

Education in music for children and young people with special needs¹

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Abstract

There is a growing body of scientific evidence to suggest that music making can generate long-term benefits to social, psychological and physical aspects of an individual's wellbeing. Although the mechanisms are yet not fully understood, music is neurologically modular and can significantly improve physical and mental health, promote cognitive skills, foster social inclusion and enhance an individual's self-regulation. Consequently, for everyone, but particularly for children with disabilities and special needs, such findings are likely to be of great value. Hence, drawing on current research findings, it is suggested that the global music research community, policy makers and other authorities need to acknowledge gaps in our understanding and designate more resources regarding future research. Moreover, they should strive for to enable a fully inclusive and high quality music education for everyone. The purpose of this article is to illustrate current findings in music education in relation to the wider field of children and young people with learning disabilities and special needs. The text also describes the *Sounds of Intent* project, which aims to map the musical profiles of differently-abled children and young people and to gauge their musical development over time. *Sounds of Intent* is the first empirically-based research project in the world to focus in detail on the musical development of children and young people with learning difficulties and makes the first attempt to set out how this may occur. In addition, this paper intends to explain some of the theoretical thinking underlying the project's development. Since its public launch in 2012, the Sounds of Intent web site has had over

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4,000,000 unique hits, with over 500,000 downloads of resources, from people all over the world and recently was adapted to create a mainstream version, *Sounds of Intent in the Early Years*, resulting in a fully inclusive enterprise for all children aged 0-5.

Musicality in children and young people with special needs

Engaging in music is a multi-faceted activity (Welch & McPherson, 2012; Ockelford, 2012). Performing, improvising and composing music or just listening or recalling a tune in one's head, is a matter that both requires a range of interrelated skills, such as cognitive abilities, creativity, physical skills and social and emotional intelligence. In this context, memory, auditory processing, imagination, physical generation of sounds, communication and self-regulation are just some of the key competences within a wide spectrum of intrinsically required capabilities (Pantev, 2009; Ockelford op.cit). Conversely, whilst many and various skills are required, engaging in music can also enhance these skills in terms of generating physical benefits, fostering an individual's musical development, and promoting cognitive, physical, social and emotional wellbeing (Welch & Ockelford, 2015). Hence, "musicality" is seen not a single skill, but rather an umbrella term for a profile of capacities, whose development and actualization will vary in shape according to an individual's disposition, physical and mental abilities, motivation and various other environmental and personal circumstances and factors (McPherson and Lehmann, 2012).

In this respect, even though their shape and dimension will vary amongst individuals, it can be stated that everyone is musical by design and a certain degree of musicality is universal, irrespective of an individual's disposition and circumstances (Welch & McPherson, 2012). Furthermore, the *Sounds of Intent* research evidence (reported in more detail below), suggests that this is also true for those with profound disabilities and the most complex needs (Ockelford, 2015; Ockelford, 2000). They too, possess musicality, are able to engage with music whilst some, even more, demonstrate just as wide a range of musical abilities as neurotypical people (Ockelford and Welch, 2012). These findings are applicable to children and young people with psychological disorders and mental health problems, who may make slower progress and have a lower level of attainment in comparison to their peers. Children with disorders relating to mental health fall within the definition of special educational needs. Regardless of the diversity of causes and different severities, their typical

impairments may relate to reading and writing difficulties, concentration problems, physical needs and/or the inability to socialise and make friends. Mental health issues, together with 'other-than-normal' behaviour, are also a much researched subject, and are being more and more addressed in the context of child health. It is reported that 'up to one in five children experience mental health problems' (Bor, Dean, Najman & Hayatbakhsh, 2014, p.606) and diagnoses of some particular disorders have increased over time (Bastra & Frances, 2012). Psychopathology, as a topic, has entered schools' discourse and mental disorders have become a 'parlance of childhood' (Harwood & Allan, 2014).

Since resultant consequences of the difficulties can be severe and impact negatively on children's emotional, physical and social development, these topics are not to be underestimated. Generally, special education may be regarded in part as a service, which may have integrated links into mainstream educational settings (Department for Education [DfE], 2014). Such provision is intended to respond to individual needs using a wide range of strategies and methods. In mainstream schools, the additional educational service often embraces different approaches to learning and teaching and aims to include children with special needs in the classroom structure (Department for Education and Skills [DfES], 2001). Teaching methods are modified to be beneficial for all pupils, including those with special needs (DfE, 2014, pp.30-31) and/or special assistants consulted (DfE The Special Educational Needs and Disability Regulations, 2014, pp.23-24). But where such an inclusive approach is not possible, nor desirable, children can attend special schools and be provided also with specialist external support (DfE, 2014, op.cit.; European Agency for Special Needs and Inclusive Education (n.d).

In this context, it is important to note that there is research evidence that music can be beneficial for these individuals. For instance, results of an EC-funded study into the Usability of Music for the Social Inclusion of Children (UMSIC) illustrates how engagement in music in a school setting, including pupils with special educational needs can be beneficial for all (Heikkinen et al., 2015). This study aimed to 'improve inclusion and reduce isolation in groups of children' and 'to support children's processes of social inclusion through the use of new music technology' (Fredrikson, 2009, p.1). In particular, the research foci were on pupils with moderate learning difficulties and attention deficiencies, and pupils with an immigrant background using a different native language from that of their host country. The project technical tool was the so-called *JamMo* (jamming mobile), which was designed for young

children to compose and share music. Findings from this study demonstrate that, overall, participants 'felt more socially included subsequent to the *JamMo* sessions compared to prior to them' (Purves et al., 2011 p.56). Moreover, a very significant observation was that there was good collaboration between pupils with special educational needs and learning difficulties and attention problems with their peers (Purves et al., op.cit.). Related evidence from other studies of music in special education illustrate the existence of musical intelligence, notwithstanding individual disability. For instance, children whose delayed global development results in a disability to communicate verbally, demonstrate that they can communicate musically by engaging in musical improvisation with others (cf Ockelford, 2011a; Ockelford & Matawa, 2010).

Importantly, the challenge for people such as policy-makers, education managers and practitioners involved in music education for children and young people, including those with special needs, is not about 'whether' to provide appropriate music education but rather 'how'. In this regard, insightful educators play an critical role in dismantling attitudinal and environmental barriers that prevent individuals from engaging in music in a universal and fully inclusive fashion, such that 'students with disabilities attend regular music classrooms in their schools, and are not isolated from their peers without disabilities (...) and participate with them in regular music classes and other age-appropriate school music activities' (Jellison, 2012, p. 66).

In this respect, it should be emphasised that music education is distinct from music therapy. Unfortunately, there is still a common assumption that the key approach to providing access to music for differently-abled children is music therapy (Ockelford, 2012; Ockelford 2000). This solely therapeutic approach, however, remains unquestioned and entails an impediment for a fully inclusive approach of engaging in music. Moreover, music therapy in terms of using musical elements and sound as a means to improve psychological, physical, mental and socio-emotional well-being, excludes the formalised educational goal of developing and improving musically. Generally, music education is regarded as related to the teaching and learning of musical skills, musical knowledge and an understanding of the nature of music. Simply put, the prime focus is education 'in' music (Ockelford, 2000). However, drawing on the aforementioned findings, formal music education for pupils and students with special needs has a more complex nature. It involves another strand: education 'through' music, whose aim is to promote wider learning and development along

with cognitive, social, emotional and communication skills and other competences (ibid). Hence, ideally neither should music therapy be a substitute for music education, nor music education be a replacement for music therapy. These two approaches can and should be complementary, with both driven by 'distinct musical and extramusical aims' (Bruhn, 2000; Robertson, 2000; Ockelford, 2000, 2008; Markou, 2010). Thus, for children, but particularly for those with special needs, 'engaging in appropriate musical activity means that the benefits of education in music are intertwined with an education through music' (Welch & Ockelford, 2015, p.2) and should be unconditionally available. In addition, their musical development can and should not only be fostered within a therapy room but rather beyond. No child should be refused such education, inclusive of music therapy and music education, nor hindered in tapping their full potential in terms of social, academic and personal achievements, together with the highest musicianship attainable (Gfeller, 1999).

The neglected area of research in music education for children with learning difficulties and special needs

Although the benefits of music education for individuals are widely acknowledged today, children and young people with special needs are still underrepresented in research in the field of music education and psychology (Jellison, 2000) and, as it was more than a decade ago, music still 'is not widely used in the field of learning disabilities' (Savarimuthu et al, 2002, p. 160). Unfortunately, policy makers, governments and local politicians show a lack of understanding of the great value of systematic music engagement for children, especially for those with special needs. One reason for the serious shortcomings in this regard might be the fact that, by definition, 'special' children are in a minority and hence a marginalized group. Consequently, they do not get as much attention from education as they should. Thus, in order to advance music education for those with special needs, both in policy and practical terms, high-quality research-based evidence continues to be needed. The global music education research community should acknowledge deficiencies in this area and point out serious shortcomings in order to claim and designate more resources to this field of neglected research and so address the needs and concerns of children with special needs. In this regard, three reasons can be stated as to why these children's needs need to sit at the heart of music education.

Firstly, there is an ethical imperative underlying the commitment to equality of opportunity. There is need to enable all young people to access high quality music making. Provision should be improved for everyone, including those who share particular characteristics, needs and abilities. Therefore, issues that hinder or promote such young people's progress need to be systematically approached and tackled.

Secondly, we should seek to understand how individuals function in exceptional circumstances and with special needs, including those with severe or profound disabilities, so we can better understand how we all function, feel, think and behave. If we approach this open-mindedly, powerful insights can shed light on to what musicality is and what it means to be musical (Lubbock, 2008; Ockelford, 2011b). Subsequently, seeing musicality in the light of its wide neurological modularity could encourage a deeper understanding and resolution of the nature/nurture debate in music education (Ockelford, 2011c). Examples of profiles of individuals with congenital disabilities engaging with music in rich musical environments illustrate that peaks an environmental effect are operating within a genetic predisposition and can result in peaks of music-perceptual and cognitive performance. For instance, approximately 40% of children with little or no sight go on to develop absolute pitch in the first two to three years of life, among them around 5% with autism (Ockelford, Pring, Welch, & Treffert, 2006; Ockelford & Matawa, 2010). In another example, a recent study conducted in a London primary school focused on the beneficial effects of singing on hearing-impaired children's hearing abilities and voice use in the first years of schooling (Welch et al, 2015). Findings support an assumption that individuals with disabilities, including hearing, can develop musically. In this study, the particular focus was on building a repertoire of simple songs along with musical activities, vocal explorations visual imagery for sound. The assessment of the programme consisted of pre- and post-intervention measures of pitch discrimination, speech perception in noise and singing competency. Overall, findings show that the specially designed music programme (singing and vocal exploration sessions), conducted regularly across two school terms, generated improvements in these children's singing accuracy and vocal range as well as their normal hearing peers. In addition, the sessions significantly enhanced general pitch perception (Welch et al, op.cit.).

Lastly, by researching, and designing developmentally relevant musical programmes, activities and practices for children with special needs, we might develop universal approaches that would be likely beneficial not just for special groups who share certain

characteristics, but also for everyone, including able bodied people (Jellison, 2012). Furthermore, a fully inclusive fashioning of music education could pose a promising means of social inclusion, especially to those who are a minority and at risk of marginalization.

The establishment of the *Sounds of Intent* project

Almost two decades ago, the field of music education for children with learning difficulties and special needs was not represented in research. Using this knowledge, a position paper was produced to illustrate the current issues at that time regarding UK provision in this area. The aim was to postulate a new framework for teachers and therapists and to indicate potential areas for investigation (Ockelford, 2000). Subsequently, various initiatives followed, including doctoral studies (Cheng, 2009; Markou, 2010). At the same time, a survey—the Provision of Music in Special Education—later known as the PROMISE report, investigated the nature of music provision for 2,758 pupils offered in 52 special schools in England for children with learning difficulties (Welch et al., 2001; Ockelford et al., 2002). Findings from the survey supported the general assumption that there might be potential benefits from music on wider learning and well-being for children with severe learning difficulties (SLD) or profound and multiple learning difficulties (PMLD). Moreover, the survey showed that this field *per se* was an area of development (Welch et al., 2001). Additionally, in spite of the widely recognised positive impacts of music on those children, there was a lack of guidance as to how approach, design and provide music education for such children.

Subsequently, these early initiatives led to the evolution of the Sounds of Intent (Sol) project—a collaborative research initiative by the UCL Institute of Education (known then as the Institute of Education, University of London), Roehampton University, and the Royal National Institute of the Blind, with colleagues from the special education school system who had attended the London launch of the PROMISE report. Sol's purpose was to map the musical development of children and young people with the complex needs (Ockelford et al., 2005; Welch et al., 2009; Cheng et al., 2009; Vogiatzoglou et al., 2011; Ockelford and Zapata Restrepo, 2012), and to investigate how best to nurture such development. Participating special schoolteachers and core members of the research team were collected, compared and collated individual case study data of children and young people (see below). Data were synthesised into a series of musical development 'maps' that were evaluated and trialled, seeking the best possible visual representation of the data. The intention (subsequently

realised) was to create an interactive, web-based version of the resulting developmental framework. This would enable practitioners and parents to assess and rate their children's musical attainment and changes over time and in response to particular interventions. Furthermore, the framework would allow users to record qualitative observations in the shape of verbal, video or audio data. In short, using the Sounds of Intent framework, the musical profiles of children with complex needs and their musical experiences, achievements, as well as the nature and degree of their development could be built up, assessed and mapped (see www.soundsofintent.org).

Setting up Sounds of Intent

The Sounds of Intent research team adopted a “bottom up” approach for this project and right from the starting point collaborated with a group of practitioners, including music therapists, teachers and others. The intention was to develop accurate and shared definitions of the various and different natures and manifestations that they had observed amongst their students with SLD and PMLD. Additionally, detailed analyses of case study video recordings were undertaken in order to gather typical, exceptional or particularly interesting musical behaviour among their pupils and students, embracing a very wide range of needs and abilities. Their actions, reactions and interactions were, for example, noted as follows:

Abigail sits motionless in her chair. Her teacher approaches and plays a cymbal with a soft beater, gently at first, and then more loudly, in front of her and then near to each ear. Abigail does not appear to react.

Rosina is lying in the “Little Room”, vocalising in an almost constant drone. Occasionally a sudden movement of her right arm knocks her hand against a bell. Each time, she smiles and her vocalising briefly turns into a laugh.

Taybah brushes her left hand against the strings of guitar that someone is holding near to her. There is a pause and then she raises her hand and brushes the strings again, and then for a third time.

Wendy giggles when people repeat patterns of syllables to her such as “ma ma ma ma ma”, “da da da da da”, or “ba ba ba ba ba”.

Carol copies simple patterns of vocalisation – imitating the ups and downs of her speech and language therapist's voice.

Emily makes up songs with short phrases that sound connected – and when her teacher listened carefully to a recording that she had made of Emily's singing, she noticed that one phrase often started more or less where the other one left off.

Faisal has severe learning difficulties and hemiplegia. He plays the keyboard with his left hand only, learning material by ear. He has recently joined the school's band, and has found a role for himself

playing the bass parts. Now he not only picks up on what the left hand of the other keyboard player is doing, but he has started to improvise around the harmonies too.

Examples such as these illustrated that it would be almost impossible to conceptualise these children’s musical profiles and development in terms of a single dimension. Subsequently, following thorough discussions within the Sounds of Intent research group, three domains evolved that were believed to summarize and represent the different forms of musical engagement. Furthermore, the domains needed to pose meaningful and useful descriptors for practitioners and other involved people. Consequently, the following domains were established: (a) “reactive” in terms of listening and responding to sound and music; (b) “proactive” with regard to creating music oneself; and (c) “interactive” representing engagement with sound and music in the context of a group (Ockelford, 2008; Welch et al, 2009). Furthermore, it became evident that the observed musical behaviours varied in their developmental range and levels ranging from what seemed to be a zero point or the very beginnings of musicality, to very high levels of musical engagement. Subsequently, the group came to the conclusion that music-cognitive development in children with special needs and development could be conceptualized and graphically illustrated in terms of various levels.

Table 1: The six levels underpinning the Sounds of Intent framework (acronym ‘CIRCLE’)

Level	Description	Acronym	Core cognitive abilities
1	Confusion and Chaos	C	None: no awareness of sound as a distinct perceptual entity
2	Awareness and Intentionality	I	An emerging awareness of sound as a distinct perceptual entity and of the variety that is possible within the domain of sound
3	Relationships, Repetition, Regularity	R	A growing awareness of the possibility and significance of <i>relationships</i> between the basic aspects of sounds
4	Notes Forming Clusters	C	An evolving perception of <i>groups</i> of sounds, and the relationships that may exist between them
5	Deeper Structural Links	L	A growing recognition of whole pieces, and of the frameworks of pitch and perceived time that lie behind them
6	Mature Musical Expression	E	A developing awareness of the culturally determined ‘emotional syntax’ of performance that articulates the ‘narrative metaphor’ of pieces

Mapping of the Sounds of Intent framework

With further analyses, each of three domains (reactive, proactive, interactive) were underpinned by and further subdivided into six levels, which described the development of core cognitive abilities. These were labelled as: (1) Confusion and Chaos; (2) Awareness and intentionality; (3) Relationships, Repetition, Regularity; (4) Sounds forming Clusters; (5) Deeper structural Links; (6) Mature Artistic Expression (see Table 1) (Ockelford and Welch, 2012). Furthermore, these six levels extended across the three domains of musical abilities and were divided into overall 18 segments, represented in circular form (Figure 1). This meant that each level was divided into three types of musical engagement; one belonging to and indicating the reactive domain “R”, another for the proactive “P”, and a third for the interactive “I” domain. These segments were regarded as most appropriate to represent children’s development in the data, i.e., beginning in the centre of the framework and developing towards the outside; ranging from a focus on self to increasingly wider communities of others.

Moreover, after more extended piloting and subsequent evaluations, modifications and discussions, the research group decided to break down each segment further. In this respect, each of these 18 descriptors was divided into further four elements to reflect more illustrative detail (see Table 2). In a broader sense, the elements describe the engagement with sound and music in relation to other sensory input, and the remainder to technical matters pertaining to performance.

Table 2: Example Sol framework Elements (A, B, C, D) for the initial three segments in each domain (R, P, I)

REACTIVE DOMAIN			
Level	R.1	R.2	R.3
Descriptor	encounters sounds	shows an emerging awareness of sound	responds to simple patterns in sound
<i>Element A</i>	is exposed to a rich variety of sounds	shows awareness (of a variety) of sounds	responds to the repetition of sounds
<i>Element B</i>	is exposed to a wide range of music	responds differently to sound qualities that differ (eg loud/ quiet), and/or change (eg getting louder)	responds to a regular beat
<i>Element C</i>	is exposed to music in different contexts	responds to sounds increasingly independently of context	responds to patterns of regular change
<i>Element D</i>	is exposed to sounds that are linked to other sensory input	responds to sounds that are linked to other sensory input	responds to sounds used to symbolize other things
PROACTIVE DOMAIN			
Level	P.1	P.2	P.3
Descriptor	makes sounds unknowingly	makes or controls sounds intentionally	makes simple patterns in sound intentionally
<i>Element A</i>	sounds made by life processes are enhanced and/or involuntary movements are used to make sounds	makes sounds intentionally, through an increasing variety of means and with greater range and control	intentionally makes simple patterns through repetition
<i>Element B</i>	sounds are made or controlled through co-active movements	expresses feelings through sound	intentionally makes a regular beat
<i>Element C</i>	activities to promote sound production occur in a range of contexts	produces sounds intentionally in a range of contexts	intentionally makes patterns through change
<i>Element D</i>	activities to promote sound production are multisensory in nature	produces sounds as part of multisensory activity	uses sound to symbolize other things
INTERACTIVE DOMAIN			
Level	I.1	I.2	I.3
Descriptor	relates unwittingly through sound	interacts with others using sound	interacts imitating others' sounds or through recognizing self being imitated
<i>Element A</i>	co-workers stimulate interaction by prompting with sounds and responding to any sounds that are made	sounds made by another stimulate a response in sound	imitates the sounds made by another
<i>Element B</i>	co-workers model interaction through sound	sounds are made to stimulate a response in sound	shows awareness of own sounds being imitated
<i>Element C</i>	activity to promote interaction through sound occurs in a range of contexts	interactions occur increasingly independently of context	imitates simple patterns in sound made by another
<i>Element D</i>	some interaction is multisensory in nature	interaction through sound engages other senses too	recognizes own patterns in sound being imitated

Hence, the relation within level descriptors and elements and between the three domains is complex. Furthermore, level descriptors are in a hierarchic structure, whereby achievement of higher levels depends on the accomplishment of all preceding within a domain. Between domains, the contingency appears to run fluently from reactive to proactive and then to interactive. Moreover, the arrangement of the contingencies that links all 72 elements is complex in its nature and intricate, too. Despite an occasional inevitable connection between elements at different levels within and between domains, connection is not universal for the whole framework—in the sense that being observed at one level in one

domain does not necessarily imply an equivalent level in another. Consequently, this confirmed the research team's view that musical development was multi-layered and multi-stranded in its nature and, therefore, such intricacies are characteristic and inevitable. So it appeared very likely that an individual had a multi-faceted musical-developmental profile rather than just being at a particular single point of musical development—a hypothesis subsequently confirmed in more detailed empirical studies (see below).

As a result of the initial exploratory mapping activities, the question arose as to how the Sol framework could work as a practical assessment tool for practitioners and enable them to record the pupils' achievements, changes over time and evaluate impacts resulting from musical interventions.

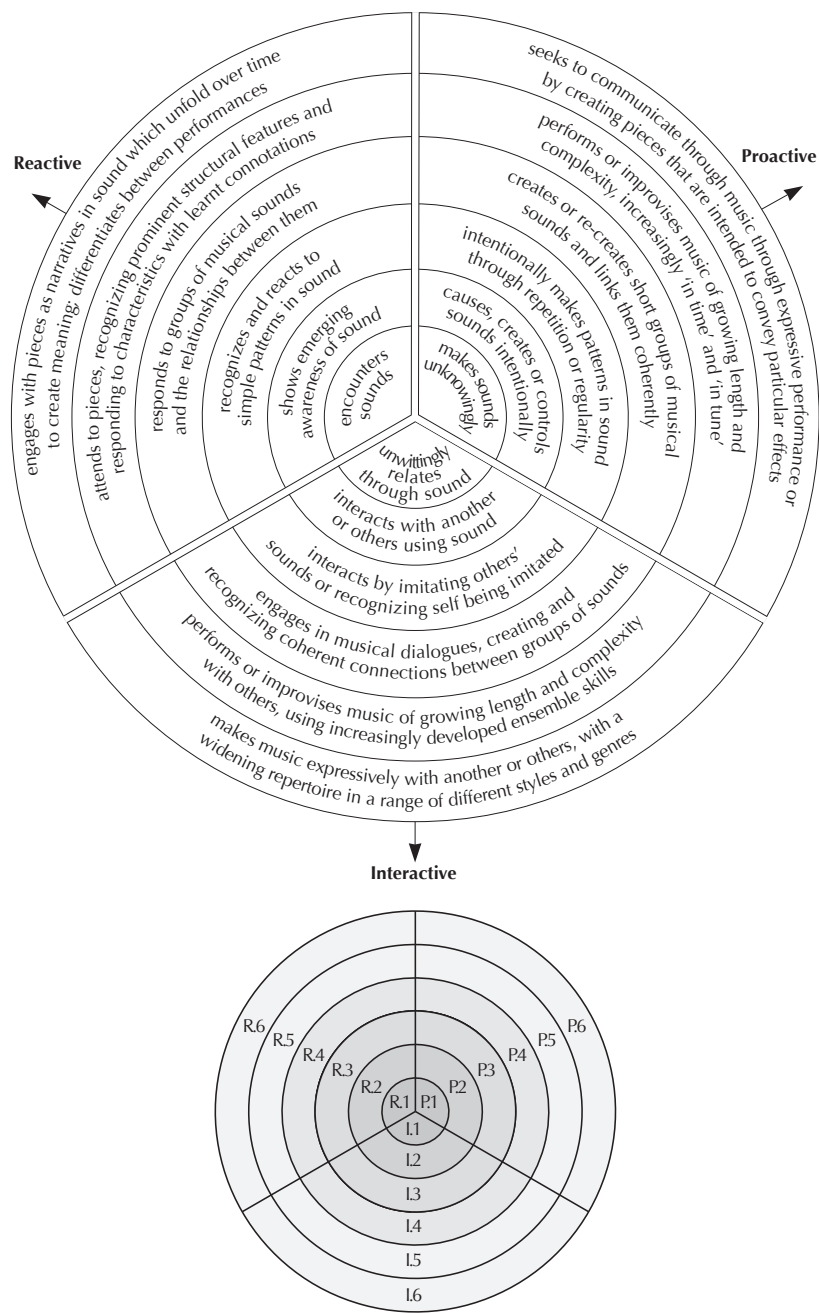
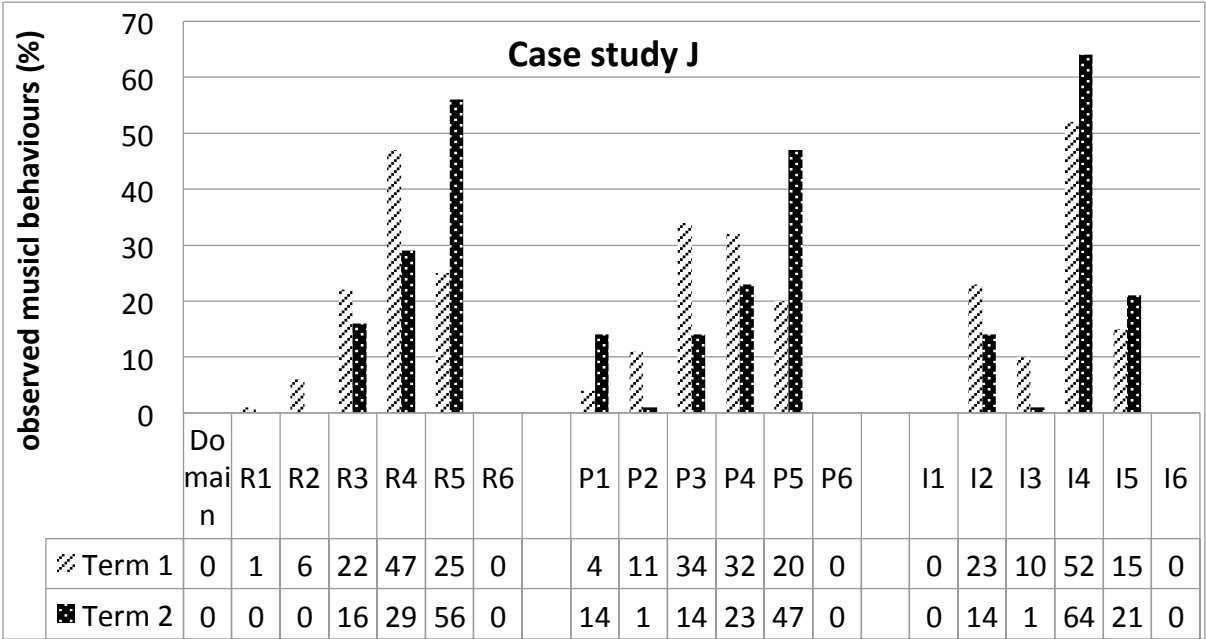


Figure 1: Representation of the *Sounds of Intent* framework

Empirical explorations of the sounds of Intent framework

The first extended empirical exploration of the framework was undertaken by Evangeline Cheng, a doctoral student at the UCL Institute of Education, London. She tested and applied the framework using a number of longitudinal case studies (Cheng et al., 2009; Cheng, 2010).

She observed several young people with severe learning difficulties engaged in music sessions in a special school and assessed them accordingly to the Sol Framework, recording the frequency with which given levels of engagement were observed, session by session. Three particular cases formed the focus for the doctoral thesis, with observations being drawn regularly between eight to thirteen months, i.e., one case for two school terms, and two others for a whole calendar year. In each case study, there was evidence of musical progress over time, with more advanced behaviours emerging longitudinally (see Figure 2[a,b,c], Cheng, 2010). The pattern of observed responses generally indicated a shift towards the outer levels of the framework. Nevertheless, it was also evident from these three cases that musical progress was not straightforward. For each young person, a wide range of musical behaviours were evidenced across domains and their segments in the opening term and also subsequently.



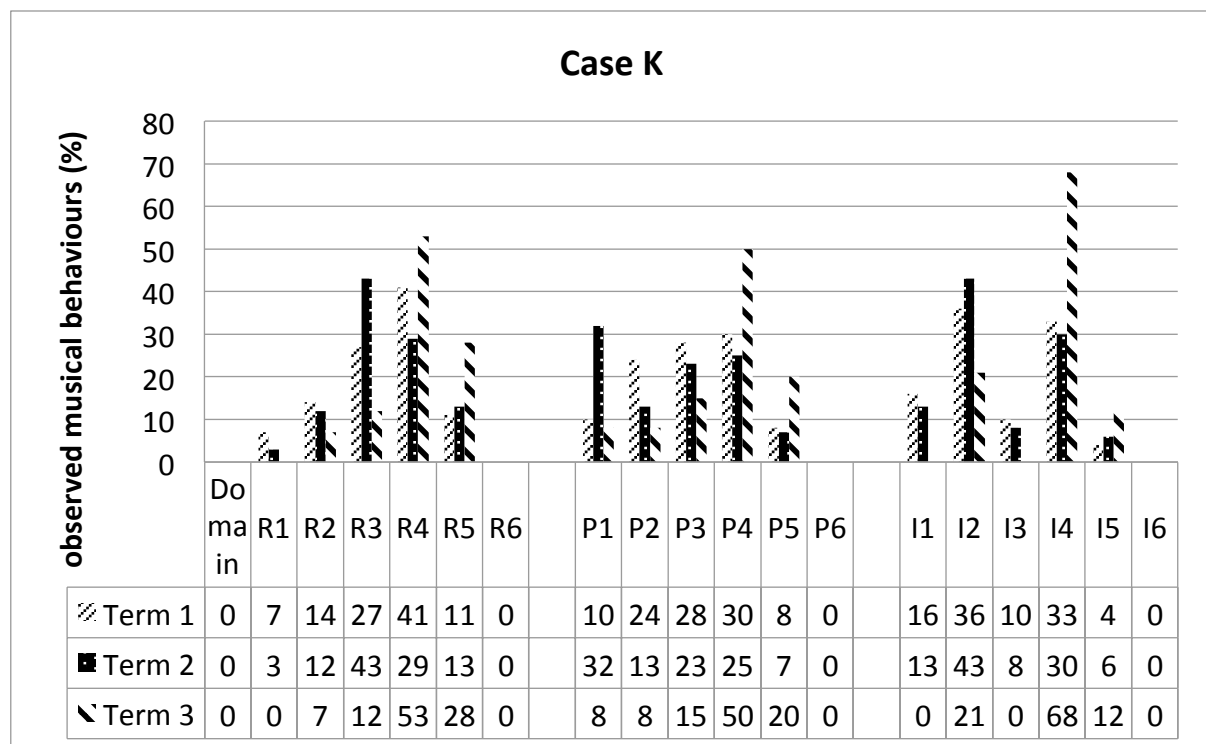
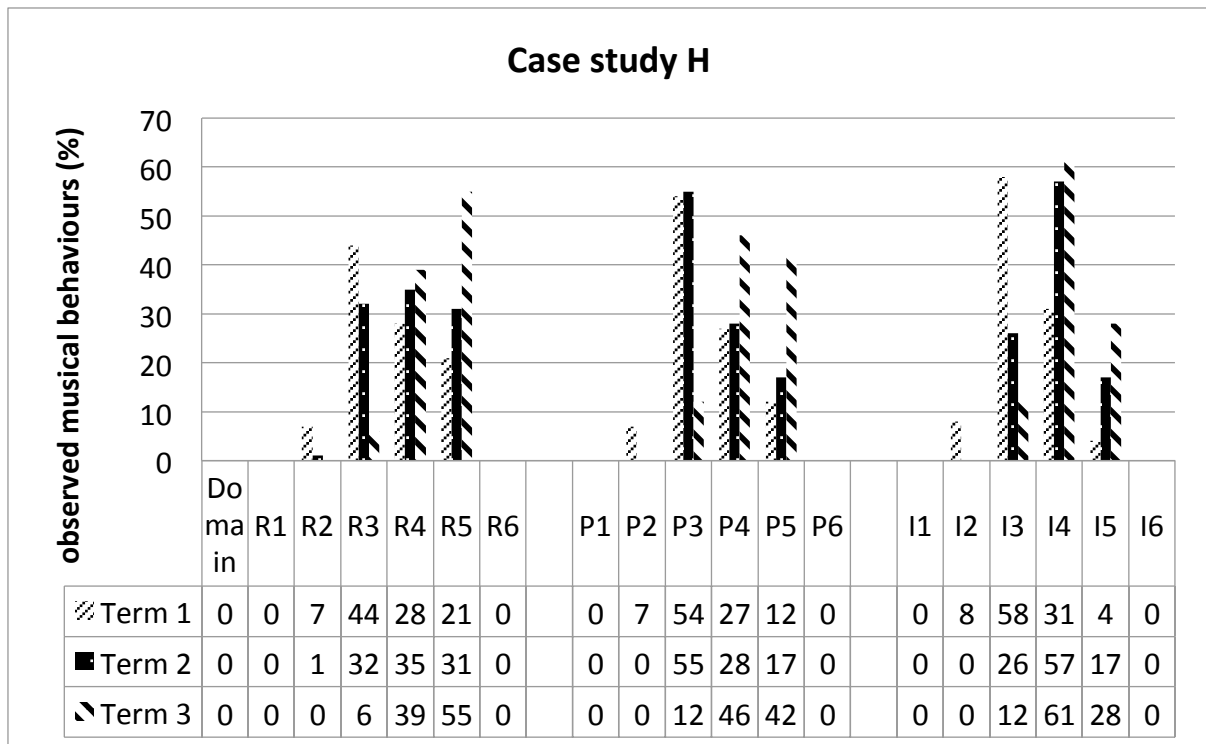


Figure 2 [a,b,c]: Summary of the Sounds of Intent profiles of each the three cases for two school terms (Case J) and three terms (Cases H and K) (Cheng, 2010)

It was evident from the Cheng (2009) data analyses that more subtle intra-personal changes could be mapped if the elements themselves were sub-divided into different degrees of engagement. Hence, to test this principle, the research team conducted further exploratory empirical work.

The second empirical exploration of the Sol project focused on 20 young people with PMLD from the Linden Lodge School in south-west London. The pupils' ages ranged from 11 years 11 months, to 17 years and seven months and came from a wide variety of ethnic and cultural backgrounds. All pupils illustrated profound levels of global developmental delay: none was verbal and the great majority were wheelchair users; many were visually impaired. The exploration was conducted in the context of weekly music sessions lead by Adam Ockelford in the Spring and Summer terms of that year—a total of 24 sessions of 45 minutes each. The format of these lessons was kept the same throughout the whole time period. The work took place in the pupils' classrooms and each student had a one-to-one teaching assistant; everyone sat in a circle. The materials which were used for this study were taken from *All Join In!* (Ockelford, 1996). This is a set of 24 specially designed songs that offer a framework for music making with young people who are visually impaired and have learning difficulties. In this particular instance, the songs could be accompanied by a touch-sensitive keyboard that was provided in the room.

Additionally, the music teacher at the particular school, Lamorna Jewell-Gore, participated in all sessions and supported the staff. On six occasions she took over the role of an observer who observed each of the participants and mapped the behaviours of musical reactivity, proactivity and interactivity onto the Sol framework. She gauged which element matched the description best and graded them as “low”, “medium” or “high”, according to whether or how the behaviour offered a fit. Moreover, she assigned a rank to each of the descriptions on an ordinal scale, according to its position within the Sol framework, whereby activity at Level 1 (low) was categorised as “1”, Level 1 (medium) was classed as “2”, Level 1 (high) was allocated “3”, and so forth in order to facilitate analysis of the data . As a supplement, video recordings were made for later reference. Her comments offered these examples:

“J” “showed slight reaction to loud noises but no reaction to localised instruments playing. Did not [...] change reaction to change in tempo/dynamics” – assessed as R.1.A (low).

“G” “laughed each time the tambourine was hit, and responded to sudden chord changes” – assessed as R.2.A (medium).

“A” “vocalised throughout songs and changed notes with key change” – assessed as I.3.A (low).

“B” “laughed at a particular motif played on the piano” – assessed as R.4.A (low).

“L” “reacted to people playing matching sounds, eyes looking from one to the other” – assessed as R.3.A (low).

“D” “listened to sounds made by the other children, sometimes just looking, sometimes smiling, sometimes laughing” – assessed as R.2.B (high).

“Q” “laughed a lot when his own made-up musical sounds were imitated (the ‘wah wah’ song)” – assessed as I.3.B (high).

Over the course of the sessions, there was an attendant increase in classifications from Level 1 to Level 3. This trend can be gauged comparing means of the reported ranks, session by session, which indicate a proxy indication of the children’s changing perceived level of musical engagement, equivalent to one Sounds of Intent level in 18 months. Nevertheless, various extensive experiences with such children represented in the exploratory research suggested that this level of development over this particular timeframe would be very unusual. This led the researchers to assume that there may be exceptional factors at work in the study. These could be (a) the routine and familiarity with the materials, which may have been the reason for the pupils to engage more fully over time; (b) the knowledge of the pupils deepened, which may have resulted in a more effective scaffolding of interactions as the time went on; (c) Jewell-Gore’s observation became more perceptive and the practice with the framework became more advanced over the two terms; and (d) Jewell-Gore’s wish for progress may have subconsciously influenced her categorization.

Finally, a particular method of cross-checking the results (taking advantage of the variation in age of the participants) suggested that progress may occur at a much slower pace and rate than Jewell-Gore’s observation indicated. Certainly, conclusions here must be tentative given the analysis assumes that the variation by age reflects longitudinal change rather than differences between the young peoples’ abilities. Overall, much more data would be needed to quantify and segregate the different factors and determine how they interrelate. Here, it is important to note that this could be possibly done by using the Sounds of Intent approach and a more extensive dataset.

As a result, observational schedules may need to be even more detailed and refined than the system used by Jewell-Gore in order for practitioners to chart the detail of musical progress meaningfully over time. Furthermore, Cheng's research indicates that not only levels of engagement, but also the relative frequency with which the various behaviours appear must be considered. Thus, a more advanced system of data collection was developed, in which both these parameters are represented (see www.soundsofintent.org).

Current status of the Sounds of Intent project

Initial empirical data generated from two research projects both show musical progression on the part of the children and young people concerned and supported the design, content and structure of the Sounds of Intent music development framework. Although future research will suggest refinements to the model, it has been important that, for the first time, practitioners and carers have an empirically grounded tool to use as a basis for musical assessment and planning in their work with pupils and young people with special needs that is both grounded in ecologically valid observation and is theoretically coherent. Since its public launch in 2012 where the Sol framework was made fully available to practitioners, the website has had over 4,750,000 unique hits (to August 2015), with over 650,000 downloads of various resources by people from all over the world. There are over 600 registered users and 250+ practitioners actively and regularly using the tool. Data have been collected on nearly 3,000 children and young people, representing 180+ special schools or schools with specialist units/provision. Over 7,000 sessions have been recorded. In addition, the international interest in the framework has led to versions being used (in English or translation) in the USA, Haiti (Creole), Spain (Spanish and Catalan), Portugal (Portuguese), Colombia (Spanish), Taiwan (Chinese), Japan (Japanese), the Netherlands (Dutch) and Pakistan (Urdu).

Most recently, an additional early years version of Sounds of Intent—a fully inclusive enterprise for all children aged 0-5—has also been launched (see eysoi.org).

Summary

There is a growing body of research literature to suggest that education *in* music and *through* music can generate long-term benefits in social, psychological and physical aspects of an individual's wellbeing, including those with special needs and abilities. The findings, from the neurosciences as well as social sciences of psychology and education, offer evidence that observable musicality is modular, in the sense that different musical behaviours are related, yet can also be relatively discrete. The evidence also suggests that everyone is musical to a certain degree and possess the ability to engage and develop in music in various ways and accordingly to their personal interests and abilities. For those working in the field of special as well as mainstream education, these findings should be used both to promote more effective support in engaging with music as an activity in its own right, as well as motivating them to use music as a scaffold to structure other learning and development. In this respect, the Sounds of Intent framework was established in order to enable practitioners, teachers and carers to observe, map and gauge their students' and children's musical profiles. Furthermore, they can chart their levels of reactive, interactive and proactive engagement and development over time and note changes in musical behaviour in relation to particular musical interventions. Nevertheless, the global music education research community needs to use such data (and more) to spearhead changing attitudes to disability in music education and promote a fully inclusive engagement in music—for everyone, not just for some.

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