

CHILDREN'S TALENT IN FINE-ART AND MUSIC

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Abstract

The children's talent considered here is the development of potential in fine-art and music to a high standard which few others of the same age can reach. It is suggested that aesthetic perceptual development begins at birth and is likely to become habitual, influencing future interest and the taking up of opportunities for talent development. A comparison study was made of children talented in either fine-art or music, and compared with control groups taken at random from the same school-class in normal British primary schools (N=72). Novel tests of short-term memory in these areas were given, which were highly discriminating. Environmental, especially home, circumstances were found to be of vital importance for exceptionally high-level performance, even when provision and teaching at school was identical and generous. But for children without such home support, school provision took the major role. As most homes do not provide what most children need to develop high-level artistic potential it is essential for schools to do this for potentially talented pupils.

The basis for this study was concern for how children in normal schools who are potentially talented in music and fine-art do - and do not - develop those aptitudes. Talent in the arts is considered here as the development of natural ability to a recognisable standard which few others could reach. Winner (1996) is precise: "The core ability of the visually artistic child is a visual-spatial-motor precocity that makes it possible to capture the contour of three-dimensional objects on a two-dimensional surface" (P. 74). And for music: "The core ability of the musically gifted child involves a sensitivity to the structure of music – tonality, harmony, and rhythm." (p.92). She draws parallels between artistically and musically gifted children, most notably in their 'rage' to practice, such that parents may try to get them to slow down.

However, nothing in life is heard or seen in isolation, and the context in which children have their experiences has subtle and important effects on the perception and production of even the simplest line drawings or sounds. Neither development nor performance can be looked at separately from the environment in which they function. One can see the effects of the social context in the ways an individual deals with a problem, which may change radically in different situations. A child may, for example, think more creatively at home but conform at school; or may fail with the problems set at school but be highly successful in the demands of the street gang.

Developmental research shows clearly that social and economic influences strongly affect, not only the quality of performance, but also an individual's aims in life (Freeman, 1992). The conditions of artistic creativity, according to research by Mark Freeman (1994) are found in an intricate web of, social background, effects of the living and working environment, sheer chance and character. The sooner the open mind and supple fingers of a young child begin to practise the skills of an art, the finer his or her perceptual ability and techniques are likely to become.

Hans Eysenck, (1997) proposed a strong character relationship between creative talent and psychopathology, measurable on the Eysenck Personality Inventory along the continuum of psychoticism (P), a "dispositional trait" - on which males score twice as highly as females. Indeed, there does seem to be evidence of a higher level of creativity among schizophrenics and their families. Eysenck suggested that the common key is in the widening of attention which enables both schizophrenic and creative people to take in more information than most, but that the schizophrenic person can neither select the relevant information nor store it well enough in memory to use it efficiently. However, for gifted children, a thorough overview of research shows little evidence as to their inherent emotional distress (Freeman, 1997; 1998).

Aesthetic ability is probably universal in normal children. Zoltan Kodally, the Hungarian composer, believed that everyone is born with musical ability, and, using his techniques based on folk songs, all Hungarian children are taught to sing to a high level. Playing the violin with Suzuki's method has now spread around the world, and yet it was not thought possible to teach young children to play such a 'difficult' instrument only a few years ago. There do not seem to be comparable universal teaching procedures for fine art, though of course, formal education is not the only way to develop talent.

Aesthetic perception

All perception begins with pattern recognition - the extraction of figure from ground - such as the theme in an orchestrated piece of music. Because these early perceptions of patterns tend to become habits, which are difficult to change, it is important to expose children as early as possible to variety in the arts. Haroutounian (1995) referred to 'metaperception' in aesthetics, "the inner manipulation and monitoring of senses and emotions" (p. 113), part of the essential refinement of discrimination in the development of talent. She describes how, in music, discrimination is developed for subtle rhythm patterns, melodic shapes and tonal colours. Talented artists are aware of dimensions of space, colour and textures "unseen by those who simply look."

The sensitivity of infants to linguistic and musical phrases appears to be of a similar nature. It is likely that even before birth, familiarisation with specific sounds or classes of sound contribute to the development of particular sensitivities and preferences, those for music forming alongside those for human voices. Fassbender (1996) suggested that, initially, perceptions of speech and music may be processed in a similar way, but as specific meaning becomes attached to some sounds they may take different developmental courses. Further, Papousek (1996) argued that the highly developed capacity of very young infants to process complex auditory signals is the precursor of later cultural interest in music. Also, that these very early musical elements pave the way for linguistic capacities earlier than phonetic elements.

In receiving information, there is a distinction between the bio-physics of light and sound and the psychological effects of the environment, both of which impinge on the child's sense to influence the development of perception. Light rays hitting the retina, for instance, reach the brain in a psychologically 'processed' state. Each person's private impressions of sensations are shaped by both the physical reception of images and by experience, which includes language. As ideas change, so does the living language, altering perceptions, imagery and relationships of people with the world. As an example, environmental pollution

was little considered until recently, but the concept and the language now in use to describe it, have altered the ways in which children and adults feel and behave towards nature.

Perception is also related to how one remembers. Short-term memory keeps the immediate impression for a few minutes, so that the first items of a sequence are more easily reproduced. Long-term memory, though, requires more effort to recall the image back to consciousness. As even children's energy is limited, it means that most will choose the least effortful route - the short-term and the least complicated - it is the talented who are more likely to enjoy the challenge of the complex. After many years of research in this area, Winner, (1996) concluded that talented children are distinguished by exceptional memories in their sphere. She also described how in the same way as academically gifted children challenge themselves by reading increasingly difficult books or finding harder mathematical problems, artistically talented children create visuo-spatial challenges, and make headway in a domain with little or no adult support because they seek more complex and interesting things to draw.

Talent in music and fine art are not unrelated to other abilities. The development of cognition and perception is influenced by similar mental and physical experiences, the most important early source of which is the home, notably parental attitudes and the provision of appropriate materials. All long-term studies have shown the cumulative effects of family attitudes in the development of talent (Bloom, 1985; Heller, 1991; Freeman, 1993; 1995a; Arnold & Subotnik, 1994). Culturally disadvantaged children find it more difficult to practice and increase the complexity of their early perceptual learning, which can be seen in little children who are not only below average in recognising objects and situations, but are also less able to describe them (Siegler, 1991).

In fact, the effect of practice in an atmosphere of encouragement is so important that it can overwhelm small differences in talent (Elshout, 1995). It has even been said that : "formal effortful practice is a principle determinant of musical achievement" (Sloboda, Davidson, Howe & Moore, 1996, P. 287). However, in an earlier contradictory statement, when reporting research in Britain on talented young musicians, he found that "the best students had done *less* formal practice in their early years than had the average students" (Sloboda, 1993, p.110). Instead, he found that the best students had received more praise than the others, and their parents had made them feel 'special'. A few psychologists believe that practice is all, such as Howe (1990) who proposed that "in the right circumstances almost anyone can" ... acquire exceptional skills (p.62), and has even claimed that almost any child can be Mozart given that upbringing. In fact, attempts to teach expert skills have been carried out in laboratory studies (Ericsson & Lehman, 1996). But even in those strictly controlled conditions, the trainees differed in the level of expertise they could reach, and the researchers found (as have many others) that motivation makes a vast difference to results.

From the evidence available, it appears that abilities in music and art improve with age. But it is hard to say with certainty whether it is better for a child to have an early, concentrated aesthetic environment or a gradual building of skills, to most closely fulfil his or her artistic potential. In the author's 14-year follow-up study of gifted children in Britain (Freeman, 1991) very many reasons were found as to why some very precocious children failed to carry their promise into adulthood. For example, sometimes emotional problems got in the way, while for others failure to develop potential was due to inadequate learning provision. Many great musicians and artists, such as Mozart and Picasso were precocious in their genius and stayed that way, both being from strongly supportive homes. Others, such as

Van Gogh and André Previn, did not develop their talents until past childhood (Radford, 1990).

Measurement in the arts

Tests of fine-art are few and unsure, and those for musical ability are not always reliable. The major problem of measurement in the arts is of aesthetic interpretation - often a matter of contention between experts - so that it is much easier to assess performance ability. Norman Freeman (1995) has shown how the drawing of young children is hampered by what he calls 'production problems'. This is because early development of conceptual schema and graphic skills is not parallel, making it hard to judge their attempts at either appreciation or creativity, as well as the distinction between performing and creative ability. Added to that there is a 'bio-mechanical' bias in graphic development, which is not apparent in music. Possibly such physical problems are the reason why infant prodigies are rarely found in fine-art, but much more frequently in music. Painters can start and reach their peaks much later in life than musicians. He also points out the merits and relatively untouched field of aesthetic appreciation in children.

The flexibility and efficiency with which one uses available mental resources show up best in novel situations (English, 1992). In fact, Sternberg and Davidson (1986) consider this the main difference between the gifted and other children, i.e. in the way each gets hold of a new task and carries it out. Indeed, that is where the highly able are most likely to show themselves: firstly in their capacity to take a speedy overview; secondly in their ability to form effective strategies to carry it out, and thirdly, in their ability to monitor their own performance. It would be expected that such differences would also be found between aesthetically talented and other children.

However, if special education in the arts is limited to selected groups, however good the selection procedure, there will inevitably be those whose potential contributions are not fully developed. Where either home or school influence is less than adequate in offering encouragement and teaching, children are accordingly obstructed in their progress. For those from culturally poor home backgrounds, school teaching becomes even more important, both as an introduction to aesthetics and for access to equipment.

A study of aesthetic development in children

Given the problematic nature of the assessment of potential by tests of artistic and musical ability, it seemed most reliable to look at children who were clearly recognisable as exceptionally talented. The highly achieving children, as judged by experts, were compared with a matched control group of average ability children in the same schools, and hence with the same formal educational experiences.

The sample

The population sampled was that of a north of England industrial city. There, music tuition was supplied almost free of charge in the schools. The city offered the services of a visiting music teacher to every school on the sole condition that at least three children in the school wanted to learn the same instrument. There was a token hire cost for the instrument, but singing and fine-art were part of the normal school curriculum. Hence, neither the availability of provision nor the parents' ability to pay for it were factors affecting a child's

access to tuition in these arts. In theory, every child had equal educational access to potential excellence.

Musically talented children proved to be relatively easy to find as there was a widespread sensitivity to music in the schools, as well as via the two children's orchestras run by the city. Fine art, though, appeared not only to be less valued, but teachers hesitated to distinguish between their pupils' ability. The first postal request for young fine-artists sent to every school by the city's Director of Education produced almost nothing. The author was obliged to obtain permission to enter schools and take hundreds of art works from dusty cupboards and classroom walls to a bank of experts for judgement. Then to return them. This distinct split in teacher attitudes between music and art is possibly a cultural feature of this part of the country where musical experience, particularly in brass bands, is very common, but the visual arts are less familiar. It may be different in other cultures.

Eventually, 12 children outstandingly talented in music and 12 children outstandingly talented in fine-art were selected. They were aged between 8 and 11, about equal numbers of boys and girls. Each of them was matched with two control children in the same school-class, of the same age, sex, social-economic level and general intelligence (as measured on the Ravens Matrices). The complete sample was thus made up of 72 children, 72 families, and 12 schools.

Procedure

The children were given tests of personality, intelligence, verbal fluency, and a personal interest questionnaire. Because the talented children had been chosen only by virtue of their performing ability, coordinated measures of their aesthetic perception were devised for this research. They were completed by every child in a 1:1 situation, and results were compared across the groups.

Three aspects of short-term memory in music and art provided the measurement criterion through newly devised tests. None required any academic achievement. Interest and practice as well as the novelty of the task would be expected to affect speed and accuracy of perception. The tests were as follows:

1. Resuscitation

Music: This involved the perception of several pitches, their relationship to each other and retention of the auditory image. Two sets of notes were played twice, during the second playing one note was changed. The children decided which one. Thirty sets varied from three to ten notes.

Art: This involved the perception and retention of one colour image so that it could be recognised among a group of similar colours. The child was shown one coloured card then it was removed and along with five similar colours was tumbled on to the table. The child then had to recognise the original.

2. Aesthetic discrimination

This was not intended to be a test of musical or artistic knowledge or experience, but of 'feel' in unfamiliar material.

Music: Four distinct styles of music were presented in their beginnings and endings. The children had to remember them and match them.

Art: 14 pairs of postcards showed a painting by the same artist of the same subject matter. One of each pair was presented. It was then taken away and two others presented, one being a distracter of the same subject, but by a different artist. The child had to point out the one most like in feeling to the first one they had seen.

3. Practical ability

Music: Practical ability or 'ear' was seen as the ability to hold an image of tonal sequences (a tune) to play on an instrument without the ability to read music. To avoid most of the practice effect the instrument was new to each child, and the tune very well known. 9 chime bars were presented to individuals in an incorrect order, and the child was instructed and timed in reassembling them correctly.

Art: Practical ability or 'eye' was seen as the ability to hold a visual image involving relationships between units and to draw from memory what was seen. A tray of unrelated objects was uncovered for one minute short time. Drawings were assessed for the number of objects remembered, the relative position of the objects and the quality of the drawing.

The parents were interviewed in their homes for over an hour with a pre-rated questionnaire. Homes were assessed for aesthetic content. Class teachers filled in a standardised questionnaire on the children's behaviour in school. All the schools were visited several times and the headteachers answered questions about the style of teaching in the school.

Results

There were four groups of children in the sample - musically talented children and their controls, and children talented in fine-art and their controls. Comparisons were made between all groups on all the information which had been collected (121 variables, using orthogonal comparisons). Highly significant outcomes ($p < 0.01$) are summarised in Table 1.

Table 1 Comparisons between children talented in either music or fine-art and controls

The musicians

Personal:

Better at judging and reproducing rhythm
More dominant
Preferred musical interests above all

Home:

More musical instruments
Support for extra lessons and orchestra playing
Music considered very important
Others in family played music
Higher socio-economic status - newspapers, books, aspirations for child
More discipline with children

The fine-artists

Personal:

Better at reproducing figures and their relationships

Less dominant

Had wider cultural interests

Home:

Strong incentive to practice art - child's paintings on display

Support for extra lessons

More concern for home decor with stronger use of colour and display

Others in family had displayed art work

Lower SES - parents' educations, newspapers, aims for child

More democratic upbringing

Both talented groups vs controls

Showed more ability in both areas

More confident

More independent interests

More generally artistic activities in the home

The music and art tests were found to be highly discriminating between the talented children and their controls. They reflected the sensory dominance present in their homes i.e. sound versus sight - the experts and the tests were in agreement. But there was some overlap on these aesthetic tests for the two sets of talented children, so that they were more alike in their scores than their two control groups. This was closer for musical memory than fine-art. Drawing ability, in particular, remained outstanding among the fine-artists. There could have been an aesthetic factor in operation.

Although the 12 schools in this sample did have some influence in helping children to practice these arts, whether a child continued to flourish in that field or not seemed to rest heavily on home influence and support, especially for musicians. It was the long parental questionnaire which highlighted the differences between the home backgrounds of the children. Although all the talented and the control children had had access to the same school influences, the talented were seen to live in homes which were particularly generous in parental encouragement, material provision for practice, and life-style.

There were also some differences in style of upbringing between the two talented groups. The musicians' parents appeared to be stricter than those of the fine artists. For example, parents of the young fine-artists were far more ready to discuss general educational matters with their children, and to be more open and honest with them. The fine-artists had the broadest cultural and intellectual interests of all the groups and took their aesthetic support from both home and school, whereas the musicians were more dependent on home support. The fine-artists even appeared to be emotionally more mature than the musicians. Perhaps it is in the nature of music that it calls for stricter discipline because of regular (often enforced) practice for successful progress.

There was little difference in general intelligence, verbal fluency, gender, or reported development between the groups of children, although the musicians were marginally more intelligent. The one outstanding personality characteristic of the talented was their self-

confidence. And there were no signs of personality disorder or emotional distress. The sample children, whose overall school achievement was exceptionally high, were mostly well adjusted and happy. The music group had slightly more dominant personalities than the fine-artists, a feature possibly connected with their having been selected by performance, which would involve playing in front of an audience. As many studies into exceptional talent have found, there was a predominance of first-born and only children in this sample.

Discussion

Although all the children in the sample had been exposed to the same educational provision, only a minority had notably profited from their opportunities. The measurably talented children came from families which had given them particular encouragement and extra financial support, even when the parents were not involved in music or fine-art. Parents sometimes said that they wanted their child to make use of the opportunities which, given the chance, they too would have enjoyed. But in addition, the children must have had some potential for aesthetic excellence. Both from retrospective and environmental studies, there seems to be sufficient evidence to show a family connection in musical ability at least which is in part of genetic origin (Shuter-Dyson and Gabriel, 1981; Thompson and Plomin, 1993).

Unfortunately, there were schools in the city which had failed to produce a single child of assessable talent in either area. Whereas whole classes in one school could be found playing guitars with delight, another a mile away could not produce a single recorder player or a painting of notable merit. In these aesthetically impoverished schools (usually in poorer districts) both parents and teachers tended to be dismissive of school time spent on 'frills'. One headteacher berated the author for her quest: "These parents have enough to do to provide their children with shoes, let alone musical instruments!". The walls of that primary school were rather bare of children's paintings and drawings too. It is difficult to believe that talent is definable by school catchment.

Although there were many 'experts' involved in this selection of talented children, it is possible that they worked to an (unconsciously) accepted aesthetic style associated with prevailing cultural and social mores, as McClelland (1961) described. Young children are likely to be taught and reflect this style in their work. Consequently, this sample could possibly have been selected in terms of conforming rather than the 'bohemian' traits which are essential to creativity. Hence, the rare child who attempted to assert an autonomy of style might not have been selected. During the several years in which the author served as a judge of a children's national competition poetry and art, the influences of individual schools on the children's products were often easily discernible.

It seems clear that future research in talent development should focus more on contexts, including the wider social implications of the arts in general. They are a vital means of understanding human experience and transmitting cultural values, and are fundamental to personal development. They sharpen both perceptual and analytical abilities, as well as nurturing the creativity and imagination needed for innovative thinking and problem solving. In most of the developed world, it is not so much provision which is in short supply, but concern for these areas of learning, especially for pupils who have the potential to go further than the others.

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