on the piano prior to singing a song. I would say, "Okay, let's sing laa", play the starting pitch on piano, and Jack would generally slide into this pitch. A second later, when he began singing, he generally retained this starting pitch.

During this period Jack preferred to do his singing at the piano. My partner and I would often encourage him to sing throughout the day, as he had done in the past, but during this period he would often decide not to sing (i.e., "I not sing now, sing later") unless at the piano. The piano and singing had become intertwined, with Jack's singing developing in a short period of time due to his singing at the piano.

Theme 5: Hearing and Being Able to See the Difference Between Soft/Loud and Fast/Slow Enabled Development of the Musical Concepts of Dynamics and Tempo

At 29 months Jack concurrently began showing an interest in the highness and lowness of sounds on the piano and the softness and loudness of sounds. Prior to this Jack had managed to play the piano extremely loudly; he took great joy in doing this. However, he did not explore moving from loud to soft, or vice-versa, until he was 29 months. At this time he would play the same note repeatedly, beginning very softly, then suddenly playing very loudly. As he played loudly he made exaggerated movements with his body. "That's very loud," I commented. Jack continued playing loudly. Suddenly he played softly, still on the same note. "Not loud," he commented. "No," I whispered, "it's *soft* now." I reinforced this by playing loudly, then softly, firstly on the one note, then playing "Twinkle Twinkle Little Star" loudly, then softly. Following my piano renditions (without singing) Jack insisted I play "Twinkle Twinkle" again. "Softly first," I whispered, and he proceeded to whisper-sing as I played. Naturally, when I played it loudly, Jack was nearly shouting. Following on from this, Jack would either choose to sing songs softly or loudly, whether at the piano or away from it. At night, for his bed-time

song, he would say, "Sing softly, Daddy, Jack sleeps now."

Just as Jack's awareness of soft and loud began at the piano, so too did his awareness of high and low pitches. At 30 months Jack was sitting beside me at the instrument while I played and sang "Baa Baa Black Sheep", looking at my right hand as it pressed down keys and joining in with the singing. "Watch," I said to Jack, "I can play the song very high." I reached over Jack to the upper octave of the piano and played the melody once again. "Down there," said Jack, pointing to the lower register of the keyboard. "That's low," I said in an exaggerated low voice, then proceeded to play the song in the lower range. "Can Jack play low?" I asked. Jack slid across the piano stool and started pressing random low notes. "What about high?" I said. He slid back across the stool and played high notes. Over the next weeks when Jack sat at the piano he would either choose to start by playing either in the higher pitch range or lower pitch range. When asked what notes he was playing, he would quickly answer either high or low, depending on the range.

At 31 months I found Jack with his arms apart, left arms stretched towards the lower range of the keyboard and right stretched towards the upper range. He was playing both hands together. "What are you doing?" I asked. "Jack play high and low," he replied, and grinned.

Conclusion

The piano has played a crucial role in Jack's musical development up until 36 months, as indicated in the areas outlined in this paper. In saying this, I do not want to over-emphasise its importance, as I have solely focused on musical development that involved Jack's interactions with the piano. A number of musical experiences have contributed to Jack's musical development, not just music activities involving the piano.

Jack's use of the piano almost exclusively occurred when I was present, hence the theme *playing the piano with a parent was a social experience for the child*. However, our time at the piano together did not consist of formal music instruction. Rather, Jack directed what we did at the piano through musical play. As was indicated at the beginning of this paper, numerous early childhood music educators have called for greater emphasis on musical play in early childhood music programs. However, John Feierabend (1998), director of The National Center for Music and Movement in the Early Years, stresses not only the need for free musical play, but that parents be involved in their children's free musical play. This occurred in the way Jack and I interacted at the piano. I involved myself in what interested him at the piano, frequently providing scaffolding to help Jack move through his Zone of Proximal Development.

As Jack is now three years old many people ask me, "So when is he going to start taking piano lessons?" There appears to be this belief that from the age of 3 it is time to begin instrumental music lessons (as evidenced on the Internet with the dozens of pages devoted to the topic). Gordon (1997) stresses that there is no correct chronological age to begin taking instrumental lessons, but rather it should be the child's "musical age", whereby a child can sing in tune and move her/his body with "good rhythm" (p. 103). Jack may not be there yet, but his musical play on the piano has helped move him in that direction, with an emphasis on musical process (through musical exploration) rather than on musical product (being able to "play" x number of songs on piano). So when I am asked the when-is-he-going-to-start-piano-lessons question, I reply, "He already has. He started at 8 months with me."

About the Author

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