

EARLY YEARS EVIDENCE REVIEW

ASSESSING THE OUTCOMES OF EARLY YEARS MUSIC MAKING

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Contents

Executive Summary.....	3
Introduction.....	5
1. What evidence base exists of peer-reviewed research articles relating to early years music making?.....	6
2. Which developmental outcomes resulting from musical exposure in the early years are demonstrated by research evidence?.....	8
3. Which outcomes are commonly reported by Youth Music projects and how do these relate to the other sources of evidence?.....	15
4. What issues have been identified in early years music provision (based on published research and Youth Music evaluation documentation)?.....	19
Appendix 1 – Youth Music Early Years Work (2000-2009).....	22
Appendix 2 – Methodology.....	23
Bibliography.....	28

Executive Summary

A systematic review of published research on the effects of early year's music making was carried out to update Youth Music's strategic focus. Studies published between 1999 and 2009 were included and a search of gray literature was also conducted. This resulted in 17 published articles relating specifically to outcomes of music making and musical exposure in the early years. A second phase of the research studied Youth Music project and programme evaluations in order to identify further evidence of outcomes for music making in the early years.

The published research was reviewed in four sections; music perception, musical behaviour, parent-child communication, and transfer effects. The studies concerning musical perception indicated that children have sophisticated musical understanding and engagement skills from an early age and that delivery of music making should be designed with this in mind. The section on musical behaviour showed how music was often integrated with other tasks and that pre-school children develop tastes and preferences determining their musical choices and actions. Research also indicated many benefits from music making for parent-child communication. Further research showed how music making in the early years can lead to developments in phonological awareness and brain development that has been linked to improvements in reading and language skills.

The evidence provided in Youth Music project evaluations indicated several other important outcomes. Reports focused on an increase in musical confidence and improvements in language and integration for children with English as a second language. In addition, many reports highlighted how music making was often most successful when integrated with other arts and that many organisations had developed music based learning resources as a consequence of funding.

An issue raised by the findings was the relative lack of published research relating specifically to early years music making. Similarly, the difference in outcomes reported in published literature from those reported by funded projects suggests that further empirical research could be better integrated into delivery contexts (perhaps as action research). A lack of formal training opportunities for music leaders and early year's workers was also recognised and highlighted as a priority for ensuring quality and consistency within the sector. The document also emphasises a need for wider discussion around the funding structures and requirements for early years music making.

The evidence review has provided a timely point of reflection in the midst of Youth Music's strategic development and there are a number of points of action that can be taken forward. More importantly the document raises key questions and issues for discussion which can be developed within sector wide consultation.



Introduction

The purpose of this document is to investigate recent evidence concerning the benefits of music making in the early years. Early years refers to the life stage between birth and 5 years, a time of great physical, cognitive, emotional, and social development for children in the home, and in formal and informal education settings.

Early years has been a strategic focus for Youth Music since it was established in 1999. A guiding principle of the organisation has been that early exposure to music making has a number of benefits for infants and their carers and that every child should be given access to music making opportunities from as early an age as possible (Henderson & Coker, 1999a, 1999b). This principle has led to the development of a number of programmes and schemes to facilitate early years music making and ensure that delivery is broad, consistent, and of high quality .

One consequence of the breadth of work funded and delivered over the past ten years is a lack of clarity over the exact differences or benefits music making can hope to affect in children and their carers. The initial strategic focus was based on consultation across the music education, research and early years delivery sectors, however much has changed in each of these sectors since 1999. The aim of this document is to update the knowledge and thinking about the benefits of music making in the early years based on recently published research and on the evaluations of Youth Music early years programmes and projects to date. In so doing, this document can also act as a reference point for Youth Music's continued strategic focus on music making in this crucial period of the lifecourse.

The more specific research questions addressed by this review are as follows:

1. What evidence base exists of peer-reviewed research articles relating to early years music making?
2. Which developmental outcomes resulting from musical exposure in the early years are demonstrated by research evidence?
3. Which outcomes are commonly reported by Youth Music projects and how do these relate to the other sources of evidence?
4. What issues have been identified in early years music provision (based on published research and Youth Music evaluation documentation)?

This review was conducted in two stages; the first consisted of a systematic review of published peer-reviewed research findings and gray literature; the second involved a review of programme evaluations and project final reports from Youth Music's archive. A full discussion of review methodology is provided in Appendix 2.

Early years music making has been investigated from a range of academic disciplines (neuroscience, psychology, sociology, education), with many effects and outcomes observed. However, it is rare that these disparate observations are brought together in one document. Therefore, although this (or indeed any) review cannot claim to be exhaustive, the method adopted does make it comprehensive and replicable.

¹ A timeline of Youth Music's early years work between 2000 and 2009 can be seen in Appendix 1

1. What evidence base exists of peer-reviewed research articles relating to early years music making?

The systematic review resulted in 17 peer-reviewed journal articles published between 1999 and 2009 relating directly to the effects of music making in the early years. The relatively low number of articles is perhaps reflective of the criteria for inclusion that guided the search. A number of articles initially retrieved were theoretical in nature or did not refer to early years directly (i.e. their titles implied they were early years articles but they were actually concerned with a later stage of childhood).

This latter point is particularly prescient when previous work on the effects of early years music making is considered. The relative paucity of published research directly relating to early years has led some previous authors to apply findings from other stages of the lifecourse to an early years context. This is potentially detrimental since the early years stage is developmentally unique and experienced in a broad range of contexts quite distinct from later periods of childhood (e.g. a greater amount of time in informal education and domestic settings). Similarly, whilst there is greater isolation of music making and training from other disciplines in later childhood and adolescence (as school subjects, for instance), this distinction is not so clear in the early years and will have consequences for how the effects of music making are measured and reported; children in the early years learn differently which affects the outcomes of the learning process (Young, 2005).

The development of musicality as an outcome in itself is a key aspect of infant and early childhood development. A focus on transfer effects (i.e. how music making improves reading, writing, general intelligence, or wider communication abilities) is often premature and at the expense of further investigations of emerging communicative musicality (Trevarthen, 2002). The search for a musical panacea that makes young children stronger, brighter, happier or better adjusted should not overwhelm approaches highlighting the value of musicality itself. This assertion was borne out by the relative lack of research articles claiming to definitively prove transfer effects. Whilst there is growing evidence of how musical interaction is linked to wider developmental outcomes, a broader range of studies were concerned with music perception or musical behaviour in young children as the focus of their work. This suggests a reframing of a dominant approach in early years music making, away from the dominant implications of transfer effects and towards young children's entitlement to musicality and cultural expression more generally.

Malloch and Trevarthen (2009) discuss how musicality is intrinsic to communication between parents and infants. Based on experiments looking at parent-child interaction they suggest that the development of thought and language is musical in form and that musicality is present from birth across all cultures. If this is the case, traditional approaches to early years 'music delivery' may need to be re-framed to consider how intrinsic musicality is present at all levels of communication and learning. Rather than music education as something that is done to children, there is a growing body of work suggesting that human thought, communication and language is based on musical foundations (i.e. to be human, is to be musical) and this should be considered in how 'music-making' is considered and 'delivered'. Whilst this work does not fall under the remit of the research brief in the current review, its importance is recognised and the wider theoretical developments of communicative musicality should be considered in future research investigating early years music making.

The 17 articles included in the review came from journals representing several disciplines. Nine were from explicitly psychological journals, three were from education journals, four were from early years journals and one was from a general scientific journal. This variety indicates that the evidence base for the effects of early years music making is wide, if not abundant, and some degree of consolidation is required.



In addition to the journal search, the websites of leading early years service providers and relevant government departments were searched for documents relating to music making. The aim was to identify research reports investigating specific outcomes as a result of musical activity; however, no site had such studies listed or public reports available. This review of gray literature also highlights how much of the knowledge within the sector comes from experiential (non-published) data, or from sources referring to other stages of the life course. More crudely, the review of gray literature showed how many exaggerated claims were being made about the benefits of early years music making, but with no supporting evidence supplied. The same cautions identified above apply in disseminating and using this information as a justification for investment in an early years music strategy. Experiential data and knowledge coming from provision and delivery is valuable, yet due to the wide range of claims being made about music making in the early years, the way this evidence is presented could be clearer. This document aims to contribute to Youth Music's outputs in this respect since many organisations in the sector look to Youth Music as a source of information, guidance and evidence.

Overall, a systematic review of several databases and search engines returned relatively few articles measuring the effects of music making in the early years. It should be noted that this does not necessarily reflect the amount of research work completed or ongoing on the subject, but highlights how caution should be exercised in disseminating conclusions about the benefits of early years music making. A consensus has not yet been reached.

With a relatively slim, but growing, evidence base, the door is open for further contributions from across the academic and early years sectors and underlines the timeliness of this document. The following section outlines the various outcomes presented in the research evidence and how this can provide a framework for further examination of Youth Music's work in the early years sector.

² One website claims that their method of teaching results in 'Every child going through [approach] acquires an acute ear and makes rapid progress on their chosen instrument, as well as singing in tune and performing confidently in public' [my emphasis].

2. Which developmental outcomes resulting from musical exposure in the early years are demonstrated by research evidence?

The outcomes presented in the research findings can be divided into four categories; Music Perception; Musical Behaviour; Parent-Child Communication and Transfer Effects. This division is somewhat arbitrary since many findings are relevant across all four categories; however, it is useful for structural and presentational purposes.

Music Perception

In order to understand how young children can effectively engage in music making it is important first to explain how they listen to and perceive music. Music perception is concerned with the way people listen to and discriminate between different musical forms, as well as how this influences their wider cognitive functioning and development (i.e. musical understanding). A study of music perception in the early years is essential to contextualise what can and cannot be achieved or understood in a music making situation. One of the main facets of music perception is the development of musicality and this can be seen in the studies relating to perception retrieved as part of the review.

Schellenberg and Trehub (1999) studied the music discriminatory abilities of 9 month olds and 5 year olds. They found that infants could tell the difference between conventional and unconventional melodies with a high resolution, but not those with a low resolution (i.e. an 'unexpected' irresolute last note). The older children could tell the difference between all melodies, as can adults. Infants reacted more strongly to changes in 'simpler' (i.e. high redundancy) melodies, implying that developmental processes affect the discriminatory power of musical perception. As people are encultured and trained in lower redundancy musical forms their discriminatory power increases. The development of low and high redundancies gives rise to what is considered 'good' or 'normal' (i.e. prototypical) melodic form in a particular culture. This is a similar process to language acquisition (learning what is culturally normal). Therefore, exposure to unconventional low-redundancy melodies is less likely to annoy or jar in infancy than in later childhood or adulthood, meaning young children may be more receptive to unconventional melodic exposure than older children. This has implications for the types of music that can or should be used in very early years music making and listening, since infants will react differently to culturally specific musics than older children (Schellenberg & Trehub, 1999). Further work is required to establish whether exposure to more culturally diverse musics at an early age will lead to more advanced musicality; however the findings around the existence of musical perception in infancy are a necessary precursor to explorations of music activity.

Musically encoded and expressed emotions have also been studied at an early years stage. Boone and Cunningham (2001) showed how children aged between 3 and 6 could model certain musically encoded emotions (by moving a teddy bear into different positions). The results were only significant for happiness and sadness (not anger or fear) and the older children modelled the emotions more successfully than the younger children, however, the research shows the high level of sophistication that early years children have in decoding, and subsequently encoding, musically expressed emotion. Understanding and expressing emotion is also culturally specific and is part of normal childhood development, but few studies have investigated musical emotions at this age so explicitly. It shows that music perception is advanced at an early stage of the life course.

Sims and Nolker (2002) studied the listening behaviour of 5 year old children and found that children of this age are capable of self selecting listening duration. The children's listening duration to various pieces of music did not significantly differ according to gender or age (between 5 years and 6 years). The second stage of their study also showed no link between listening behaviour and later concentration time (as measured by nursery teachers).

Whilst the implications for music making are not immediately obvious, this study contributes to the findings around early years music perception and shows, again, that children in this age group display high levels of musical agency.

A more recent study (Kirschner & Tomasello, 2009) found that children aged 2.5, 3.5 and 4.5 were better able to drum along to a beat when a drum was played by an instructor than when it was played mechanically or they were exposed to the audio only. This seemingly straightforward finding indicates the importance of a social context to music making situations in the early years. Rather than independent music perception skills facilitating music making, it is the presence of another human being, and the ensuing socio-psychological interaction, that allows for successful music perception and intentional creative expression at this stage.

Finally, Forrester (2009), in an ethnographic case study of one child, charted the emergence of musicality. He noted three distinct phases where musicality emerged. The first was emotional responsiveness to an adult partner at around 1.5 years, before the child became more musically independent (at 2-2.5 years). The development of musicality appears congruous to the development of personality and conversation skills, though the causal effect of one on the other is not determined here. Overall musical independence (i.e. spontaneous singing, making up songs with a narrative and a conventional structure) was not entirely evident until after 3 years of age. This has implications for the type of musical engagement attempted and provided prior to and after this age.

What these studies show is that most children have advanced music perception skills from infancy, becoming more sophisticated in line with wider childhood development. It is unwise to jump to conclusions about the benefits of early years music without understanding how children at this stage make sense of music, these studies have demonstrated young children's abilities in musical discrimination, listening, emotional decoding and musicality. In establishing that young children have advanced music perception abilities, a case can be made that they should be given the opportunity to develop these skills in a range of settings. These studies show that musical communication is often more advanced than other forms of communication (e.g. speech and language) therefore; early years settings provide a good opportunity for young children to be expressive on their own terms.

The studies above go some way to moving on thinking in relation to early years music perception, but a key criticism that can be levelled (and recognised as lacking by Ilari (2002) in relation to music in the first year of life) is how children experience music outside the scientist's laboratory, in everyday life. Music pieced back together from its constituent parts (i.e. rhythm, timbre, tone, resolution and so forth) should also be empirically considered if the effects of music in the early years are to be comprehensively studied. A review of musical behaviour in the early years is therefore the focus of the following section.

Musical Behaviour

Musical behaviour broadly refers to the everyday interactions people have with music. This can be as passive listening or active music making, and involves accounts of unstructured musical interaction as well as musical exposure more generally. For this study it is important to acknowledge early years musical behaviour as it adds context to how young children understand and experience music in their daily lives, which in turn has implications for provision.

The single case study is a popular methodological approach in studies of early years musical behaviour. Suthers (2001) and Barrett (2009) have both published studies of an individual child's musical experiences over a number of years. Suthers observed how music making in an early years setting allowed a child to develop physically, through improved rhythmical drumming; linguistically, by learning words and actions to songs; and socially, by choosing songs and leading

groups in singing. Barrett also focused on the social benefits of early years music making, describing how the parents of the featured child used music as a way of structuring and organising daily tasks with the child and his siblings. They also saw their child's access to early years music making as facilitating greater communication between themselves and their children. Rather than focusing on specific developmental outcomes, Barrett's participants discuss how the early years music making resource eases the structuring of routine daily life (and how this increases as the child ages and his musicality develops).



Whilst the case study approach is useful for providing depth and context to the musical behaviour of the under 5s, it is also difficult to generalise to the wider population. The conclusion that music making provides a unique avenue for physical, linguistic or social development should be made with caution. There were no alternative accounts provided where development was described in a non-music making context, or using other artistic forms. Indeed, these studies are discussed under the title of musical behaviour as they are more revealing about how music making is used in daily life than they are about the complex processes involved in music affecting other outcomes.

Young (2008) and Lamont (2008) approached the study of musical behaviour with larger samples. Young interviewed 88 parents and carers of under-tuos and found that young children are exposed to and engage with a lot of music in the home. The majority of music is not child-oriented (i.e. nursery rhymes, children's songs etc), although more intentional interactions with music are often around these musical forms. One key finding is that technology has massively increased the opportunities for musical exposure, whether through music players (mp3, internet) or through the integration of musical technologies into other items (teddies, mobiles and so forth). Another key finding is how media consumption in the home is often hybridized, so that TV watching also includes music listening, dancing and singing. The lived musical experience of under-tuos is multi-modal and through a range of media (as opposed to music exposure as an autonomous exercise). The main implication of this is recognition of the influence that technological advances will have on the way that music is consumed, used, and engaged with, even, or perhaps especially, at the earliest stages of life (Young 2008).

Lamont's (2008) study was concerned with a slightly older age group (3.5 year olds) and found that children were exposed to a lot of music in their everyday lives. Contrary to Young's study, Lamont found that most of the music was child-oriented (nursery rhymes, Disney, action songs and so forth), although this may reflect the slightly older age of the participants and their increased musical agency. In addition, music was used alongside other tasks (dressing, eating, playing) and was rarely engaged in as a specific task in itself. An exception to this was where music was used to create a calm and soothing environment around nap and bedtimes (a finding also highlighted in Young's work). These findings show how young children are not only exposed to, but also engage in, many and various musical landscapes throughout their early years. It should therefore also be acknowledged that children have a high degree of agency in their musical choices and behaviour from an early age. Children have tastes and preferences and are often in a position to decide what kind of music they wish to be exposed to (i.e. in a passive context) as well as engage in (i.e. as active music making).

These studies show that a child's early years involve a great deal of musical exposure and how music is used by parents and children for many different purposes in everyday life. In order to provide music-making opportunities for the under-5s it is important to understand the context of their everyday musical experience. These studies show how young children engage with a wide range of musics and exercise considerable agency in their musical choices and actions. One key finding is how music is rarely experienced in isolation from other tasks and activities; this has real implications for how music making services are provided. It is not 'normal' for very young children to engage in music as a task in itself and this should be recalled when approaches to provision are considered. By incorporating music with other modes of delivery (artistic, cultural, or 'banal') children may engage more fully and the task of music making will be better attuned to early years children's behaviour. Understanding musical behaviour in the early years allows service providers to integrate music making into children's lives more effectively.

Parent-Child Communication

Two studies explicitly focused on the impact of structured music making on parent-child communication. De Gratzter (1999) combined participant observation and structured questionnaires with 45 parents and their children during a 10 month action research project. She concluded that the majority of parents reported non-musical benefits from the classes. These were mainly around improved relationships with the children and increased communication between parent and child. Many parents described how the classes allowed them to 'get into their children's worlds' and increased understanding outside of the classroom. The classes also encouraged musical journeys beyond the programme for both parent and child (children signposted to other musical activities and parents bringing other children along). De Gratzter concludes that group music making between parents and toddlers provide an ideal space for musical development, but also, perhaps more significantly, an opportunity for parents to engage in non-verbal communication with their child which has demonstrable positive effects on parent-child relationships. This supports the establishment of group music making with parent and child as a means of developing both parties' psychological wellbeing (through greater communication and stronger relationships). The sessions were also reported as benefiting community cohesion and bringing parents and children together from different backgrounds. Although this study is based on a fairly modest sample size, it is strengthened through the length of data collection (10 months).

Nicholson, Berthelsen, Abad, Williams and Bradley (2008) collected a number of measures from 210 parents and children in a weekly parent/toddler music making session over ten weeks. The test scores after the 10 weeks of music showed significant improvements in measures of parental irritability, activities with their child, parental mental health, child communication, and child social skills. These differences were significant across the three groups of parents and children under study (economically disadvantaged, disabled, and young parents). No significant differences were observed for parenting warmth, parenting self-efficacy, or child behaviour problems. According to the authors, this is the first study to evaluate the short-term effects of a music making intervention using validated measurement tools and only the second to employ a repeated measures design. This in itself shows the lack of evidence in the sector on what communication outcomes can be achieved by early years music interventions. A major limitation is that there was not a control group; therefore the noted improvements may have been the result of general infant development, however the improvements observed in the parents cannot be explained by this possibility (i.e. they were involved because of the music activity). Whilst there are limitations to this study, it does show that music making can provide an enjoyable and engaging opportunity for parents and toddlers to work on their communication skills.

One, seemingly obvious, observation is that these interventions involved early years children and their parents. There was no evidence suggesting that communication between parents and children would improve if only children were present in the sessions studied. Whilst these findings are not overwhelming, they do indicate positive outcomes for parents and children engaging in



music making together and provide a sound basis for future work. Nicholson et al's (2008) study is especially encouraging since it found positive outcomes for more marginalised parents and children, often the focus of Youth Music's work.

Transfer Effects

The studies discussed so far have contextualised music perception and musical behaviour as well as highlighting how early years music making can improve parent-child relationships. The following section discusses whether music making in the early years has been proven to benefit other developmental outcomes, or 'transfer effects'.

Bilhartz , Bruhn and Olsen (2000) studied four and five year-olds from a range of socio-economic backgrounds (n=71) and split the sample into an experimental and a control group. The experimental group received 75 minutes of musical training (Kindermusik) per week for 30 weeks, the control group attended regular nursery sessions. Participants underwent a series of Stanford-Binet intelligence (SB) and Music Skills Assessment (MSA) tests prior to the experimental period, and again after the delivery of the 30-week music programme. Significant improvements were made in almost all the music tests for the experimental group. However, this was not universal across socio-economic groups; those from lower income groups only significantly improved in one subtest but those from the middle and high-income groups performed better across all seven subtests.

For the Stanford-Binet tests of cognitive development, there were no significant differences for either the experimental group or the control group for the Vocabulary, Sentence Memory, or Quantitative Reasoning subtests. However, the experimental group improved significantly more than the control group for the Bead Memory subtest. Overall, those in the experimental group showed a significant improvement in abstract, not verbal, reasoning. The Bead Test improvements increased regardless of socio-economic group, though this was greatest amongst those from higher socio-economic groups.

³ Kindermusik is a commercially available music and movement programme that involves vocal, rhythmic, pitch, composition, notation and co-ordination techniques. It is supplemented by a resource pack that encourages delivery of the techniques at home.

The authors suggested that the differences based on income may be due to the greater number of parents getting involved in the music classes amongst higher socio-economic groups, as well as a much larger number of parents completing the homework and at-home component of the music programme amongst these groups. One other observation is that if more time is spent on musical training amongst the children, improvements in abstract reasoning skills are greater. This study shows that musical skill and abstract reasoning can be improved as a consequence of repeated, structured music making over a long period of time (75-minute sessions over 30 weeks) for 4-5 year olds. However, the difference in pre and post-test scores is even greater with increased parental involvement and a commitment to further delivery of musical instruction in the home.

Anvari, Trainor, Woodside and Levy (2002) also studied transfer effects of structured music making. Children were split according to age (4 and 5 year olds) and subjected to a number of tests in experimental situations. These tests were of Phonemic Awareness (the ability to distinguish between different sounds in words), Reading (simple letters and words), Vocabulary (pointing to a picture of a spoken word), Music (a series of tests of differences in pitch and rhythm), Digit Span (i.e. how far child's hands can stretch), and Maths.

Music perception was positively correlated with both phonemic awareness and reading ability – for music generally at age 4 and for pitch (but not rhythm) at age 5. Further analyses showed that the positive correlations between music perception, phonological awareness and reading remained consistent despite potential interactions from auditory memory, vocabulary size, or mathematical ability.

The positive association between phonological processing and reading is well established. This study shows how musical perception strengthens the correlation between phonological processing and reading, yet also that musical perception itself can predict better reading ability. This suggests that the sounds of music and the sounds of words are processed in a similar way and combined learning of music and language may be more beneficial than learning either component by itself. Although causality is not determined, the association does suggest that musical training complements the development of phonological awareness and reading (and vice-versa).

This conclusion is supported by another study (Trainor, Shahin and Roberts, 2003) which looked at brain activity in 4 year olds before musical training and again after a year's music training. Compared to children the same age who had received no musical training, those who had received a year's tuition in the Suzuki Method had a significantly more developed auditory cortex. A more advanced auditory cortex means that children can discriminate between a greater number and type of sounds. This has obvious implications for the development of musicality, but also extends to the phonetic aspects of speech and reading ability. Environmental and social factors that can affect child development were not controlled for in this study, therefore the association between musical training and advanced auditory discrimination, whilst important, may not have been so significant in other contexts (e.g. other populations, or other training methods). The authors acknowledge this but also argue that the findings 'fit' with a growing body of work across many academic disciplines.

Gromko (2005) also found a significant link between musical training and literacy development. Her study investigated the effects of four months of music training on an experimental and control group of children in an early year's education setting. The experimental group made significant improvements in a test of their 'aural segmentation' (i.e. making sense of sounds) more so than the control group. Gromko highlights how her findings do not conclusively prove transfer effects, but that, when considered in relation to other findings (including those reported above) there is clear evidence of 'near transfer effects'. Whilst acknowledging that further research needs to be done, she concludes that musical training seems to improve other symbolically learned developmental systems (i.e. language and literacy).

There are a few caveats that should be considered in relation to each of these reported studies. Firstly, the transfer effects reported are the result of highly structured, reasonably long-term and repeated musical training sessions. Clarity is still required as to which is the 'best' approach to musical training in this context, but the fact that a range of techniques were employed does indicate that regularity and expertise in musical tuition are prerequisites for any transfer effects to be noted. Similarly, the studies discussed were conducted in quite formal settings, therefore the delivery of music making workshops or lessons in less formal settings (e.g. drop in sessions with changing participants) will likely not have the same effects. Secondly, this review is limited to the early years and a period before participation in formal education, a further investigation of the literature would be necessary to examine whether different teaching methods or levels of participation in music making in later childhood influences the observed transfer effects (although there is a clear suggestion in the literature that this is the case).

Lastly, the design of these studies dictates that only those children who can engage in the testing process (i.e. over 4s) can take part. This has clear implications for applying any of these findings to the 'early years' more generally.

There is little evidence that music making in infancy will have the same transfer effects as it does in late toddlerhood/early childhood. The findings of Bilhartz et al. (2000), however, do suggest that advanced musicality at the age of four will predict greater scores in abstract thought, and others (Anvari et al. 2002, Gromko, 2005) have stated that the ability to engage more fully in a musical training programme at this age will increase the likelihood of any wider developmental outcomes.

Summary

The evidence reviewed in this section suggests a number of interesting and beneficial outcomes of structured music making for children in their early years. The first section highlighted how children have advanced music perception skills from a very early age; this indicates that levels of musical engagement and understanding are high and that this should be accounted for in the delivery of music making experiences.

The following section provided evidence on children's musical behaviour and suggested that music is often used in conjunction with a number of other everyday tasks and that children exercise a great deal of musical agency in their early years. This implies that at least after the emergence of musical independence (around age 3) children can make decisions, exercise taste and preference, and engage fully in musical innovation and improvisation.

Other studies reviewed have highlighted the benefits in parent-child communication that have come about as a result of structured music making, and how this is especially effective for those parents who are more likely to be marginalised in society (although, again, continued engagement is a key factor in achieving these outcomes).

The final section showed how structured musical training over time leads to greater development of the auditory cortex and improvements in phonological awareness, which in turn can enhance reading and language skills. These transfer effects are increasingly supported by the literature, but may be limited to older children in the early years bracket.

Overall, the outcomes discussed in this section indicate a number of benefits of musical engagement in the early years. What is most clearly demonstrated, however, is how each set of outcomes are interrelated; advanced musical perception is connected to musical behaviour which is also correlated with musical engagements between children and their parents (and the benefits thereof). All these factors can affect the saliency and strength of transfer effects in wider development. The following sections discuss how these findings fit with existing Youth Music research and programme evaluations, as well as wider observations within the sector

3. Which outcomes are commonly reported by Youth Music projects and how do these relate to the other sources of evidence?

The evaluation materials of Youth Music funded early years projects were examined to explore commonly reported outcomes (and supporting evidence). Of 95 closed projects between 2004 and 2009, 50 final reports were studied for evidence until saturation was achieved.

The standard of final report forms varied greatly; some projects provided supplementary evaluation materials which had clearly contributed to the organisation's learning and development, whilst others completed the forms in a vague and formulaic manner, with little supporting evidence. It should be noted that the format of the final report forms did not explicitly encourage particular types of evidence, or specify an approach to evaluation. Indeed, the forms asked funded organisations to rate (from 1 to 10) improvements in children's confidence and self-esteem, enjoyment and motivation, achievement and pride, social interaction, concentration, attitude to education and numeracy and literacy skills. On reflection, this may have limited the development of some organisations' evaluation approach.

Whilst many of the reports included 'first hand' observations and quotes from various people involved in the project, there was generally no systematic collection or presentation of evaluation evidence (be it quantitative or qualitative). This lack of evidence restricts the applicability of the reported outcomes to wider contexts, and limits the extent to which funded organisations themselves can assess the success of their projects or inform future delivery. An additional caveat in presenting the evidence from project reports is that these are sent to Youth Music before the final payment is issued, therefore there is likely over reporting of successes and underreporting of challenges.

Many organisations highlighted how the challenges of measuring and demonstrating outcomes with children in the early years (mainly due to communication and perception difficulties) restricted their reporting abilities. Despite the obvious problems with much of the evidence, there remained a number of outcomes in the reports worth considering.

Confidence

Of the 50 sample reports, 42 discussed how their music provision had increased the confidence of children, parents and early years workers taking part. This was largely confidence in music making, where children were willing to try out or instigate new forms of music, although many also mentioned how the sessions provided opportunities for shyer children to take part in group activities where they otherwise would not. For parents, it was reported that the sessions and associated resources increased their confidence in engaging in musical activity with their children within and beyond the early years setting. Increased musical confidence was also widely reported for early years workers. By funding music leaders in nursery and day care settings, many projects described how their permanent staff felt more confident to lead music making tasks after the project had formally ended.

Language and Integration

Rather than detailed evidence of how music making developed the language skills of children generally, many projects (18 of those sampled) described how music was a key tool for the integration of children with English as a second language. Some described how musical communication (i.e. using instruments) overcame the language differences between the children. Others suggested that using a range of culturally diverse songs encouraged greater participation from those with a first language other than English. This is not something widely reported in the studies cited above; however, it could prove an interesting avenue for further study.



Community Links and Partnerships

Many projects reported how they had increased links within the community either by leveraging in additional funding or, more informally, by inviting schools and other early years settings to workshop and performance events. It was widely reported that Youth Music funding allowed for many of these relationships to be developed. In addition, the music leaders working on the projects often encouraged links between settings (e.g. three projects reported how they had set up a local 'instrument library' to be shared between multiple settings). Whilst some partnerships are likely to be established despite Youth Music funding, many projects highlighted how resources and knowledge around music making were new and additional to what existed previously.

Some projects (15 of 50) also reported how parents were becoming more involved in the settings due to the performance events and how this led to greater integration of parents from different cultural and socio-economic backgrounds. By celebrating musical achievements and innovative early years delivery techniques, the settings were able to involve wider factions of the community than they otherwise may have.

Integrated Creativity

Many projects (17 of 50) described how they found the music sessions particularly effective when integrated with other creative activities. Five projects described how they combined music with visual arts, encouraging children to draw or paint during the same session. Several projects described how they would combine music with drama, using instruments as part of a storytelling process or acting out songs. However, most projects highlighting the efficacy of a multi-modal approach described the combination of music and movement as being particularly successful. These projects described how children often spontaneously danced along to others playing music, or would exaggerate their movements when playing the instruments. These reports indicated that music sits well with a broader creative curriculum and that combining activities often resulted in the most effective engagement from the children.

Learning Resources

The evidence supplied in relation to learning resources and legacy of funding may be biased, however, many projects supplied examples of the types of resources they had developed. Since a clear 'what next' plan is a condition of funding, the majority of projects reported how they had a useful pack from which to continue and develop their musical delivery without the regular involvement of a music leader. It is clear that the quality and consistency of this delivery is likely to vary, nevertheless the fact that these resources have been developed means that regular music making is more likely to take place than if funding had not been awarded.

Summary

The most commonly reported outcomes from projects themselves related to confidence, language and integration, community links and partnerships, integrated creativity and learning resources. There were few examples of empirical work involving early years participants, although this is perhaps to be expected due to the methodological difficulties presented by very young children.

Due to the paucity and disparity of evidence provided in the final reports, it is only possible to describe these outcomes at a broad level. Nevertheless, they imply that some of the outcomes registered and reported by projects are dissimilar from the foci of the research evidence reported in the second section of this document. This could be due to the reporting requirements stipulated by Youth Music, or because of the different interests of the project managers and early years workers (compared to academic researchers).

Not all reported outcomes are entirely different however; the reports of the success of integrated creativity match quite closely the conclusions from Lamont (2008) and Young (2008) that music is integrated into the daily lives of young children and therefore it may not suit projects to treat musical instruction as an exclusive task. Similarly, many of the results of published research are concerned with increased communication abilities, and this was overwhelmingly reported by funded projects.

One notable finding from project evaluations is that parental confidence increases when they are involved in sessions with their children. This mirrors the observation by Bilhartz (1999) that transfer effects are more strongly evidenced when parents have been involved in musical instruction, and those by Nicholson et al. (2008) that parent-child communication can improve immensely when both are involved in sessions.

It is clear that better guidance and support is required for projects to collect, analyse and report reliable evidence if project evaluations are to meaningfully contribute to a wider research consensus. However, it is also important for researchers to listen to the accounts provided by those 'on the ground' when looking for new directions for empirical work. A further observation is that these two approaches (academic and project evaluation) could be further integrated to the benefit of both parties and many opportunities exist for further research relationships to be established.



4. What issues have been identified in early years music provision (based on published research and Youth Music evaluation documentation)?

The outcomes demonstrated by research evidence and project evaluations have now been presented, however there remain a number of outstanding issues. It is important to address these in order to understand the current situation regarding early years music making. The following section uses programme evaluations, Youth Music research and published discursive papers to present the current situation.

Research

There remains a dearth of empirical research relating to early years music making (Young, 2005, 2007, Ilari, 2002). It is generally not appropriate to apply research findings relating to later childhood or adulthood to the early years life stage, yet this approach is often adopted. A key criticism levelled at the Youth Music funded research 'Turning their Ears on' (Clarke and Taylor, 2006) is the application of research findings from beyond the early years stage. Similarly, the lack of control group in this research considerably weakened the findings. This highlights an ongoing problem in early years music research; many reported outcomes can only be evidenced by adopting a longitudinal or controlled, repeated measures, design. These methods are expensive and time consuming, but if creative and appropriate, they can develop our knowledge of musical perception and engagement in the early years.

Although research in this area is expanding, it is still biased towards the pre-school, as opposed to infant age group. This has implications for developing practice with younger early years children (i.e. under 3). Some researchers (Trainor et al., 2003) have concluded that from birth children have sophisticated levels of musicality, thus challenging conceptions of exceptional musical ability as predestined, however further research is required to realise how best this potential can be universally developed.

Another key problem in early years music research is the continued focus on how music making can cause wider developmental benefits. Young (2005) has noted how music as a language in itself should be the developmental focus of early years music education. There is great value in children engaging in music making for all the musical benefits this brings despite any additional benefits and this needs to remain a research focus.

Training and Delivery

The evaluation of the Youth Music Cluster Programme highlighted how integrated early years music practitioners would have better facilitated and coordinated the delivery of the programme. Another key finding was that the aim of the programme was unclear; it focused on the professional development of London Symphony Orchestra staff as well as outcomes amongst the children they were working with. This lack of clarity meant that neither aspect was fully realised or able to be investigated effectively by the evaluation (Young 2007b). Whilst this is a programme specific criticism, it exemplifies a conflict across the sector between provision of programmes and provision of expertise.

There appears to be a split between action at a workforce level and action 'on the ground' with children. Young suggests (2005, 2007a, 2007b) that early years music (or multi-modal arts) workers be integrated into Sure Start Children Centres to provide regular access to enriching educational experiences. This aim is ambitious, but could be supported by a greater level of regulation and co-ordination from a nationally or regionally representative early years music organisation. In addition there remains a need for a recognised qualification in early years music

(ideally through a postgraduate degree or a National Vocational Qualification). Tied to these aspirations is an acknowledgement that different workers will require different skill development to be effective in an early years music context (i.e. a language support worker might benefit from learning about the development of musicality, or a musician may benefit from learning about approaches to early years education) (Young 2005). A 'one size fits all approach' is not suitable considering the diversity of delivery contexts that exist, yet there also needs to be some degree of co-ordination and consensus of training goals for effective change to take place.

An attempt was made to provide clear guidelines for musical practice amongst early years workers with the Youth Music published 'Tuning into Children' booklet (Evans, 2007). Following recommendations from Young (2005) amongst others, the booklet encouraged child initiated, interactive and improvised musical sessions with children. With a clear focus on creativity and retaining flexibility in delivery, the Tuning into Children approach also advocated the collection of evaluation data and highlighted the importance of continued professional development for early years staff. Based on initial feedback this has proved a useful resource for some early years workers keen to develop their music provision, however there are limitations to the impact its publication has had on the sector. Whilst the recommended approach is flexible and indicative (as opposed to prescriptive), early years music provision remains patchy and of variable quality; perhaps indicating that change needs to be directed at a higher level.



Funding Structures

The training and delivery issues discussed above may be linked to the project based approach to early years music making. Due to funding obligations (which dictate that funding cannot be continued with the same project beyond a given timeframe in order to encourage sustainability from other funding sources), Youth Music funded early years music projects are generally not capable of instilling the expertise required to maintain consistent provision in a given location. Whilst training and continuing professional development are strict conditions of funding, without robust co-ordination and regulation across the sector, these attempts at workforce development are unlikely to maintain a lasting impact (Young 2007a).

Another consequence of this funding structure is what Young (2007a) has termed 'Innovation Overload'. This refers to the requirement of early years projects to demonstrate how new provision is distinct from previous projects. Whilst innovation has been a successful outcome of Youth Music early years projects, there is an alternative argument that the requirement for new approaches contradicts the need for a nationally embedded early years music workforce. It is recognised that change at this higher level is potentially slower and subject to more setbacks, however that should not preclude further discussion as to how to achieve it.

⁶ The Youth Music funded project 'Stepping Into Music' did establish a recognised qualification with Canterbury Christ Church University for Early Years and Music practitioners to specialise in the Dalcroze method, however this was limited to 18 trainees.

One way of maximising ongoing Youth Music early years work in the shorter term is through wider use and dissemination of final reports and evaluations (Bond , 2002). Whilst this document provides a good starting point, the practice of regularly sharing learning and expertise across the sector will at least retain a focus on any continuing unresolved issues. Additionally, funded projects should be encouraged and supported to set up an action research component where evaluation materials directly influence the structure, content and delivery of their projects (Bond, 2002, Young 2007a, 2007b). This will add value to the funding commitment from Youth Music by ensuring that projects engage in reflective practice which will have direct benefits for the organisations, and a wider influence on the sector. There is a clear gap in current support at this level.

Advocacy and Ways Forward

There are a number of fronts on which action for early years music can be developed. Those highlighted above concerning research, training and delivery and funding structures can be addressed as Youth Music's early years strategy progresses. There is, however, a pressing need for conversation and consultation across the music education and early years sectors to build the case for more formalised support (i.e. wider accreditation) and provision (i.e. embedded music or arts specialists in government funded children's centres). Youth Music has the potential to be a key advocate and catalyst for this 'higher level' change.

In addition to this document there will be further consultation across the early years music sector in order to establish Youth Music's role and strategy. This document should be seen as starting point for wider conversation and action, and as such can be added to and developed as further evidence is published and consultation takes place.

FIRST STEPS 2000 - 2009

The First Steps programme was an open programme created to encourage and support regular music-making activities for children between 0 and 5 years, especially those who would otherwise lack the chance to take part

EARLY YEARS (2003-2006)

The Early Years Zones were a natural progression and strategic step for Youth Music following on from the successful Open Programme, First Steps, which was launched in June 2000. Briefly the aims and objectives of this programme were to: Encourage nursery and childcare specialists and other stakeholder groups which include parents and carers to put music at the heart of their work; To develop a range of collective music-making activities for children from 0-5 and also to include activities for expectant parents; Work with an experienced music maker well placed to develop and enhance music-making activities for young children; Develop the skills of staff, helpers and parents to feel confident to run music activities after a music practitioner has left the project. These grants were traditionally larger than those distributed under the open programmes and especially encouraged partnerships and workforce development.

FIRST STEPS - SURE START (2004-2006)

This programme was created to encourage and support regular music activities for children from 0-5 years, laying a firm foundation in music education for all pre-school children. It sought to demonstrate how music makes a positive contribution to children's learning and development by the time they reach primary school.

CLUSTER PROGRAMME (2007-2008)

The aim of the Cluster Programme was to increase the numbers of early years practitioners who are skilled, knowledgeable and confident in using music to support children's learning and enjoyment in the everyday life of early years settings; to increase the number of orchestral players, workshop leaders and other musicians who are skilled and confident in working in early years settings; to ensure that there is a commitment from all programme partners to continue, further extend and 'cascade' their music practice after the programme has finished; to support and disseminate a range of bespoke models of CPD which explore children's musical creativity through an integration of child-initiated and adult led practice.

TUNING IN TO CHILDREN (2007)

Tuning In To Children offers a framework for planning and implementing a programme of training and CPD for early years practitioners and musicians working collaboratively to deepen their understanding of young children and their music making.

MUSIC START (2007-2008)

Music Start is a free government funded Youth Music Initiative to encourage families with 2-5 year olds to make music at home. The Music Start pack is fun, easy to use and has been developed for families of all musical ability, including those with no experience at all.

OPEN PROGRAMME (2009...)

To encourage of high quality music-making activities in Early Years settings. To support Early Years practitioners to deliver high quality Early Years music making.

Appendix 2 – Methodology

Systematic Reviews

A systematic review of published, peer reviewed journal articles was undertaken for this research. The principles of systematic review have traditionally been applied to medical and scientific studies in order to reach a consensus about a particular topic from a range of sources. More recently, these same principles have been applied across more diverse disciplines for the same purpose; to see what conclusions can be drawn about a phenomenon based on a particular set of inclusion criteria.

The methodology for this review has come from the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre. They have published a set of guidelines to be considered when conducting systematic reviews; these are outlined below (EPPI -Centre, March 2007):

1. User Involvement

Before the review was conducted a clear research brief was written and a number of internal stakeholders were consulted. This led to a clearer sense of purpose for the review; to establish what outcomes have been reported as a result of music making amongst the under 5s. The findings of the review would update knowledge for Youth Music employees and funded projects and contribute to the organisation's strategic direction. It was recognised at this point that the review would be a 'first stage' of further consultation with those in the sector and that evidence should continue to be added and evaluated beyond the initial publication of results.

2. Types of Evidence

The review was conducted in two stages, the first focused on published, peer reviewed empirical studies from a range of journals and publicly available reports relating to early years music making (i.e. gray literature). The second reviewed internal documents (i.e. final reports and programme evaluations) in order to identify commonly reported outcomes and findings.

It was recognised at the beginning of the research that these two stages involved different types of evidence. The former evidence was presumed to be more objective (at least to the extent that studies had been peer reviewed and published), whereas the latter evidence had been provided as an account of a project or programme's performance against predefined aims. Whilst many projects and programmes had been evaluated by an external assessor, the quality and robustness of their methodology was greatly variable. This recognition has been acknowledged throughout the presentation of the findings.

3. Methodological Challenges

Since the research question was relatively broad it was assumed that the evidence would come from a variety of sources and include a number of methodological approaches (e.g. qualitative studies, experimental studies, quantitative and longitudinal studies). This has clear implications for the transferability of the findings from one study to the next, however the level at which the synthesis of findings has been conducted (i.e. what can we confidently conclude about the outcomes of early years music making?) meant findings from a range of sources could be presented thematically. Rather than focusing on a narrow research topic (e.g. what evidence exists around the perception of musical tone in under 2 year olds) where integrating findings from a range of methodologies may be particularly challenging, the breadth of the topic allowed for more straightforward synthesis.

4. Setting Scope for the Review

A clearly defined research question is essential for reviews to be conducted in a specific and replicable manner. Setting the scope of the review is the first stage in establishing which criteria will be used for searching and locating research findings. As has already been discussed, the research questions for this review were necessarily broad:

STAGE 1 - Which developmental outcomes resulting from musical exposure in the early years are demonstrated by research evidence?

STAGE 2 - Which outcomes are commonly reported by Youth Music projects and how do these relate to the other sources of evidence?

5. Protocol

Once the scope had been established by the research questions, the next stage was to establish protocol for the searching and locating relevant research, this was conducted differently for each stage.

STAGE 1

Since wide consultation had taken place when Youth Music was established in 1999 and in the interests of making the review manageable within the time allocated, it was decided that only research published between 1999 and 2009 would be included in the review. It was also recognised that any research published during this time would be framed by previously published studies, which would also be acknowledged within the literature review sections usually provided at the beginning of research papers (i.e. the questions being addressed by research would generally be 'new').

A second condition was that papers had to be based on empirical research. Whilst theoretical and review papers have been picked up and discussed in different sections of this report, in order to be included in the systematic review itself, studies had to report outcomes as a result of musical exposure (though no limits were placed on methodological approach).

A further condition of inclusion was that studies were based on children aged 0-5 and not conducted in formal school based settings (e.g. a study of 5 year olds in nursery was acceptable, but a study of 5 year olds in their first year of school was not). This ensured that musical exposure was not part of a wider music curriculum.

Leading from this was the condition that studies investigated the effects of music making, listening, or exposure on other outcomes.

The same conditions were set for the search of gray literature.

STAGE 2

Since the evidence for the second stage of the review was based on internal documentation, the same protocol could not be applied. Instead, evidence was drawn from a sample of Youth Music funded research relating to early years music making, the final reports of early years projects and the evaluation documentation of Youth Music early years programmes.

6. Search Strategies and Results

STAGE 1

In order to access relevant research literature, searching took place in four stages:

i. Electronic Databases

The largest electronic database for academic articles, ISI Web of Knowledge, was searched on 17th June 2009 for the following terms

Early* and Year* and Music*
Child* and Music*
Year Old* and Music*

And published between January 1999 and June 2009

The initial searches retrieved tens of thousands of results, therefore the search was repeated using these terms for the title only. This resulted in 369 results which were studied for relevance (based on the criteria outlined above). Of the 369 results, 76 were marked as possibly matching the criteria and were downloaded into reference management software for further study.

ii. Google Scholar

The above search terms were also entered into the general academic search engine 'Google Scholar' on 26th June 2009. This resulted in 156 articles which were studied and cross referenced with the 76 references taken from web of knowledge. An additional 6 articles were downloaded into reference management software as a result of this search.

iii. Key Journal Search

Of the 82 articles retrieved that seemed to match the protocol, a list of key journals was established. These were:

Journal of Experimental Child Psychology
British Journal of Social Psychology
Journal of Education Research
Psychology of Music
Journal of Aesthetic Education

These key journals were searched using the same terms as the previous searches and a further 7 articles were added to the reference management software.

⁷ The (*) denotes that this is the root of a word. For music* the search will therefore retrieve MUSIC, MUSICAL, MUSICIAN etc.

iv. Specialist Website Search

In order to obtain any empirical research that had been made publicly available, but not necessarily peer reviewed and published in an academic journal (i.e. gray literature), a search of specialist early years music websites was also conducted.

This search was more iterative and utilised google, under a list of key terms (as above) and links provided in the resources sections of specialist websites. The websites searched were:

British Kodaly Academy
British Suzuki Institute
Centre for Research and Creativity in Learning and Education
Colourstrings
Department of Culture Media and Sport
Department of Schools Family and Children
Early Arts
Jo Jingles
Kindermusik
Music minis
National Child Minding Association
National Day Nurseries Association
Pre-School Learning Alliance
Pre-School Music Association
Qualifications and Curriculum Authority

None of these websites had publicly available research that met the protocol for inclusion.

This resulted in a total of 89 articles for further study and description.

STAGE 2

The Youth Music internal documentation search resulted in:

2 Programme Evaluations (Cluster Programme, 2007 and First Steps, 2002)
1 research report (Turning their Ears On, 2006)
1 delivery instruction booklet (Tuning into Children, 2007)
95 final reports for First Steps projects (closed between April 2004 and March 2009)

7. Description

For each of the 89 articles, the abstracts were read and a decision was made as to whether they should be included according to the protocol described above. This stage reduced the number of studies to 28.

These 28 papers were downloaded and read. During this stage they were entered into a table where the author, journal, date, sample, method, main findings, and conclusions were noted. Upon this more detailed reading of the literature it became clear that some of the articles did not match the criteria (although the abstracts had suggested they would). This resulted in a reportable sample of published peer reviewed papers of 17.

For Stage 2, each of the documents were studied with the exception of the final reports, where 50 of the 95 reports (returned between 2004 and 2009) were read and it was felt that saturation had been achieved.

8. Synthesis

Since such a disparate range of sources have provided the evidence for the review, a conceptual narrative synthesis has been provided throughout the document. This brings together the findings of the various studies and internal documents and lays out a series of conclusions and recommendations which can be used to guide future consultation, research and strategic direction for issues relating to early years music making.

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