THE ROLE OF MUSIC APTITUDE IN EARLY CHILDHOOD MUSIC *

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Music aptitude is a measure of a child's innate potential to learn music. Music achievement is a measure of what a child has learned in music. For example, one is not born knowing how to compose music in a given style. That is learned. It is music achievement. On the other hand, one is born with more or less the potential or capacity to learn how to compose music in a given style. That is not learned. It is music aptitude. Most of us have become accustomed to hearing and to using words such as ability, talent, gifted, and musicianship, but they only confuse the issue by obscuring the important distinction between music aptitude and music achievement.

Although children who have a high level of music achievement must also have a high level of music aptitude, it is not necessarily true that children who have a low level of music achievement will also have a low level of music aptitude. There are many children with high music aptitude who never achieve to their potential because they have not had appropriate guidance or instruction in music.

Just as there is no child without some intelligence, so there is no child without some music aptitude. To that extent then, every child is musical. There is no child who cannot at least learn to listen to and perform music with some degree of success. More than two-thirds of children have average music aptitude, most of the remainder having above or below average music aptitude, and very few having exceptionally high or low music aptitude.

A child is born with a particular level of music aptitude. That level of music aptitude changes in accordance with the quality of the child's music environment until about age nine. Thus, neither nature nor nurture is solely responsible for a child's level of music aptitude. Music aptitude is a product of both innate potential and environmental influences. Regardless of the quality of a child's music environment after age nine, however, it will no longer have

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any effect on his or her level of music aptitude. A child's potential to achieve in music remains throughout life where it stabilizes at nine years old.

Although it is true that a child's genetic make-up is associated with music aptitude, it is important not to confuse the words innate and heredity. There is evidence that innate factors influence a child's level of music aptitude, but there is no evidence that heredity plays a role in determining those factors. Although physical characteristics may be inherited, a child's ancestry will not reliably predict that child's level of music aptitude after birth. Regardless of parent, grandparent, or great grandparents' level of music aptitude, a child may be born with high, average, or low music aptitude. Parents who have distinguished themselves in music may or may not have children with high music aptitude, and parents who have never shown any inclination of exceptional music achievement may or may not have children with high music aptitude.

It is the child's potential, then, not ancestry or irrelevant wishing, that must be focused on if we are to assist the child in the achievement of that potential. Just as a good medical practitioner deals with a patient's potential for maintaining good health and preventing disease, an able music educator deals with a student's potential for achieving in music, thus preventing a decline in music aptitude and motivation. Both doctors and teachers must pay close attention to individual differences and needs by adapting the treatment or instruction that a patient or child receives.

Before music aptitude stabilizes at age nine it is ever changing, moving up and down, as it develops in association with the child's environmental influences. Some neurologists believe that there is a possible relationship between the myelination of the great cerebral commissure and the more complex activation of the frontal lobes of the brain with the stabilization of music aptitude. The frontal lobes are associated largely with the ability to anticipate and to predict coming events, and the basis of music aptitude, as well as general intelligence, is how well a person can generalize. To be able to generalize enables one to make inferences and judgments that foretell and possibly influence future events.

From my observation and research with infants and young children, all indications are that a child will never have a higher level of music aptitude than at the moment of birth. Moments after children are born, the level of their music aptitude begins to decrease because sounds, including voices, in the immediate environment are not automatically conducive to reinforcing their senses of pitch and duration. Nature supplies the child with an abundance of genes and synapses in pregnancy and again immediately after birth. If the environment does not cause the child to make use of them at one or both those periods of early development, they are soon lost, never to be regained. It is believed that some or most of the unused genes and synapses that might have been used for developing sensitivity to music move to support another sense or medium, such as the visual or verbal, compensating for the lack of musical development.

Children, then, are in the developmental music aptitude stage from birth to approximately age nine and in the stabilized music aptitude stage from approximately age nine to the end of life. It is of the utmost importance that children receive the highest quality of guidance and instruction while they are in the developmental music aptitude stage, because not only will their immediate level of achievement increase, but because their overall level of music aptitude, their lifetime potential for music achievement, will be increased. Moreover, the younger children are, the more and the more quickly they may profit from that kind of music environment. The informal music guidance that children receive in the home and preschool and the formal music instruction that they receive in kindergarten will directly influence their levels of developmental music aptitude and indirectly their levels of stabilized music aptitude, and most likely their music achievement, far more than will the formal music instruction that they receive in elementary, middle, and high schools and in colleges and universities.

Children need to be raised in a rich music environment for their music aptitude to flourish in a positive manner. They should grow accustomed to hearing the same songs and chants consistently performed by adults in the same keyality and tonality and in the same meter and at the same tempo. That is not to say, however, that they should be exposed to only one tonality, keyality, meter, and

tempo to the exclusion of others. Quite the contrary. Children need to hear a variety of songs and chants with varied music content, because children learn most by attending to difference, not sameness, in music. The songs and chants should be short and with as much sequential movement as possible. Above all, they should be performed without words so that children are able to focus only on the music. Records designed specifically for children, with or without stories, are not recommended.

With appropriate music guidance and music instruction, every child's level of developmental music aptitude can be brought back toward its birth level, although it is rare, perhaps impossible, to bring it back to its birth level. Most children, for whatever the specific reason or reasons, experience levels of developmental music aptitude that continually fluctuate and, without appropriate guidance and instruction, generally decrease. The extent to which their developmental music aptitude increases or decreases will, of course, ultimately have a profound effect on their music achievement in and out of school.

Audiation is fundamental to music aptitude and, consequently, to music achievement. Quite simply, audiation takes place when one hears **and comprehends** music for which the actual sound is no longer physically present, as in recall and the listening process, and when the sound may never have been physically present, as in the creative process of composition and improvisation. Audiation should not to be confused with aural perception, inner hearing, imitation, memorization, imagery, or recognition. They are processes that require little, if any, comprehension of music itself. Moreover, whereas audiation is associated only with actual or "silent" sound, notational audiation is associated also with reading and writing music notation. Audiation is to music what thinking is to language.

As children phase through the speech babble stage, the speech sounds they make are not recognizable words to those around them. Similarly, as children phase through the music babble stage, either tonal, rhythm, or both, the music sounds they make are not recognizable tonal and rhythm patterns. Depending on

whether children are still in or have emerged from one or both music babble stages, they may or may not audiate what musical adults audiate.

When children are in a music babble stage, they audiate subjectively: the syntax of the tonal or rhythm patterns they are audiating is unique because it is not influenced by the adult culture. For example, the intervallic distances between their pitches are inconsistent among themselves and with culturally established standards, and the ongoing pitches are connected as in whining speech. With regard to rhythm, their tempo is inconsistent, their meter fluctuates, and the relative length of durations and silence is of little concern to them. When children have emerged from a music babble stage, however, they audiate objectively: the syntax of the tonal and rhythm patterns they are audiating is not unusual because it is influenced by the adult culture. That is, their tonality and meter are rather easily recognized by adults and their tempo necessarily becomes more uniform. Unfortunately, for a variety of reasons, some children with high music aptitude never grow out of music babble. They remain in music babble throughout their lives, so that as adults they cannot distinguish among tonalities or sing with acceptable intonation, nor can they distinguish among meters or perform with appropriate rhythm in a consistent tempo.

When a teacher or parent has knowledge of a child's music aptitude and uses that knowledge in conjunction with guidance and instruction in music, the child may be expected to emerge from both music babble stages at an early age, although some children will, of course, emerge from a music babble stage sooner than others because of their higher levels of developmental music aptitude. With appropriate guidance and instruction in music it may be expected that children who have higher tonal than rhythm developmental music aptitudes will grow out of tonal music babble sooner than rhythm music babble, and vice versa. Also, children with higher developmental music aptitudes will tend to retain their advantage over children with lower developmental music aptitudes when music babbling has ceased, and differences in levels of developmental music aptitude will continually become greater as the children grow older.

Music aptitude is a general term that includes many more than one music aptitude. There are at least two stabilized tonal aptitudes: melody and harmony; two stabilized rhythm aptitudes: tempo and meter; and three stabilized preference aptitudes: phrasing, balance, and style. Rarely is a child high or low in all or in the majority of those music aptitudes. Even considering the only two developmental music aptitudes, tonal and rhythm, that I have identified in my research, it is unusual for a child to be very high or low in both. Most children seem to be more preoccupied with how music is made than with how it is expressed. Perhaps the reason only two developmental music aptitudes have been discovered is that children are so little interested in musical preference.

To guide and to teach children music in an artistic and a professional manner, parents and teachers must be aware of **all** levels of **each** student's various music aptitudes. Obviously, the assessment of music aptitude must be objective. Many teachers and performers are unable to or fail to recognize the difference between music aptitude and music achievement when they supposedly are evaluating musical talent, musical ability, or musical giftedness. A valid standardized music aptitude test is a necessity for complete evaluation. A music aptitude test is concerned with the personal inferential process by which each child synthesizes what is being heard as music rather than with an analytical description and notational definitions of a finished musical product. The latter is, of course, representative of a music achievement test. Simply put, a music aptitude test "hears" what a teacher cannot "see."

A developmental music aptitude test is designed specifically to assess the music aptitudes of children from four to nine years of age. Examples are **Audie** for children four and five years old, the **Primary Measures of Music Audiation** (PMMA) for students in kindergarten through third grade, and the **Intermediate Measures of Music Audiation** (IMMA) for students in first through sixth grades. Because both are developmental music aptitude tests, the choice of using either PMMA or IMMA in a given grade depends on the desired complexity of the test content.

All the tests, except **Audie**, may be administered to children individually or in groups. **Audie**, however, must be administered to children individually. Because **Audie** is the only one of the developmental music aptitude tests that can be used with children as young as three and four years, and, thus, it should be of special interest to you, I will describe it briefly.

Audie consists of two games, a **Tonal** game and a **Rhythm** game, that encourage children to audiate. Each game requires between five and ten minutes to play. **Audie** is a character on a cassette recording that talks and sings short songs, including one special short song. The object of each game is for the child to say "yes" when Audie sings the special song and to say "no" when Audie sings another song. The correct answers for each of the 10 questions in each game are reinforced after the song for each question is heard. The **Tonal** game is recorded on one side of the cassette and the **Rhythm** game is recorded on the other. The directions for playing each game are recorded on both sides.

After a child becomes familiar and comfortable with the games, and at his or her pleasure, the parent or teacher marks the child's verbal answers on one of the game sheets. The child is never forced to play the game or to give answers if he or she chooses not to do so, and is encouraged to play the games often. All technical information, including estimates of reliability and validity, may be found in the test manual.

Music aptitude tests are used for several purposes, the least important one being to identify children with high overall music aptitude. Children benefit most, however, when tests are used to diagnose their musical strengths and weaknesses so that music informal guidance and formal instruction may be adapted to each child's individual musical needs. Just as what a child with high music aptitude learns provides the foundation for learning more, so the effects of the biological limitations of a child with low music aptitude can be lessened with guidance and instruction that is adapted to the child's specific musical needs.

Music aptitude test results will have little value if a society does not value what they represent. Music aptitude comes to highest fruition only in surroundings that are accepting and encouraging. As Albert Schweitzer has asked,

what would J. S. Bach have achieved had he been born in Geneva? Think for a moment about nineteenth-century society in Vienna and twentieth-century society in New York and Paris that gave rise to such exceptional groups of musicians and artists.

Only with appropriate guidance and instruction will children ever achieve in music in accordance with their potential to achieve. Attempting to push children beyond their potential to achieve will not, of course, raise their overall music aptitude. If, however, knowledge of their music aptitude helps to confidently protect them from misguided and uninformed parents and other adults with unrealistic expectations (those who inflict punishment or demand increased "practice time," for example, when children fail to perform at a given level), the children may very well achieve to their fullest potential simply because they are able to respond positively to the time they do spend with music. Regardless of children's varying levels of music aptitude, all are capable of learning music to some extent. Not only do they have the right to do so, but in time it will help them to become more knowledgeable parents themselves, more appreciative members of concert and recital audiences, and better informed participants in the musical culture of a society.

Perhaps the greatest value of a music aptitude test is not when scores confirm a parent or teacher's judgment about a child but when the scores disagree with the established beliefs of the parent or teacher. It is not unusual for a parent or teacher to be surprised by the high score a child earns on a music aptitude test when the parent or teacher has been convinced that the child "lacks musical talent." Similarly, a parent or teacher should certainly take notice of a child who is considered to have "high musical ability" but who nevertheless scores low on a music aptitude test.

Discovering the nature of the discrepancy can prove to be of enormous educational value in helping parents and teachers to better understand the nature of the child's music aptitude and to establish reasonable goals based on the child's individual needs. All become beneficiaries when the contradictions are resolved because success is easily shared. When a child considered to have "high

musical ability" scores low on a valid music aptitude test, the reason, one that is often the case, may be that as a result of the exceptionally good approaches taken by teachers and parents, the child's achievement appears to be outstanding simply because it is being compared to, among others, those with high music aptitude who, for whatever the reasons, have not been motivated to achieve in music. Meanwhile, recognizing and accepting the child's lower music aptitude, the parents and teachers will be better able to understand and respond to the child's possible frustration in the future. Although objective music aptitude scores are more valid than parent and teachers' subjective observations, neither is perfectly free of error. In most cases, however, parents and teachers can expect that the unique knowledge music aptitude test scores provide will help them to keep children informed of their educational progress with a far greater degree of intelligence and sensitivity.

In addition to assisting a parent and teacher in distinguishing between music aptitude and music achievement, a valid music aptitude test provides both parents and teachers with specific information about students' various music aptitudes. Many parents and teachers think in terms only of overall music aptitude, making it impossible to respond most effectively to the different music aptitudes **within** each student or to the specific music aptitude differences **among** students.

As I mentioned earlier, regardless of how good a test is, unfortunately it may be used to deny children opportunities or to stigmatize them as slow or disabled learners, incapable of meeting ordinary expectations. Regrettable as that is, there are more compelling reasons for using tests than for not using them. Music aptitude tests can be used to great benefit by teachers and parents in identifying objectively children's various music aptitudes, thus pointing the way to various approaches that might be taken to help children achieve to their potential in music. When used with judgment and wisdom and treated sensitivity and confidentiality, test results can serve as valuable objective aids to a parent or teacher's subjective opinions and observations.

One of the more common and unfortunate misunderstandings about music aptitude, one often evidenced in programs designed for "talented and gifted students," is based on the belief that all students with high overall music aptitude also have high intelligence. The fact is that a "gifted" student, one with high intelligence, is not necessarily a "talented" student, one with high overall music aptitude. Music aptitude on the one hand and intelligence, or any other human trait - - including normal and abnormal personalities, other artistic aptitudes, and academic achievement, especially mathematical ability - - on the other have almost nothing in common. Only by chance can one be predicted accurately by the other. At most, there is only a 5 to 10 percent relationship between music aptitude and intelligence test scores. A person with high music aptitude may be expected to have any level of intelligence, and a person with high intelligence may be expected to have any level of music aptitude.

In a test, competition should be of no concern. Tests should be used positively, not negatively, to inform teacher's and parents in diagnosing individual children's musical strengths and weaknesses. Thus, the results of a music aptitude test should never be used to exclude children from either informal guidance or formal instruction in music. On the contrary, whatever the results, scores should be used to guide parents and teachers in helping children to participate more fully in all aspects of music learning and enjoyment.

As a test author, I have often asked myself whether the tests I have created can do more harm than good. I know of the great value the tests can be, but I also know that they can be misused. On more than one occasion I have had teachers tell me that they are grateful for my tests. Nonetheless, I have to trust that the majority of parents and teachers will use the tests wisely and in a professional manner. Just as no one would responsibly suggest that medical practitioners not be allowed to use life-saving drugs because some patients misuse them, to suggest that music aptitude tests be disallowed because some teachers do not understand their use and value would be irresponsible.

In testing for music aptitude, the advantages far outweigh the limitations. When a valid music aptitude test is administered to children in preparation for

guiding and teaching, the music aptitudes of the children will no longer be **concealed**. Instead, the children's music aptitudes will be **revealed** to everyone sincerely concerned with informal guidance and formal instruction. That is as it should be.

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