

Music at the Mary Hare Grammar School for the Deaf from 1975 to 1988¹

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Abstract

This review aims to show that it is possible for deaf children to learn and play music to a high academic standard specifically at the Mary Hare School for the Deaf in Newbury, England. The authors describe the foundation of the music programme that led to academic successes years later, and emphasise the need for neuroimaging research to uncover the cognitive neuroscience factors behind these successes. Based on summaries of previously inaccessible publications, the review focuses on the period from 1975 to 1988 describing the early musical activities, public performances and lessons as music became integrated into the curriculum. The origins of the programme are attributed to increased auditory attention and experimentation in the Piagetian model of child development facilitated by powerful behind-the-ear hearing aids. Since 1981 almost 310 certificates from the Associated Board of the Royal Schools of Music have been awarded to deaf pupils for obtaining at least a pass in Grade examinations, and since 1991 more than 75 pupils have obtained passes in national examinations in music. The review concludes with a discussion on the paucity of knowledge of how sensory deprivation at different stages of the auditory pathway from the cochlea to the brain affects music education.

Introduction

Due to advances in technology built upon discoveries in the auditory sciences (e.g. Geisler, 1998; Jahn & Santos-Sacchi, 2001), it is now possible for hearing impaired² children to learn and play music to a degree formerly considered impossible. However, little is known about the Mary Hare Grammar School for the Deaf in Newbury, England which is believed to be the only specialist school for the deaf

in the world that offers music as an academic subject. Since 1981 the Associated Board of the Royal Schools of Music (ABRSM) has awarded almost 310 certificates to pupils for obtaining at least a pass in Grade examinations, and since 1991 more than 75 pupils have passed national examinations in music. These successes could not have been predicted when music was introduced at Mary Hare in 1975.

Generally, music education of deaf children has been either on an individual basis (e.g. Hash, 2003; Jahns, 2001) or in groups at many auditory-oral, auditory-verbal, bilingual and mainstream educational programmes for deaf children (Lynas, 1999). These are aimed at enhancing linguistic (e.g. Silvestre & Valero, 2005), speech (e.g. Glubokova & Vakhnina, 1987; Petitjean, 1998), listening (e.g. Amir & Schuchman, 1985; Dalgarno, 1990), and cultural (e.g. Barbour, 1983; Darrow, 1993) skills. Although there have been cases of individuals pursuing music as an academic subject, recent reviews (e.g. Abotomey, 2008; Fix, 2008) do not mention Mary Hare. To rectify this omission, it is now timely to provide a new perspective on the origins and evolution of music at Mary Hare.

The perspective focuses on the first phase of the music programme from 1975 to 1988 via a review of papers, articles, reports and an overview (Fawkes, 1981b, 1986a, b, c, d, 2006; Gillingham, 1981; Levi, 1980) that have been recently archived online (Mary Hare History, 2007a). The paper begins with a description of the school followed by that of the “big bang” marking the interest in music, the developing music programme, increasing public awareness, other directions and the integration into the academic curriculum. A summary of academic successes since 1981 followed by a discussion concludes the paper. Wherever possible, original sources have been cited and secondary ones verified.

The School

Founded in 1946 as the national grammar school for the deaf (Boyce & Lavery, 1999; 2005; Crawford, 2001), Mary Hare School provides deaf children aged 11-18 years old access to a full curriculum enabling them to enter university or obtain vocational training. It has an enrolment of around

220 pupils from a catchment covering the whole United Kingdom (Wright, 2002). Each of the first five years (Years 7-11) consists of three classes of nine to eleven pupils, and the Sixth Form (Years 12-13) has about sixty pupils. Aetiology of deafness ranges from congenital (prelingual) to adventitious (postlingual), and degree of deafness from partial to profound (Askew, 1960; Munro et al., 2005; Pearce, 1987). Pupils are educated via the auditory-oral method (Lynas, 1999) i.e., pupils communicate with each other and their teachers by speech and lip-reading with digital hearing aids (Mudry & Dodelé, 2000) or cochlear implants (Niparko & Wilson, 2000). Teachers are graduates in specialist subjects and trained in deaf education. State of the art audiological technology in the small classrooms ensures access to the curriculum on an equal footing with those at regular schools (Wright, 2002). The General Certificate of Secondary Education (GCSE) (Eckstein & Noah, 1993) curriculum is as broad and as balanced as those found in the top regular schools, and promotes high levels of achievement in subject areas which are often regarded as inaccessible mainly due to problems of delayed language development. The Sixth Form prepares deaf students for examinations at the General Certificate of Education (GCE) Advanced Level (Eckstein & Noah, 1993).

The Big Bang

Prior to 1975, music was rarely taught and only on an individual basis as an extracurricular activity (Hay et al., 2006). During the academic year, two to eight pupils took weekly individual lessons from an external i.e., unaffiliated specialist teacher. Altogether, six pupils obtained certificates in Grade examinations (Hillier, 1960; Jagger, 1962; Wilkinson, 1958; 1959). Using hearing aids, these severely deaf pupils had sufficient auditory discrimination skills (e.g. Ling, 2002) to play the piano or organ at Assembly in the mornings or at the annual Speech Day event.

Most pupils had one analogue hearing aid connected to one ear, or both ears via a Y-lead; those with two hearing aids were rare exceptions. These hearing aids were held in place via body-worn

harnesses (Scottish Hearing Aid Museum, 2007). However, the harnesses often failed to keep the hearing aids intact during the typical physical activities in breaks between classes and further were not conducive to forming friendships with hearing children in the mainstream. This situation changed when high-powered analogue behind-the-ear hearing aids were made available by the National Health Service in 1974 (Powell, 2001). The significantly smaller aids were worn bilaterally in most cases and did not need harnesses or large batteries.

Among the first to benefit from these hearing aids, the partially hearing pupils began to immerse themselves in the prevailing pop culture by organising discos in the weekends. They also experimented with making music including forming bands such as “Lumpy Custard” and later “D.A.D.”. The formation of Lumpy Custard, a band of two guitars, drums and vocalist, was a catalytic moment in the history of school (Mary Hare History 2007c; Nolan, 1976). Lumpy Custard played songs by the Beatles, The Rolling Stones, Status Quo, Simon and Garfunkel, Glen Campbell and John Denver. In particular, songs by Status Quo were found to be easy due to their simple chord structure (Williams, 2007, pers. comm.). Lumpy Custard’s inclination for playing loud music made disco dancing on the wooden floor enjoyable for the profoundly deaf pupils. The freedom to dance or move to the vibrations was not something they had experienced before (Nolan, 2008, pers. comm.).

The quantum leap in audiological technology resulted in increased auditory attention and experimentation among the deaf pupils which is consistent with the Piagetian model of child development (Piaget, 1962). It was also evident that deaf children were discovering their innate musicality (Trehub, 2003). This musical enculturation (e.g. Hannon & Trainor, 2007) prompted the Deputy Principal Bill Fawkes, who had been teaching deaf children for seventeen years, to wonder whether it was possible to teach music on a large scale at Mary Hare. Based on his experience with his children, he noted that the universal experience of gathering round the piano to sing or play various

instruments was beyond most deaf children. Specifically, the question was whether it was possible for deaf children to enjoy making music *for its own sake* (Fawkes, 1981b).

A Nascent Programme

A descant recorder group of junior pupils started to play songs such as “The Old Grey Goose,” “Summer Goodbye” and “London’s Burning” (Fawkes, 1981b). The group had two each of bass, tenor, alto and treble played by one profoundly deaf, five severely deaf and two partially deaf girls (Gillingham, 1981). Sixteenth- and seventeenth- century works such as those by Susato, Tabourot and Phalese were performed with good intonation, rhythm and expression. (Levi, 1980). One severely deaf performer found she could express herself, get rid of her frustrations and that “tonguing” on the recorder, helped with her speech (Levi, 1980); the profoundly deaf performer said that it was satisfying that others enjoyed what she could not hear (Williams, 1980).

Participants at the Assembly began to feel the effects of these activities also. It gradually became possible to accompany hymnal singing with percussion and pitched instruments. Although progress was slow due to factors such as breath control, which was generally a problem for deaf children (Fawkes, 1981b), it was becoming obvious that the newer hearing aids assisted the development of musical skills. To quote one member of Lumpy Custard, “we were never terribly musical but we all loved it as it opened our eyes to what was possible. It was also more than playing/performing...it was about involving the rest of the school, despite many of us not being able to hear any meaningful sound.” So although not all were to excel to any great degree in music, all were able to experience something from the music scene.

By 1977, the music department run by Bill Fawkes solely was called upon to teach descant-, treble-, tenor-, and bass recorder, flute, clarinet, guitar, piano, and trumpet (Fawkes, 1981b). Hearing aids were checked regularly to optimise the use of residual hearing. It became easier to hit the notes

more accurately and make more pleasant sounds after learning a few chords (Gillingham, 1981). Music by Couperin, Henry VIII, and John Dowland floated out of the classrooms, dormitories, assembly hall and the music room which was usually a converted classroom on a temporary basis (Fawkes, 1981a) until 2006 when it found a permanent home in the Arlington Arts Centre (Rocca, 2006).

Public Awareness

Word of mouth about music at Mary Hare began to attract the attention of the local community (Pope, 1978). The appearance of Lumpy Custard among the several activities at Mary Hare in a special edition of the television news magazine “Pebble Mill at One” marked the beginning of national awareness of music at Mary Hare. The next several years saw groups and bands performing in concerts and community groups (for details see Mary Hare History, 2007b). A notable event was a performance at the 50th birthday celebration of the famous conductor Lorin Maazel, at the Royal Festival Hall in the presence of HRH Prince of Wales (Pope, 1980). A painting competition organized by the Beethoven Fund for Deaf Children founded by Anne Rachlin, who was married to another famous conductor, prompted criticisms that there was no room for “expressive” teaching in deaf education (Levi, 1980).

The fact that as many as 40 pupils in a specialist school for the deaf were playing musical instruments resulted in a steady stream of visitors to the school (Gillingham, 1981). An article in “Music Teacher” (Fawkes, 1981b) inspired a teacher to work with college students to integrate music into the daily activities of deaf children mainstreamed at a regular school in Bath with some success (Salt, 1982); a similar programme was started at a school for the deaf in Toledo, Ohio (Fawkes, 1989).

The academic music world began to hear about music at Mary Hare. A visit by Professor Hubicki of the Royal Academy of Music led to participation in the “Communication through Music” project at the Royal Academy of Music (Fawkes, 1986a). A demonstration by the band and the recorder group was followed by a description of the curriculum (see section on curriculum). Solo acts and group

activities with audience participation provided examples of improvisation and composition. International recognition arrived with demonstrations at the XVIIth Conference of International Society of Music Education in Innsbruck (Fawkes, 1986c) and a workshop at the Royal Northern College of Music in Manchester (Kennard, 1987).

Other Directions

In 1985, working as a music consultant after resigning as Deputy Principal, Bill Fawkes moved in new directions including integrating music into the curriculum (see next section). The impact of the personal computer was beginning to impact music education. Inspired by the book “Learning Difficulties and Computers” (Hawkrige & Vincent, 1992), pupils were encouraged to experiment with a computer linked to a MIDI SAS piano that provided a course on keyboard fundamentals, elementary music theory and piano (Fawkes, 1986d). Pupils discovered that by paying more attention to listening via residual hearing, it was possible to distinguish pitch more accurately than before. Some had previously relied on the notation on the score rather than using residual hearing despite the difficulty in distinguishing pitch differences between neighbouring notes, particularly semi-tones. Experimenting with the computer enabled more pupils to obtain a deeper and lasting appreciation of music.

Musical activities also impacted on drama activities (Fawkes, 1981b). Music was integrated into the Carol Service and became part of the Nativity Play. Large scale productions such as *As You Like It*, and the Easter play took place (Pope, 1980). The synergy between the acting and accompanying music proved to be critical. For example, the flautist inspired a partially hearing pupil to play the lead role of Christ better in the 1981 Easter play. It was necessary to coordinate visual attention of the pupils to ensure that music interludes coincided with the entrance and exits from the stage. Getting actors to dance in synchrony with music required several hours of practice. The secret was to make sure that a few of the dancers could see the conductor with the rest following in cue (cf. Williams, 1989).

Music in the Curriculum

By 1988, music had been integrated into the curriculum making Mary Hare prepared for the demands of the mandated “National Curriculum” (Kelly, 1990). Every pupil was to be exposed to music in one form or another. This is summarised in this section (for more details see Fawkes, 1985; 2006).

The curriculum was based on demonstrating the evolution of music from prehistoric times to the modern day. Each class of 8-11 pupils in the first and second year had one weekly lesson of at least 40 minutes. The basic idea was to develop a strong rhythmic sense through bodily movement (cf. Kodály), and then gradually to harness this rhythmic sense in the playing of first percussion and then pitched instruments. These activities consisted of a) relaxation and breathing exercises, b) hand clapping, c) marching, d) clapping and marching, e) body swaying, and finally f) singing folk songs such as “Old MacDonald Had a Farm” with role reversals to learn vocalisation. Then tambourines were used in beating rhythmically together followed by sectional playing to demonstrate close observation and division of activities from unison to polyactivity. When the group established these activities, instruments such as triangles and maracas were introduced to further stimulate the use of residual hearing and body-rhythm. Then came pitched instruments, which were included alongside rhythmic clapping. At this stage, the group was split into two or three or more groups. Some would play basic recorder notes and some would blow melodicas while others would continue rhythmic clapping. Drums would then come, followed by the introduction of elementary musical notation. Here the blackboard enabled the pupils to associate the black notes with one count or beat and the white ones with two counts or beats. This meant that the pitching of notes on an instrument could be played.

The book “Concert Starters” (Salaman, 1981) proved to be useful for a primitive orchestra involving descant recorders, harmonicas or melodicas, tuned and untuned percussion, and open string violin. The advantage was that the number and type of instruments used could be varied to

accommodate even the most rudimentary players. Crotchets and minims were first introduced followed by time signatures, bar lines and repeat marks. The dotted minim appeared with the introduction of triple time. The rest, dynamics and expression marks were not encountered, but loud and soft playing was introduced via echo effects in the pieces. Thus musical concepts were being absorbed. Also, swapping instruments allowed pupils to discover a favourite instrument. However, working with books (e.g. Rosenberg, 1977) was insufficient for developing technique as was the case with the recorder group. To remedy this, pieces based on notations and keys were composed and performed (Fawkes, 1986b).

Progress was not marked according to schedule but to the abilities of the group and rate of progress varied from year to year. In one case, a first year group was as advanced as a second year group. Beyond the second year, it would then become apparent who had musical ability and who hadn't. Pupils were encouraged to form groups to practice outside the classroom. In later years, the more ambitious pupils experimented with the flute, clarinet, trumpet, guitar and full drum set.

While musical theory was included in the context of discovery rather than course work, working with non-pitched crotchets helped with musical reading (Fawkes, 1986b). So it became logical for pupils to attempt examinations in music. In 1982, history was made when four members of the first recorder groups passed Grade I and II in Theory of Music with one pupil reaching Grade V in 1983. Altogether, Bill Fawkes entered 16 pupils who obtained certificates in piano (9) and Theory of Music (38) (data from ABRSM). External examiners assessed the music programme resulting in additional improvements. While no accommodations were made in the examinations, the aural tests were refined to put all examinees on an equal footing with provisions made in the same way as those for partially sighted or blind pupils (Fawkes, 1989). Thus, by removing some of the more stilted aspects of the aural tests, everyone not just the deaf examinees benefited.

From 1979 onwards, the Pope music prizes, named in 1981 after a member of the first recorder group who had just matriculated at the University of Oxford, were awarded at the annual Speech Day event. Thus, the stage was set for Mary Hare to offer music as an academic subject in 1988 when GCSE was adopted as the new national examination for 14-16 year olds followed by GCE Advanced Level for 16-19 year olds (Eckstein & Noah, 1993).

Discussion

In 1975, no one would have predicted that thirty years hence children in a specialist school for the deaf would be enjoying and learning music as an academic subject. This was achieved by developing a curriculum that involved pupils first in the primeval activities of rhythm and singing followed by ensemble activity with notation introduced as early as possible. Though not every pupil was enthusiastic, every pupil was given the opportunity to discover his or her own innate musicality (Fawkes, 1989).

The prediction that deaf children would never become professional musicians (Gillingham, 1981) turned out to be incorrect as the two pupils who followed the first to do GCE Advanced Level Music (Michael Johnston in 1994) are now involved in music education. Danny Lane, the second in 1998 and the first to obtain Grade VIII in piano, graduated in French and Music at Keele University in 2001. He is currently working with the “Music and the Deaf” charity which helps young deaf children at both regular and specialist schools meet the key stages of the National Curriculum (Lane, 2006a, b). Ruth Montgomery, the third in 1999 and the first to obtain Grade VIII in flute, graduated in music at the Royal Welsh College of Music and Drama in Cardiff in 2005 (Montgomery, 2002; Rocca, 2006). She is now a teacher of the flute and recently played soloist with the St. Petersburg Philharmonic Orchestra, the Russian National Orchestra and the Royal Philharmonic Orchestra (Music of Life, 2006).

Since 1989, ABRSM has awarded 265 certificates for passes in Grade examinations in flute (93, including 4 at Grade VIII), piano (38), alto saxophone (11), cello (6), violin (6), descant recorder (9),

clarinet (73), B flat cornet (4), oboe (2), tenor saxophone (1), singing (1) and theory (21) to pupils entered by the school (data from ABRSM). Since 1991, 84, 6 and 43 pupils have taken GCSE Music, GCE Advanced Level Music and GCE Advanced Level Performing Arts (which has music and dance components) respectively (data from Mary Hare School).

These academic achievements would not be possible without the confluence of technological and cultural factors in 1975 that led to the formation of groups of guitars and drummers initially for enjoyment, followed by serious groups of recorders and flutes. This is an example of how peer-initiated composition and performance drawing on musical interests should be encouraged in regular and specialist schools (Welch & Adams, 2003). It is not surprising that the advent of more sophisticated auditory prostheses such as cochlear implants and digital hearing aids, has resulted in a maturation of the programme in the second phase from 1988 to 2006 (Rocca, 2006; Smith, 2001). With the Music Department permanently housed in the newly built Arlington Arts Centre, more academic successes are expected.

Deafness is generally attributed to damaged or missing cochlear hair cells responsible for transducing acoustic energy to mechanical energy and thence electrical energy that is transmitted along the auditory pathway from the cochlea to the auditory cortex in brain (Brownell, 1999; Geisler, 1998; Jahn & Santos-Sacchi, 2001). Such sensory deprivation results in limited or absent acoustic transmission and thus degenerative changes at different stages of the auditory pathway (e.g. Kral et al., 2000; Ryugo et al., 2003; Shepherd & Hardie, 2001). Consequently neurons between cortical and subcortical regions in the brain dominate those weakened by limited or absent stimuli leading to neuroplasticity i.e., re-wiring in the deafened brain (Rauschecker, 1999). So cognitive factors such as delayed language development could confound music learning and playing (e.g. Schlaug et al., 2005).

Granted that it is now possible to maximise effective use of residual hearing with digital hearing aids or cochlear implants (e.g. Rhoades, 2006), the overarching question in cognitive neuroscience is how to achieve high academic standards in music with limited acoustic transmission from the cochlea to the brain. Digital hearing aids provide amplification to the remaining functioning hair cells via a nonlinear compression procedure (Mudry & Dodelé, 2000) while cochlear implants bypass the cochlea and stimulate the auditory nerve fibres (Niparko & Wilson, 2000). However, these auditory prostheses have difficulty in resolving the fine structure in musical tones (e.g. Chasin & Russo, 2004; Galvin et al., 2007; McDermott, 2004) so improved signal processing algorithms are needed.

The advent of high resolution neuroimaging technology now means that neuroscientists can examine the shape of brain structures via computational anatomy methods (see articles in Thompson et al., 2009). So it is hoped that future neuroimaging studies of music (Hodges, 2000; Limb, 2006) will uncover the neurological and developmental factors that enable a deaf child to enjoy and perform music at the highest levels. In particular, it will be interesting to understand how auditory prostheses enhances the relationship between pitch learning and speech (e.g. Wong et al., 2007) in deaf children. The last word comes from the present Chief Executive Officer of Mary Hare Schools (Tucker, 2002):

There is increasing evidence that babies are born with perfect pitch and that they use this ability when learning to speak. The argument goes that once the child has learnt to speak, perfect pitch is lost unless it is deliberately cultivated in some way, say, by learning to play a musical instrument. Interestingly a similar thing happens when a child is acquiring language skills, since children are born with the ability to distinguish the speech contrasts of any of the worlds' languages. It is only as they focus on the language of their particular culture that they start to lose this ability. We are very clear that the dynamic relationships in music are very similar to and related to the dynamic relationships in speech. So, put simply, good at music is likely to mean good at speech. We have definitely seen this at Mary Hare.

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¹ This article is dedicated to Richard N. Cole who was among the first pupils in the early days of the music programme at Mary Hare and whose short life has been a source of inspiration to his family and friends.

² Throughout the article, hearing impairment (resp. hearing impaired) and deafness (resp. deaf) are used interchangeably without loss of meaning.