

‘Sounds of intent’: mapping, assessing and promoting the musical development of children with profound and multiple learning difficulties

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Abstract. A framework of musical development in children with profound and multiple learning difficulties (‘PMLD’) is presented, based on the observation and analysis of individual pupils undertaken over a period of 24 months by teachers working in special schools. The framework is informed by current thinking as to what constitutes ‘typical’ early musical development and by a recent theory of how music is understood by listeners which was developed in the field of cognitive science. The proposed framework is designed to be used through a graphical user interface driven through a touchscreen on a ‘tablet’ PC with an attached video camera, enabling teachers and others to assess children’s musical development and record it, and in the future offering practitioners suggestions and materials for future activities at appropriate levels to promote further development.

Keywords: Musical development; profound and multiple learning difficulties; PMLD.

1. Introduction

This paper presents a framework of musical development in children with profound and multiple learning difficulties (‘PMLD’). Children with PMLD have profound global developmental delay, such that cognitive, sensory, physical, emotional and social development are in the very early stages (usually found in the first 12 months of life) [1]. The musical development of these children is a hitherto unresearched area, although in 2001 the Qualifications and Curriculum Authority in England published a series of documents entitled ‘Planning, teaching and assessing the curriculum for pupils with learning difficulties’ (which became known as the ‘P-levels’), including one on music. However, as the QCA themselves have acknowledged, the ‘performance descriptions’ of music contained in the P-levels, which outline early learning and attainment before Level 1 of the National Curriculum, are not based on music-developmental research. Indeed, the references to music that are made have an anecdotal resonance, and often suggest how to use music and sound as means to other ends [2]. While there is no doubt that music can be of value in the role of promoting wider development [3], it was the

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view of the research team that teachers would be better equipped to use music across their PMLD curricula if their pupils' likely paths of musical development were more fully understood first. Acquiring this understanding is the aim of the Sounds of Intent project.

2. Method

A group of six researcher-practitioners was assembled, initially comprising teachers working in special schools, both self-declared music specialists and non-specialists, led by the core research team (the authors listed above). A case-study approach was adopted, deriving evidence from the observation of children's responses, actions and interactions in musical contexts over a period of time. As well as visits to each other's classes, video recordings were made to facilitate the sharing and detailed analysis of data. The aim was to identify what in the children's behaviours could be considered to be representative, exceptional or in any way indicative of musical attainment or progress. This 'bottom-up' approach was complemented by two 'top-down' elements introduced by the core research team. First, there were contemporary research findings as to how early musical development 'typically' occurs [4]. These, it was recognised, may or may not pertain to children with PMLD, though in any case they provided an important context. Second, a new theory that sought to explain how music is typically understood [5] was introduced on the grounds that, if an understanding of music is to be developed at all, then the path of that development must also reflect the perceived inner logic of music itself (though just how the two things were related remained to be determined).

Emerging ideas were used to inform and critique a model of musical development in children with PMLD, which went through a number of iterations as the cyclical process of observation, analysis, theory-building and hypothesis testing ran and re-ran its course. The model presented here is the result of more than a dozen such iterations, and merely represents a snapshot in time of an ongoing evolutionary process.

3. The new model

Based on the bottom-up and top-down findings and evidence outlined above, the team's current thinking is that the key stages in the recognition and understanding of music by children with PMLD may be summarised as follows:

- a) a developing awareness of sound (including musical sound);
- b) a developing awareness of the *variety* of sounds that are possible;
- c) a developing awareness of simple patterns within sound brought about through repetition (exact or approximate), whereby sounds seem to form coherent clusters or streams ('groups'); and
- d) a developing awareness that groups of sounds may themselves have a sense of connectedness through repetition (exact or approximate).

In terms of their emotional response to music, it seems likely that children with PMLD will react to the basic qualities of sound (high/low, loud/soft, quick/slow, and so on) in the same way as children who are chronologically in the first few months of life – reactions which apparently stem from features of human, particularly maternal vocalisation [6]. However, as the children's awareness of how sound is structured in

music develops (as in c) and d) above), it seems likely that their capacity to respond to it may evolve too. Hence, young people with PMLD may be able to anticipate changes in loudness, timbre or pitch, for example, from the internal regularity of a sequence of musical sounds or from previous hearings of the same or similar material, and relish the feeling that having their expectations fulfilled can bring.

In more detail, the model charts the following developmental path. *First*, children encounter sounds with little or no understanding of what these sensations mean, how they are caused or how they may be elicited; interactions with others in the domain of sound and music may occur, but only by chance. *Second*, there may be an emerging sense of awareness of sound and silence, and intentionality in the production of sound, which may be made in response to external stimuli or, in turn, used to stimulate a response. *Third*, children may attend and respond to a variety of sounds; they may be able to make a range of different sounds (or cause them to be made), and they may take turns without copying what is heard or noticing if their own sounds are copied. *Fourth*, children may recognise and respond to simple patterns in sound: straightforward repetition and variation that may enable them to anticipate what is coming next. They may produce simple patterns by deliberately repeating or varying the sounds they make, and they may take turns, copying individual sounds that they hear and relishing their own sounds being copied. *Fifth*, children may respond distinctly to familiar fragments or features of music or to short pieces, and may be able to anticipate clearly delineated contrasts within them. They may be able to repeat short groups of sounds, which may incorporate recognisable fragments or features of music that they have heard. They may take turns in copying short patterns in sound and anticipating their own short patterns being copied.

In the course of the Sounds of Intent project, the team considered various ways in which proposed patterns of development such as this could be depicted that would make them quickly and easily accessible while somehow representing visually the idea that one phase builds on those preceding without replacing them. The team also wanted the model to give a general feeling of growth and expansion – of moving out into the world from an inner core of self. After several attempts, the following approach was adopted that uses concentric circles (see Figure 1). Here, the phases are divided into three distinct sectors: ‘reactive’, ‘proactive’ and ‘interactive’. In music-educational terminology these correspond to ‘listening and responding to sound and music’, ‘causing, creating and controlling sound (including musical sounds)’ and ‘participating in sound and music-making with others’.



Fig. 1. Framework of musical development in the domain of PMLD (© Sounds of Intent research team, 2004)

In reality, the boundaries between segments as one moves in or out of the circle are not clear-cut like this, but fuzzy. And while it is possible to read across from one sector to another to segments that are in some sense equivalent (for example, 'encounters sounds', 'makes sounds accidentally' and 'chance interactions'), it is quite possible that a child's profile of development will not demonstrate this symmetry; experience to date indicates that, 'reactivity' is likely to lead 'proactivity' which in turn is likely to occur before 'interactivity'. Further work is required to see what form 'typical' profiles of development may take.

This framework has a number of possible uses which the Sounds of Intent team is actively exploring, and the current aim is to create an interactive version on a 'tablet' PC which will be available in the classroom or elsewhere. This may be used:

- a) as tool to assess the musical development of children with PMLD;

- b) to promote further development through providing suggestions of ‘what next’ through appropriate resources and teaching strategies; and
- c) to enable children’s progress to be recorded directly using a small digital video camera and microphone attached to the tablet PC.

It is anticipated that interaction with the framework will be via touchscreen technology. Teachers, therapists and carers (who may but need not be music specialists) will be able to draw down further information about each segment, including verbal material and video clips; they will be able to print out or listen to musical resources at the appropriate level; and they will be able to record their child to monitor and share his or her achievements and progress. Eventually, the programme may be web-based, to facilitate easy communication between schools and the research centre, to enable resources that are found to be useful to be shared easily, and to ensure that evolution of the framework is ongoing, relevant and responsive to real-life developments in the classroom and elsewhere.

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