Music Therapy and the Education of Students with Severe Disabilities

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Abstract: Music therapists regard music therapy as a valuable intervention for students with moderate to severe intellectual disability or multiple disabilities, but many special educators would regard it as a controversial practice, unsupported by empirical research. This paper reviews the goals and strategies used by music therapists working with students with severe disabilities and the purported outcomes of music therapy. The recent research base that could validate music therapy as an effective educational intervention is reviewed. There is little evidence to support the use of music therapy as an educational intervention, but what evidence there is suggests that music therapy sessions, when planned in collaboration with educators, may provide a context for eliciting and practicing communication skills. Such music therapy interventions should be individually planned and monitored to ensure educational outcomes are achieved.

Music therapy has been broadly defined by a music therapist with an interest in people with disabilities as “...the use of music as a therapeutic tool for restoration, maintenance, and improvement of psychological, mental and physiological health and for the habilitation, rehabilitation, and maintenance of behavioral, developmental, physical and social skills – all within the context of a client-therapist relationship” (Boxill, 1985, p. 5). Music therapy is used with a wide range of populations – people in hospital, people with psychiatric disorders, older people, people in hospices, people with neurological problems, people with autism and adults and children with intellectual disability (Aldridge, 1993).

Music therapy is seen by music therapists as a useful contribution to the education of students with special education needs (Aldridge, Gustorff, & Neugebauer, 1995; Davison & Edwards, 1998; Patterson, 2003). Music therapists view music therapy as a “...well established profession similar to occupational therapy and physical therapy” (American Music Therapy Association, 2002, p. 1). Others, however, would place it in the category of controversial or non-proven approaches in special education, due to the lack of empirical evidence regarding its effectiveness (Dempsey & Foreman, 2001; New York State Health Department, 1999). Its use is not included in standard texts on the education of students with moderate to severe disabilities (see Snell & Brown, 2000; Westling & Fox, 2004) and it is not included in articles reviewing effective approaches to educating this population (Browder & Cooper-Duffy, 2003; Wolery & Schuster, 1997). Music therapy does, however, meet some of the criteria for identifying controversial practices identified by McWilliam (1999) and Herbert, Sharp, and Gaudiano (2002). For example, promotion of its use relies largely on anecdotal and case study evidence, some proponents are hostile to scientific evaluation (Aigen, n.d.), and proponents claim benefits for a very wide range of conditions. Even so, the use of music therapy in educational programs for students with severe disabilities is widespread (Chase, 2004; Ockelford, Welch, & Zimmerman, 2002; Smith & Hairston, 1999; Stephenson, 2004).

How then, should schools and teachers working with students with severe disabilities approach this therapy?

This paper focuses on the use of music therapy in educational settings for school students...
with moderate to profound intellectual disability and multiple disabilities, excluding students with autism spectrum disorders. It will discuss prevalence of use of music therapy in special education settings, describe goals and practice of music therapy with students with severe disabilities, review recent research and then consider possible applications of music therapy in the education of students with severe disabilities.

Use Of Music Therapy In Special Education Settings

Music therapy is becoming increasingly associated with special education, particularly with the education of students with severe disabilities. It is seen as a desirable component of education by some parents of students with disabilities (Fidler, Lawson, & Hodapp, 2003). In the U.S. context, it is recognized in educational settings as a “Related Service” that may be provided to assist a child with special education needs (Mattson, 2001; Patterson, 2003). Also in the U.S., 12% of music therapists report working with people with developmental disabilities (Chase, 2004) and increasing numbers are working with children with developmental disabilities in school settings (Chase; Smith & Hairston, 1999). Smith and Hairston, in a survey of American music therapists who worked in schools, found that 78% worked with children with developmental disability and 71% with children with multiple disabilities. In the U.K. a survey found just over a third of schools enrolling students with severe or profound learning difficulties had a music therapist working on site, although the authors suggest as few as 2% of students may have received therapy (Ockelford et al., 2002). Similarly, in Australia, a survey of the websites of schools enrolling pupils with high support needs found just over a quarter of the sites included information about music therapy in the school (Stephenson, 2004).

Goals Of Music Therapy

Meadowes (1997) in a review of music therapy for children with severe and profound multiple disabilities, described six goals of music therapy for this population. The first is “fulfilling the child’s basic needs” (p.4) which involves creating a trustworthy and responsive environment. The second is “developing the child’s sense of self” (p. 4) where the child builds relationships with musical instruments, music and the therapist. The third is “establishing or re-establishing interpersonal relationships” (p. 4). The fourth is “developing specific skills” (p. 5) such as eye contact, reaching, or using a switch within musical activities. The fifth is “dispelling pathological behaviour” (p. 5), and the sixth is “developing an awareness and sensitivity to the beauty of music” (p. 5).

Music therapists may approach these goals in a number of ways, depending on their philosophical and theoretical beliefs. Hooper (2002) cited Moranto (1993) as enumerating at least 123 forms of music therapy. It seems that only a subset of these are used with children with severe disabilities. According to Meadowes (1997) music therapists working with students with severe disabilities may focus on music as recreation, as a reinforcer for desired behavior, as a means to develop other skills and knowledge, and/or to “heal.” Similar outcomes for music therapy within special education are described by the American Music Therapy Association (1999a, b). Music therapists using the Nordoff-Robbins approach, often used with people with severe disabilities, emphasize the development of communication and relationships through music (Nordoff-Robbins Music Therapy Australia, n.d.). Daveson and Edwards (1998), writing in the Australian context also noted the use of music therapy in achieving academic goals, in teaching gross and fine motor skills, in developing social interaction skills and in using music as a motivator for other tasks. In a survey of assessment tools used by music therapists in the U.S., Chase (2004) reported that therapists assessed motor skills (fine and gross), communication skills, social skills and cognitive/academic skills. Pellitteri (2000), who also identified speech and language, gross and fine motor skills, academic, behavior, social and aesthetic goals as part of music therapy, sees this crossing of several areas as a strength of music therapy in special education.
Meadowes (1997) described a range of activities that may occur in music therapy sessions, such as the child using musical instruments alone or with the therapist. The therapist may respond to the child’s use of an instrument. The child and therapist may improvise together or the child may learn a specific music skill. The therapist may introduce activities that promote non-music skills, but are related to music and the instruments such as shaking or turn taking. The therapist may encourage the child to vocalize or sing, or work on listening and comprehension. This may be at the level of provision of sensory stimulation or at a higher level. Movement activities may also be included to promote both whole body and fine motor skills through formal movement or by the child spontaneously responding to music. Children may move independently or be assisted by adult helpers. Music and movement sessions may be run with the involvement of a physiotherapist and may be highly structured with specific movement goals or improvised. Different therapists may use the same range of activities in different ways depending on their orientation (Meadowes, 2002).

Pellitteri (2000) described the typical group musical therapy session in a special education setting in the U.S. as commencing with a greeting song, moving into activities such as singing songs, playing instruments individually, in turns or in groups and moving to music in a directed or spontaneous way before a final song to close the session. He notes that these activities may be used by teachers to reinforce the therapy sessions. He does not consider this as music therapy but rather the use of music in education, because he sees the relationship between the therapist and the child as an essential element of music therapy.

Perry (2003) described a similar structure in sessions in Australia. Precomposed and improvised songs were used as well as improvised accompaniments related to children’s responses. Musical instruments and voice were used in turn taking and synchronous interactions.

The diversity of goals and activities of music therapists, lead to a range of claims made about the benefits of music therapy to children with severe disabilities, including the development of communication, social skills and purposeful movement (Aldridge et al., 1995; Duffy & Fuller, 2000). As Daveson and Edwards (1998) point out, many of the general goals of music therapists are broadly congruent with the goals of special education. What is lacking is the evidence that students can in fact achieve those goals through music therapy. Although music therapists claim benefits, these claims depend more on anecdotes and descriptive case studies that empirical evidence (see Nordoff & Robbins, 1985). Boxill (1985) made many claims for the benefits of music therapy for people with disabilities, and included vignettes and case studies, but there is little research beyond case study reports to validate the claims made.

Erdonmez (1991) reviewed relevant literature regarding the efficacy of music therapy with different groups. She found that music may affect stereotypical behaviors such as rocking, that children with profound intellectual disability responded more to voice than to musical instruments, and that vocalization was more likely when music was soft and when the sound source was close to the child’s head. She located one study that showed music was a reinforcer for some people with intellectual disability. On the other hand, Green, Reid, Canipe, and Gardner (1991) who assessed the preferences of people with profound multiple disabilities found that neither rock music nor soft music was a preferred stimulus for any of the students they assessed. None of the studies summarized by Erdonmez speak to the efficacy of music therapy in bringing about important and significant change in people with severe disabilities.

In a review of studies on music therapy published in medical journals between 1983 and 1990, Aldridge (1993) mentions one descriptive study on children with multiple disabilities. In a general conclusion on music therapy research up to 1990 he stated (p. 28), “. . . there is a general absence of valid clinical research material from which substantive conclusions can be drawn.” He also makes the
surprising suggestion that if music therapy is an accepted treatment for children with disabilities, it “requires no further scientific investigation to support its incorporation as part of a treatment plan.” (p. 29). This conclusion would be unacceptable to those who advocate for evidence-based practice.

Even now, ten years on from Aldridge’s (1993) review and call for more scientific investigation, there appear to have been few controlled studies of treatment outcomes, particularly for children with intellectual disability. This has been recognized within the field itself (Aldridge et al., 1995; Duffy & Fuller, 2000). Ockelford et al. (2002) in their discussion of the role of music in the education of students with severe disabilities noted that there is “scant contemporary literature” (p. 178) on this topic, although there is a growing body in relation to music therapy itself. There has always been a focus on more qualitative methods within the field of music therapy, and though these may be ideal for exploring the perceptions of music therapists and the processes of music therapy, they do not provide the quantitative data necessary to demonstrate change in children that can be clearly attributed to music therapy (Aldridge et al.).

**Review Of Recent Research On Music Therapy**

In order to review more recent work, a search was conducted for studies on the outcomes of music therapy that included children aged 4 to 18 years old with moderate to profound intellectual disability or multiple disabilities (excluding autism spectrum disorders), published between 1995 and 2004. Studies needed to have some educational relevance. Those addressing purely medical aspects were not included. Hand searches of the Australian Journal of Music Therapy, British Journal of Music Therapy, Journal of Music Therapy and Music Therapy Perspectives were carried out. In addition, searches using the electronic data bases PsychINFO, Pro-quest Education Journals and Expanded Academic, were carried out using the search term “music therapy.” The titles and/or abstracts of articles were viewed, or where necessary the whole article, and only those meeting the above criteria were included. The reference lists of all articles located in these searches were also searched for further relevant articles.

This search located only seven studies as summarized in Table 1. Where studies included younger children or adults, and results for these participants are included separately, they are not included in the table.

Aldridge et al. (1995) reported a group study that compared two small groups (5 and 3 children) of children with disabilities who commenced music therapy at different times, and received therapy over a twelve-month period. Effects were assessed using the Griffiths Mental Developmental Scales and a scale developed by Nordoff and Robbins that has never been validated. Results suggested that music therapy had a small positive effect, but other causes could not be ruled out. Designs of this kind are flawed because they do not compare the treatment with a control treatment and gains may have been seen if the children had spent an equivalent amount of time in other non-music activities with responsive adults. It is important to design studies that demonstrate that it is the particular activities in music therapy that promote development. This study is also problematic in that it does not give a clear description of the procedures used so that they could be replicated by other music therapists.

Braithwaite and Sigafoos (1998) compared the effect of musical antecedents and social antecedents on the communicative responsiveness of five pre-school children with severe disabilities. For three of these children the musical antecedents appeared to be slightly more effective in eliciting use of existing communication skills, although there was some overlap in the range of results. Further work needs to be done to explore which factors were responsible. For example, students may have been more motivated to request a musical instrument in the music condition than a book in the social condition, or the musical conditions may have provided a general motivational boost to some children. This study does show, however, that small n designs (in this case an ABAB design) can demonstrate empirically the effects of music therapy on particular behaviors of individual children.

Duffy and Fuller (2000) explored effectiveness of a music therapy program for improving social skills in children with moderate in-
intellectual disability. Two programs were devised to teach the same skills, one with pre-recorded music for musical activities and the other with substitute activities for the musical activities. Staff was trained in the implementation of the programs with matched groups of children at four centers. Social skills were assessed pre and post program. Results showed

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>Design</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldridge et al. (1995)</td>
<td>Twelve children aged 4 to 6.5 yrs, developmental age 1.5 to 3.5 yrs.</td>
<td>Two groups, first group received three months individual therapy while second group received none, then second group received therapy while first group rested. Replicated once.</td>
<td>Four children lost to study. Larger mean changes to Griffiths Quotient during therapy than resting, mostly in hearing and speech subscale.</td>
</tr>
<tr>
<td>Braithwaite &amp; Sigafoos (1998)</td>
<td>Five children aged 3.5 to 4.5 years with severe delays in adaptive behaviour and language development.</td>
<td>Compared effects on communicative responsiveness of two antecedent conditions, social interaction and social interaction plus music using an ABAB design.</td>
<td>Moderate increases in responsiveness for three children in the music plus social condition.</td>
</tr>
<tr>
<td>Duffy &amp; Fuller (2000)</td>
<td>32 children, aged 5 to 10 years with moderate intellectual disability.</td>
<td>Compared music therapy social skills teaching with non-music social skills teaching.</td>
<td>The music therapy intervention was not more beneficial than the non-music approach.</td>
</tr>
<tr>
<td>Ghetti (2002)</td>
<td>Six children aged 7 to 17 with profound disabilities.</td>
<td>Within subjects design compared behavior state in baseline (talking to child) with behavior state in three different musical conditions (rhythmic stimulation, song singing, instrument playing).</td>
<td>None of the three conditions were more effective than baseline in eliciting and maintaining alert behavior.</td>
</tr>
<tr>
<td>Perry (2003)</td>
<td>Ten students aged 5 to 11 years with severe and multiple disabilities.</td>
<td>Qualitative study describing communication in music therapy sessions.</td>
<td>Musical interaction can provide a context for communicative interaction.</td>
</tr>
<tr>
<td>Yashuhara &amp; Sugiyama (2001)</td>
<td>Three girls aged 4, 5 and 6 with Rett Syndrome.</td>
<td>Received 40, 40 and 12 sessions of music therapy. No details provided. Were receiving other intervention as well.</td>
<td>No detail on how change assessed. Some improvements noted, not sustained in one child.</td>
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that both groups improved their social skills, and that the music therapy intervention was not more beneficial. However these results may be open to debate as the music was pre-recorded and therefore does not reflect the responsive, improvisational approach taken by many therapists.

Ghetti (2002) described a study that explored the effect of various musical conditions (rhythmic stimulation from the therapist playing a drum, song singing intended to elicit vocalization, and playing rhythm instruments) on the behavioral state of students with profound disabilities. She found none of the musical treatments were better than baseline conditions, where the therapist simply talked to the students, at maintaining students in an alert state. However, for all sessions the students were wheeled from their classroom to a new environment, and all sessions included interaction with the therapist and therefore baseline levels of alert state may have been higher than levels in a typical classroom environment. Much more detailed individualized analysis of behavior state may be necessary to capture any effects of music therapy on individual children.

Studies by Hill (1997) and Yasuhara and Sugiyama (2001) both concerned girls with Rett Syndrome. Both provided little detail of the music therapy practices, or of how improvements were assessed. Neither show that improvements were due to music therapy and not to normal development or other interventions.

The study by Perry (2003) provided a qualitative description of music therapy sessions and children’s communication skills. It did not aim to demonstrate effects and will be discussed later in this paper.

These more recent studies add little to the earlier research. It seems the more carefully a study is designed, the less likely it is that significant positive effects will be demonstrated. Many of these studies show that the use of music may provide a positive context and have a motivational effect for some children, but these uses would not require a music therapist. There are studies outside the music therapy field that demonstrate these effects of music clearly. For example, a study by Durand and Mapstone (1998) clearly showed that for two adults and one child with intellectual disability, challenging behavior was much more likely when they listened to slow beat music than when they listened to fast beat music. Negative facial expressions were also more common during slow beat music. Music thus seems to moderate the conditions which would normally produce problem behavior in some people. This study clearly identified, through functional analysis, the conditions that lead to challenging behavior by the participants and then through further individualized analysis clearly demonstrated the impact of music during the 10 minute assessment sessions. This study suggests that appropriate music may help produce a generally “positive context” (p. 376). Indeed the teachers of one participant in this study successfully introduced the use of fast beat music during difficult tasks to promote participation. A similar finding in relation to music was made by Carey and Halle (2002) who after carrying out functional analysis of the self-injurious behavior (SIB) of a boy with severe intellectual disability, found that the behavior was maintained by escape from task demand and by access to music. The student was then found to have lower rates of SIB when music was available during demand conditions. Although these studies illustrate potential positive effects of the use of music as a reinforcer, use of music in this way would not appear to require a music therapist.

There is then, still very little evidence to show that musical therapy can result in the achievement of important educational outcomes for students with severe disabilities. There is a clear need for additional good research in this area which is methodologically sound and which incorporates clear criteria for demonstrating effects.

Discussion

Approaches To The Use Of Music Therapy In Schools

Special education has not been immune from the adoption of fads and unproven controversial therapies, such as facilitated communication (Huebner & Emery, 1998) and similarly the allied health fields have generated a number of unproven practices which are directed at students with special education needs such
as sensory integration and auditory integration (McWilliam, 1999; Shaw, 2002). Should music therapy be regarded as a fad treatment, or should it be taken more seriously? The research base for the use of music therapy with students with severe disabilities is certainly sparse, and educators would be justified in viewing its use with considerable suspicion.

Given that music therapy is widely used in schools, how should educators approach its use? Procedures described by Brunk and Coleman (2000) in the U.S. for determining whether or not music therapy should be included as a related service in a student’s individual educational program (IEP) may be a starting point for making decisions about who might benefit educationally from participation in music therapy sessions.

In the U.S., since music therapy can be an allied service and incorporated into a child’s IEP, it must contribute to the achievement of the educational goals set in the IEP. Ideally the music therapist would work with the child’s family, teachers and other professionals to carry out assessment, to develop the goals and objectives and teaching programs. However music therapists may also provide consultation or provide a written recommendation describing their services to the IEP team. Music therapy can then be legally included if an appropriate assessment is carried out that demonstrates to the parents and to the school district that music therapy would help the child attain a measurable annual goal, progress in the general curriculum, participate in extracurricular activities and/or participate in activities with children without disabilities. (Brunk & Coleman, 2000; Mattson, 2001; Patterson, 2003).

Brunk and Coleman (2000), both music therapists, detail their recommended process for assessment (SEMTAP) by a music therapist as part of the IEP process in U.S.. They suggest that music therapy may be appropriate for students who have demonstrated that they can be motivated to attempt or complete tasks by music, who use additional communication modalities, who have shown interest in music or musical instruments and who retain information from songs. If music therapy appears to be appropriate, they recommend that specific individualized assessment (best carried out by a music therapist who will not be contracted to deliver the service) should then focus on specific IEP goals that could be addressed within music therapy sessions. The student’s current performance on these goals with and without music therapy procedures should be compared. The aim of this detailed assessment is to clearly demonstrate that the student is helped to perform activities directed at achievement of IEP goals by music therapy strategies, and to indicate whether the music therapist should provide direct services in pull out sessions or work within the classroom.

In the sample assessment provided, music therapists presented quite formal tasks such as matching colors to printed color names, using graphic symbols to choose, using scissors to cut and ordering three pictures in sequence. The therapist also observed the child’s responses to music and its possible role as a motivator. This form of individualized assessment seems to have been widely adopted by music therapists working with children with disabilities in the U.S.. A survey of assessment strategies used by music therapists found that 70% reported using the SEMTAP (Chase, 2004). It certainly provides a structured process to determine whether or not music therapy would be of educational benefit to an individual student.

**Potential Benefits Of Music Therapy**

For students with more severe and multiple disabilities, an area of possible benefit of music therapy may be in the area of communication skills. Communication skills have been a particular focus of attention for music therapists, with many case study reports and anecdotes claiming improvement in this area (see for example Aldridge et al., 1995; Boxill, 1985; Nordoff & Robbins, 1985). Many music therapists clearly appreciate the importance of developing intentional and presymbolic communication for students with severe disabilities and the ways these can be elicited in interaction with a responsive partner (Boxill; Aldridge et al.; Perry, 2003; Wigram, 1999). It appears that music therapists who emphasize the building of relationships through musical activities are particularly aware of early communication skills, particularly non-verbal communication, and the ways in which children...
with communication delays or disorders might be encouraged or motivated to communicate within musical activities. Such therapists describe the use of improvisations, which are responsive to the child to promote eye contact, turn taking, sharing, joint attention and other early communication skills (Boxill; Perry; Voigt, 1999; Wigram).

Perry (2003), in a qualitative observational study of students with severe and multiple disabilities in music therapy sessions highlighted the potential of these sessions to develop early communication skills in these children through opportunities for joint attention, turn taking, initiating, responding and sustaining attention and the like. She provided a discussion of the ways in which music therapists may interact with children, which mirror the responsive interactions between parent and child believed to support communication development (O’Kane & Goldbart, 1998). From her observations, it appears that music therapists can provide a range of communication opportunities and encourage children to be responsive to these opportunities, but they face difficulties with students who are not alert and who appear unmotivated. Similarly, Braithwaite and Sigafoos (1998) demonstrated increased use of existing communication skills in a music therapy context. Despite such research however, it appears that more research in this area to examine acquisition and use of early communication skills within a music therapy context as one form of a responsive environment to elicit these skills.

**Recommendations**

The most fruitful approach to use of music therapy as an educational intervention in schools for students with severe disabilities may be to focus on its use as context for teaching and practicing early communication skills. In the absence of a research base and clear guidelines for practice, music therapists, speech pathologists and educators should work together to carefully assess existing communication skills and the conditions under which they may be elicited and reinforced (see for example O’Kane & Goldbart, 1998). However, it is debatable whether the use of music and musical activities as a responsive context for teaching requires the use of a music therapist. Special educators have traditionally embedded the teaching of functional skills in motivating activities and routines, and the use of musical activities in this way may exploit the motivating and reinforcing effects of music in conjunction with pedagogical practices that have a sound research base.

It is likely that interventions employing music therapy would need to be tailored to individual responses, as not all students will respond to music and not all are likely to respond in the same way (Braithwaite & Sigafoos, 1998; Green et al., 1991). Those working with students should have clear goals in mind, recorded as observable outcome statements and progress towards the outcomes should be assessed across all contexts, including music therapy sessions. There is a clear need for further research to demonstrate the effectiveness of music therapy for achieving a range of goals in the education of students with severe disabilities. Given the lack of empirical support for educational benefits arising from music therapy, it may be appropriate for schools to reassess the rationale for music therapy programs and to determine whether or not the program is providing anything beyond a pleasant experience and an enjoyable context for teaching skills. If music therapy is used with students with severe disabilities, it should be used responsibly after appropriate assessment, with clear aims and with ongoing monitoring to demonstrate that learning is occurring.

**References**


Ockelford, A., Welch, G., & Zimmerman, S. (2002). Music education for pupils with severe or profound and multiple difficulties – current provi-


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