

## **Kindling the Spark: Recognizing and Developing Musical Talent**

I am so pleased and grateful to the Singapore Ministry of Education and the National Institute of Education for inviting me to speak at the Tenth Asia-Pacific Conference on Giftedness. I have enjoyed meeting my many distinguished colleagues who globally represent the field of gifted education. There is nothing that I enjoy more than sharing ideas across the fields of music and gifted education that explore ways to recognize and develop potential musical talent in children.

Musical talent is, on one hand so easy to recognize. We have all experienced that “shivers up the spine” sensation when a musician moves you through performance – whether it is a youngster with energy to spare in performance or a dedicated young artist seasoned through years of training. We have all recognized that musical “spark”. Yet, the identification of musical talent does not seem to fit comfortably into a gifted and talented identification process. It does not neatly fit into a quantitative parameter of measurement such as an IQ or achievement test score. The discussion and debate of what constitutes musical talent has been ongoing for centuries; yet the fascination with the topic remains always fresh and alive as we unravel new research and findings about the musical mind.

This morning, we will explore different perspectives of musical talent that may broaden your understanding of musical capacities and abilities. In addition, we will provide some recommendations for musical talent identification – summarizing the basic criteria that characterize musical talent along with procedures that can unveil potential as well as demonstrated talent in a variety of school settings. We will also encapsulate the stages of musical development emphasizing the need for specialized instruction and guidance for the talented musician.

### **Perspectives of Musical Talent**

Before we venture into different perspectives of musical talent, it would be helpful to know a bit about your own perspective, as a starting point. I know you are here

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

as specialists in gifted education. I'd like to learn a bit more about your involvement with music and the arts with a simple show of hands in answer to the following questions:

- How many of you specialize in music education? Gifted/arts education?
- Now a show of hands of those who have gifted identification processes in place that include music and the arts.
- How many of you have specialized gifted program offerings in music in your schools?
- And of personal interest to me – Please raise your hand if you currently take music lessons? How many took music lessons as a child?

As you look around at the different show of hands, you get a glance at the scope of involvement in music, the arts and gifted/arts identification represented at this conference. Those of you with musical training may find yourself at odds with some of the perspectives presented concerning musical talent – or you may find yourself broadened in your conception of this talent.

The more specialized one becomes in a particular field, the more one's perspective becomes funneled into a narrowly defined focus. If we examine these individual expert perspectives and synthesize them with our own, we can expand our understanding of musical talent to a broader context.. Today we will view musical talent as music aptitude, musical intelligence, performance, creativity, and giftedness.

### **Talent as Music Aptitude**

Music aptitude is simply the capacity to sense and discriminate differences in sound. These basic perceptual capacities are present from birth and prior to training. Music aptitude reflects the concept of inherent musical talent. There is a healthy history of analysis and measurement of human perceptual capacities. Note the basics of music perception:

- the physical fact of sound

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

- the faculty of hearing
- the ability to imagine music without the actual sound stimulus
- the ability to remember previous musical experiences
- the ability to intellectually examine and judge musical shape and grade

This bulleted list might be an excerpt from a current music aptitude test; however, it actually is from *de Musica*, a medieval treatise by Augustine.

Music aptitude tests essentially measure perceptual discrimination of rhythm, pitch, loudness, and tonal color or timbre. In simple terms, the tests measure the ability to listen carefully. Early tests were developed by Carl Seashore in 1919, followed by tests from primary to advanced levels developed by Edwin Gordon. With studies extending over 30 years, both Seashore and Gordon found that music aptitude stabilizes at age 9 or 10. They emphasize the need to measure and encourage music aptitude development prior to this age.

According to Seashore: “After a comparatively early age, these capacities do not vary with intelligence, with training, or with increasing age. . . It makes the diagnosis of talent possible before training is begun and points to certain very definite principles of music education. . It is the meaning, and not the capacity, of these forms of impression which we train and which matures with age in proportion to the degree of intelligence and emotional drive. “

Carl Seashore *Psychology of Music* 1938

Gordon’s tests are based on the idea of “audiation” or the capacity to hear sounds through recall or creation without the sound physically present. Seashore described this internal functioning as the “mind’s ear.” Note that this also corresponds with Augustine’s “imagining music without the actual sound stimulus.”

I would like to share a very simple example of “audiation” with you today. First, I will sing a simple American nursery rhyme that some of you may know. (Sing Mary Had a Little Lamb). Now, please sing this tune with me. (audience sings). Now, I will sing the starting note of the song and ask you to internalize the sounds – sing “inside your

head”. I will then ask you if the last note is the same, higher, or lower than the starting note. (Audience internalizes song, discovering the last note is lower than the first note). This is a very simple way to experience tonal memory – remembering the song – and audiation, realizing the song internally.

Here is a list of some music aptitude tests that are available for use in gifted identification or general testing for music perceptual skills. I will discuss their use as part of the identification process later in this discussion.

### **Music Aptitude Tests**

Gordon:

Primary Measures of Music Audiation (PMMA) normal music aptitude age 5 – 8

**Intermediate Measures of Music Audiation (IMMA) high music aptitude age 6 – 9**

(recommended for G/T identification of young children)

Advanced Measures of Music Audiation (AMMA) age 10 and above

Music Aptitude Profile (MAP) comprehensive test that can be used as early as age 10.

Singapore Test: Musical Aptitude Screening Test – Ministry of Education

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Now, let’s experience a taste of what children will hear and do while taking a music aptitude test. Here is an example of several items found on Gordon’s Intermediate Measures of Music Audiation. Note that students circle faces that are the same or different. Feel free to try these yourself, putting S or D on your paper.

TAPE . 4 test examples - 2 rhythm, 2 tonal

Should you consider music aptitude testing in your identification process? Music aptitude testing offers an objective measure of listening discrimination that can highlight students who may have keen listening abilities. Testing may reveal students not normally identified through musical performance or classroom activities. For example, that quiet

student who may be playing third clarinet in the band with limited performance skills may have a high music aptitude that can be developed through listening and critiquing activities.

Music aptitude tests were initially designed for use by the general school population to provide a profile of student listening capabilities to develop suitable musical training in school. However, for years they were misused in the United States, with school administrators using results to judge the strength or weakness of music program achievement or limiting access to musical activities to only those students with high music aptitudes. They are minimally used in the United States today. However, it seems to make common sense to consider their use as an objective measure to be included as part of the musical talent identification process. Music aptitude is a core element of musical talent; however, music aptitude test results alone do not identify a musically talented student. I caution you strongly against using this quantitative score as the sole determination of musical talent. We must look further.

### **Talent as Musical Intelligence**

“Intelligence is musical when its background is a storehouse of musical knowledge, a dynamo of musical interest, an outlet in musical tasks, and a warmth of musical experiences and responses... The great musician, composer, conductor has the power of sustained thought, a great store of organized information, and the ability to elaborate and control their creative work at a high intellectual level.”

Carl Seashore, *Psychology of Music* 1938

Musical intelligence describes the process of cognitive-developmental learning through music, which distinguishes it from music aptitude, which is based primarily on natural musical capacities. The idea of musical intelligence again dates back to early Chinese and Greek theories of music and most decidedly is included in the texts of Carl Seashore. However, the renaissance of the term that generalized the idea to audiences beyond specialized music fields can be credited to Howard Gardner, whose Theory of

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

Multiple Intelligences broadened the concept of intelligence to include eight or nine separate domains of intelligence, with musical intelligence noted as a separate domain. Most of you are most likely very familiar with the MI Theory, which currently include the following intelligences:

Theory of Multiple Intelligences - Howard Gardner

- Logical mathematical
- Verbal
- Spatial
- Bodily-kinesthetic
- Interpersonal
- Intrapersonal
- Musical
- Natural
- Spiritual

MI music research done by Lyle Davidson and Larry Scripp emphasized learning situations that encouraged students to engage in problem-solving within the music domain to encourage cognitive understanding rather than rote learning of factual material. In music, students would be encouraged to use multiple approaches to solve these problems – from *production*, or making music through performance, improvisation or composition, to *perception* or discriminative listening and *reflection*, critically thinking about the process of musical work. As students gain skills and understanding of musical concepts, musical intelligence is nurtured through this learning process.

Jean Bamberger of MIT found that musically talented students naturally shift from one focus to another in solving musical tasks, similar to the dimensional shift described in MI teaching strategies. This process is similar to the problem-solving process found in gifted education in academic areas so it would be natural to emphasize these dimensional shifts within the musical domain in gifted programs.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

What is happening inside the mind of a student actively engaged in musical problem-solving? I often find myself trying to explain this internal process to my academic colleagues. You are all familiar with the term, metacognition, that describes the internal process of decision-making or “thinking about thinking” as you solve problems. The process of interpretive decision-making by a musician or other artist entwines cognitive thought with perceptive awareness. Interpretive and creative decisions mesh personal expression with this cognitive/perceptive functioning. I have developed a term which I believe simply reflects the artistic counterpart to metacognition. The term is *metaperception*. Metaperception describes the cognitive/perceptual functioning of a musician or any artist while making interpretive decisions. An artist perceives/thinks about artistic intent, filtering and manipulating sensory perceptions combined with cognitive and expressive decision-making in order to create artistic solutions.

Talent as musical intelligence emanates in the metaperceptive functioning of a student while engaged in musical tasks. Including problem-solving tasks in music within the musical talent identification process and gifted program will highlight and nurture students who show musical intelligence.

### **Talent as Musical Performance**

The recognition of musical talent through performance makes common sense to anyone who is a musician or a teacher of musicians. Music aptitude may measure musical potential, but musical talent is realized through performance. We hear it. A musician or music teacher believes you can determine talent if you just listen to the student play. Remember that shivers up the spine “spark” we spoke about earlier.

Let’s have a look at some young talented pianists for an example of talent as musical performance:

VIDEO

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

Do you agree that these students would stand out in an identification process from early grades on up as talented students in music? Do they play well because they naturally have talent which they display through performance? Are they well trained? Do they practice? Is this practice well disciplined and deliberate in solving problems? Does musical talent through performance constitute all of the above?

Through this video, we have experienced what I call the *dynamic of performance*. Musical performance is a phenomenological experience between the performer and the listener. The musician communicates a personal interpretation through the medium of music to the listener. As the listener hears and experiences the performance, the interpretive process is shared. The mutual esthetic experience of listener and performer creates the dynamic of performance.

Because of this dynamic, the assessment of performance is subjective, dependent on the adjudicator's individual perspective of talent through performance. You may have been captured by the flow of development from one student to the next or the focused engagement while playing. Judges may seek performances that show accuracy, or creativity, or intellectual meticulousness, or technical flamboyance. The assessment of performance through an audition setting is the most common form of talent identification. Gifted specialists developing identification procedures should realize this dynamic as they formulate assessment forms to provide a breadth of assessment that will include potential as well as demonstrated talent characteristics. I will discuss these possibilities later in our discussion.

Musical talent through performance decidedly evolves from training and development. The students in the video may have shown the basic underpinnings of talent early on in school music activities that highlight a flowing sense of rhythm in movement or expressive involvement in listening and singing. However, these musical performances were molded from excellent training, diligent practice, and careful performance preparation.

In the field of cognitive music psychology, John Sloboda's examination of musical ability, performance, and expertise offers a wealth of information that describes the process of developing expertise in music. He dismisses the "folk psychology of

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

talent” as an innate “gift”, arguing that talent develops from environmental influences and stimulation. Both his interview studies of talented teenagers and Sosniak’s earlier interview study of concert pianists support the idea of environmental influence versus genetic predetermination of talent. Few of the talented musicians in these studies showed early signs of exceptional talent, but they all shared parental encouragement and support as well as individualized instruction and lots of practice.

Musicians and teachers single out the quality of commitment as a distinguishing factor that determines which talented students will ultimately excel and achieve. Persistence in practice can overcome a student’s initial deficits. Marginally talented students, through diligent deliberate practice, can actually blossom into more successful musicians than the quick-starters who have little self-discipline.

Multiple studies by Ericsson, Krampe, and Tesch-Romer show the effectiveness of what they call “deliberate practice” in the acquisition of expert performance in arts, science, sports, and games. Deliberate practice is a highly structured activity with the explicit goal of improving some aspect of performance. This practice carefully monitors weaknesses and devises ways to improve. Elite performers maximize the amount and outcome of their practice sessions. They note that it takes 10 years of intensive preparation through deliberate practice to achieve expertise in a particular domain. Sloboda’s Leverhulme Project showed that the highest achieving group practiced 800 percent more than the lowest group by age 12. Individuals who practiced as much as two hours a day achieved high levels of skill and attained self-motivated practice by the time they reached adolescence.

According to leading psychologists in the study of expertise in performance, parents should encourage early signs of musical interest and activity, begin formal instruction at an early age, and encourage good practice habits from the start. Musical talent as performance is nurtured by parents, teachers, and environmental influences and its development works in tandem with personal commitment.

### **Talent as Creativity**

The musical creative process involves realizing sounds internally and communicating them to others in a unique way. We recognize musical creativity in the improviser such as the jazz musician and the composer who creates music for others to perform. A wider spectrum of musical creativity includes the creative listener and critic and the creative interpreter in performance.

Improvisation: Clang, Crash, Bonk. You discover your three year old has found the drawer with the pan lids and the wooden spoon. The first signs of musical play by a young child may reveal behavior that shows focused attention and experimentation of sounds indicative of creativity through improvisation. And it is decidedly a lot of fun!

So often an astute teacher can observe the natural musical expression and movement evolving from this early childhood play. The early Pillsbury Foundation School studies and those of Cohen in the 1980s observed young five year olds in play with different percussion instruments provided to them with no formal instruction. Students showed aural, kinesthetic, and tactile curiosity and created small “musical gestures” no longer than a few notes. Students would often try to match their peers’ musical statements.

Peter Webster of Northwestern University has developed the *Measure of Creative Thinking in Music* to assess musical creativity in children aged 6 to 10. One section of this performance-based test enjoys a musical question and answer dialogue with temple bells. Please watch this young lady musically talking to Dr. Webster. Is she musically creative?

### VIDEO

Composition: Compositional talent relies on some way to maintain musical creations. There have been a number of studies showing how students can figurally sketch their ideas on paper prior to formal notational training. There have been numerous studies

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

examining the problem-solving process of putting musical thoughts onto paper by these young composers.

The revolution of software that provides ways to notate and play back melodies created on MIDI keyboards has opened many avenues to promoting composition in music classes at earlier ages. Musical talent through composition can be recognized as early as a student can scrawl ideas from improvisation onto paper or zap it onto a computer screen. In my development of *Explorations In Music*, a theory and composition curriculum, many teachers asked why I chose to include creative composition from the very first book, when children were first learning to write note heads on lines and spaces. The children never asked. They simply did it.

Performance: The performer has the definitive task of interpreting how the composer would want the music to sound, realizing stylistic boundaries, and expressing a personal interpretation realizing the integrity of the music in the performance. The performer brings the composer's creation to life – with each performance stamped with a personality that can create the dynamic described earlier. This performance may be Beethoven's Emperor Concerto - or the Happy Hippo at a student recital. In Copland's words:

The performer is simply the intermediary that brings the composer's work to life – a kind of midwife to the composition. He partakes of the same dedication of purpose, the same sense of self-discovery through each performance ... Thus we see that interpretation, even though it may rightfully be thought of as an auxiliary art, does share elements of creativity with the mind that forms the work of art.

For a clear-cut example of differences in interpretation, you will hear short clips of three versions of Bach's c minor prelude by three different musicians. I use this example in my workshops on adjudication. As you listen, imagine yourself as the judge at a competition – who would “win”?

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

CD of three performance clips

Listener & Critic: The creative listener is a somewhat hidden talent. Remember that young clarinetist that had a keen ear measured on the music aptitude test, but does not display these talents through performance. This talent will surface when opportunities are provided that either aurally analyze music or provide critique opportunities of peer performances. Expanding the breadth of musical talent to include critiquing skills in translating what one hears into words will unveil future critics and musicologists.

I personally experienced the discovery of this talent in my private piano studio. I had taught a bright teenager for three years. He was marginally talented in piano because of technical limitations. He was very shy in our performance classes. The studio focused on the works of Chopin during one year which included comparative listening to professional recordings of works they were learning. Each student notated things they noticed in the recordings on copies of their music. Most had general comments here and there. This student's music had notations in the margins, color-coded ideas concerning fine details of touch and dynamic detail that literally blew me away - creative listening talent for sure.

There is minimal research in this area, with hesitancy on the part of researchers to embrace comfortably the concept of creative analysis and listening. Studies by Feinberg and Pfiel used listening tasks that included problem-solving emphasizing awareness of fluency and flexibility to gauge creative listening along with tasks that required listening for structural, textural, and aesthetic musical elements.

In gauging listening and critiquing creativity, one must be aware of students who are imaginative writers and can impress you with cleverly written ideas that define writing talent. However, an astute music teacher should be able to identify a student who presents novel written ideas that show understanding of the intricacies or expressive ideas of the music.

As gifted specialists, we revere the importance of creativity in the recognition of talent, with this element often the deciding factor in screening, as we realize giftedness in

line with Renzulli's three-ring model of above average aptitude, commitment, and creativity.

The Torrance Tests of Creativity are a mainstay for general gifted identification across globe. However, these general creativity tests should not be used as a measurement of musical or artistic talent. Activities that will highlight students engaged in creative tasks in improvisation, composition, performance, and listening will provide a broad perspective of musical creativity.

### **Talent as Giftedness**

When we hear the word “gifted” in connection with music, the musical prodigy immediately comes to mind. The arguments of recognizing talent through performance, creative endeavors or music aptitude tests seems incidental in comparison to the possibilities and accomplishments of the musical prodigy. These young wunderkinds show incredible levels of talent, often exhibiting musical capabilities equal to those of a highly trained adult by the age of 10. Prodigies occur most often in the field of music, with their prodigious abilities appearing at a younger age than other prodigies – some as early as age 3 or 4.

Biographical information indicates an exceptional ear from a young age. Cellist, Jacqueline de Pré could sing in tune before she could talk. Prodigies learn at a very rapid pace, usually astounding their teachers. Violinist, Paganini would upset his teachers by solving musical problems in unorthodox ways befitting his exceptional technique. He composed his first sonata at age 8, quickly writing music too difficult for him to play so he could devise ways to conquer his self-imposed technical hurdles.

In the nature-nurture debate, heredity plays a speculative role at best in determining prodigious offspring. True, there were generations of talented musicians in the Bach family – but only one Johann Sebastian. Studies show that parents often play a tremendously supportive role in the development of their prodigious children, often moving the family so the child can study with a prestigious master teacher.

The development of a musical prodigy comes at the family quickly. These youngsters may sing in tune by age 2, with formal lessons typically beginning at ages five to seven. The role of the teacher in this development is of utmost importance. Bloom and his colleagues in *Developing Talent in Young People* describe a string of teachers, with the initial teacher offering a positive learning environment that inspires the joy of music. The student then progresses to a teacher who can advance technical skills followed by a master teacher to develop artistry. The high incidence of parents making major personal sacrifices to seek out the best possible teacher shows the importance of proper musical training.

Bamberger's studies of gifted musicians describes a stage of "mid-life crisis" that occurs in adolescence. Young prodigies have the ability to communicate through music intuitively – never really thinking about it, but just doing it. When they reach adolescence, they begin to analyze and question their abilities. Janos Starker describes his own experience during this time of his development – "What happens to the bird who sings and doesn't know how it sings? That's what happens to child prodigies. They just wake up and ask themselves dangerous questions about how they do it – and have no answers." Some prodigies have problems working through this adjustment period and teachers and parents need to be aware of the specific needs to allow time for reflection and ease in expectations at this period of development.

### **Unusual Giftedness**

The existence of giftedness in the musical savant led Howard Gardner to the decision that musical intelligence is, indeed, a unique intelligence. The musical savant is an individual of low cognitive intelligence whose musical accomplishments resemble those of musical prodigies. Savants usually display their abilities at an early age by replicating tunes after a single hearing, singing in tune, and having an exceptional tonal memory with most having perfect pitch. They are typically blind, mentally handicapped, and show autistic characteristics. They are all pianists.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

Blind Tom was a slave born in 1849 whose owner exhibited his capabilities to wide acclaim. He could play two tunes simultaneously on the piano while singing a third. Put to the test, an opera composer came on stage and played his newest composition. Tom listened attentively, then played the piece perfectly including the same performance style as the composer.

Miller's four-year study describes the savant ability as a sense of "musical syntax" where ease of memory depends on structural aspects of music. The piano is an excellent choice because it places the music within a spatial organization of keys similar to a musical alphabet.

Some fascinating studies have developed in connection with a unique chromosomal disorder called Williams syndrome, which is a form of mild to moderate retardation characterized by a pixie-like facial appearance, an assortment of physical motor difficulties, and heart problems. People with Williams syndrome have an exceptional tonal memory, and an unusual sensitivity to sound or *hyperacusis*. They have a high degree of rhythmic engagement or *rhythmicity*, offering extensive creative answers rather than mimicked repetition in echo-clapping activities.

The brain of Williams syndrome individuals is smaller than normal. However, the part of the brain that is enlarged in musicians with perfect pitch – the *planum temporale* – actually makes up a higher proportion of the brain of Williams syndrome individuals. Ongoing neurological studies are revealing fascinating connections of these unusually gifted individuals and the mystery of the musical mind.

### **Music and the Brain**

There is always a gnawing need to justify musical learning in education in extra-musical terms. Learning music will boost math scores or you will learn languages faster, have higher self-esteem or be less drawn to drugs and crime. There are dozens of studies that show a correlation between students taking arts and music courses and high scores on the SAT, our high school level achievement test.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

The trend in the 90s was centered on “how music can make you smarter” which was embraced by many in the gifted community. Do I dare ask how many of you have “Mozart Makes You Smarter” CDs buried in a file cabinet in your office?

I thought you might enjoy sharing a taste of the University of California at Irvine experiment that began the rage of the Mozart Effect in the 90s – or was this purely an American phenomena? Frances Rauscher, Gordon Shaw and a number of associates had a group of college students listen to the opening 10 minutes of Mozart’s Sonata for 2 pianos (K 488) prior to the administration of a test of spatial temporal tasks. They found that the students who listened to Mozart scored significantly higher than students who spent 10 minutes listening to self-hypnosis instructions or silence. I thought it might be fun to hear the actual music used and see an example from the spatial-temporal test taken after you listen to Mozart. First, sit back, close your eyes, and enjoy a bit of Mozart.

CD - Mozart sonata for two pianos – opening section

Now I will show you one of the tasks on the *Stanford –Binet Intelligence Scale* used in the test at Irvine. It is paper folding and cutting. The dotted lines and arrows represent where and in what direction the paper would be folded. Solid lines indicate where the paper would be cut. Which letter indicates what the paper would look like if unfolded? A show of hands - A, B, C, D, E? Slide shows correct answer.

The media blitz following this experiment greatly distorted research findings, with the general impression that listening to Mozart will make you smarter. Rauscher made no such claim, with the 15 minute effect limited to spatial-temporal tasks involving mental imagery. Even so, the governor of Georgia provided a CD of Mozart to every infant born in the state. After hundreds of follow up studies and an expanse of time, the Mozart effect has withered into an interesting idea that, fortunately, did have parents bring Classical music into the home for children to hear.

There are a number of exciting neurological studies unfolding concerning the musical brain, stemming from Schlaug’s resonance imaging comparing the brains of musicians and non-musicians. Musicians not only had a right hemisphere dominance, but

they had a more pronounced left hemisphere dominance than the control group. The *planum temporale* of musicians with absolute pitch was enlarged on the left side, especially in those who began study before the age of seven. Schlaug described the child's brain as "plastic" and recommended musical training at preschool age with active participation providing more brain enhancement than passive listening. Again, we see the importance of musical training from an early age, which would especially impact the musical brain of the child who shows potential talent.

We have provided a guided tour of perspectives that most likely has filled the capacity of your brain at this point – especially with that extra bit of Mozart zapping those dendrites! I'd like you to simply stand and stretch for a few minutes before we venture into the specifics of musical talent identification.

### **Musical Talent Identification**

Now that we have examined musical talent from different perspectives to offer a broader scope of understanding, we can discuss effective procedures for its identification and the specific criteria that encompass the breadth of musical talent.

### **Challenges in the United States**

The identification of gifted and talented children was federally mandated in the United States as early as 1972. This mandate included visual and performing arts ability in its description of talent. However, over the decades since this ruling, GT identification is based primarily on academic achievement and rarely includes music or the arts. My 1995 research of identification documents sent to the National Research Center on the Gifted and Talent from 1200 locations found only 14 locations that included identification information concerning music and the arts. This reflects an earlier study showing that ten north-central states with a population each of over 50,000 had no provision for musical talent within their gifted programs.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

On the Music Education side, there is a general philosophy of not encouraging gifted/talented identification for fear of limiting enrollment in music programs to only talented students. There is a wide discrepancy in school program offerings. School systems with strong music programs have a built-in differentiation of honors bands, choirs, and specialized instruction opportunities. However, there are a growing number of states that have minimal if any music program offerings at all. The National Coalition for Music Education reported in 1989 that 55 percent of US schools are either unserved by music education or served on a part-time basis. The trend has gotten progressively worse over the last decade in maintaining music programs in our schools.

One positive development in US music education is the establishment of the *National Standards for Arts Education* that provide a measurement of quality and accountability in arts curricula across the country. The standards describe “what a student should know and be able to do” in the arts, with basic achievement standards for content in dance, theater, art, and music at each of 12 grade levels. Achievement standards for high school or grades 9 – 12 include two levels of standards – proficient and advanced. This provides a point of reference for differentiation of curricula at the upper grade levels in school systems with an aggressive music program.

### **Initial identification – Nominations**

The first step in musical talent identification includes nominations from multiple sources. With music, you must extend beyond school to include all of the music activities students may have in their home and community. The private teacher, church leaders, and community leaders are added to family nominations. Often the biographical information provided by the parent unveils informal instruction by a relative or interest in different musical genre not experienced in school music programs. There are many students listening and learning guitar or drums through rock or pop CDs in their homes, unknown to music teachers in schools.

Identification can be made at different grade levels, seeking talents that emerge through interest and instruction in school. Identification at an early age encourages

training and falls in line with seeking assessment of talent prior to age 9 or 10 when aptitude stabilizes. The recognition of musical talent as a separate component of G/T rather than part of an academic profile is essential in serving the needs of musically talented students.

The incidence of studies showing musical talent within the population of students with autism or those with Aspergers syndrome and Williams syndrome offers ample opportunity for expanded identification and specialized programming for these students.

### **Rating Scales & Observation**

Observational rating scales are used in the United States for talent identification. In my examination of rating scales at the National Research Center for the Gifted and Talented, analysis revealed that most school systems devised their own forms and rating scales for identification with few including adequate assessment tools in the arts. Criteria on forms were general (interest, commitment, confidence) rather than music-specific (perceptual discrimination factors of music aptitude).

Effective rating scales should contain valid criteria specific to music and avoid general arts rating scales. The rating scale should include characteristics of potential as well as demonstrated talent and include the broadened perspective of talent that includes performance, improvisatory styles, composition, critiquing and interpretive listening. They should also offer space for qualitative comments gleaned from classroom or music teachers working with the student.

### The Indicators of Potential Talent in Music

The *Indicators of Potential Talent in Music* rating scale offers 10 music-specific criteria developed from my research. The research first gathered information from a survey of specialists in performing arts schools, gifted/arts programs, and music educators concerning talent criteria and procedures. This was followed by interviews with

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

experts across the fields of music psychology, gifted/arts education, performance, and music education. Criteria and procedures for musical talent were compiled into *Framework for Musical Talent Identification* found in the appendix of *Kindling the Spark* as well as a full description in chapter 10. I will encapsulate these talent criteria using the rating scale as a reference point.

*Aptitude and Ability*

1. Can remember and repeat melodies.
2. Keeps a steady pulse and responds to subtle changes in rhythm and tempo of music.
3. Can hear small differences in melodies, rhythms and sounds.
4. Can differentiate individual sounds in context: identifies patterns, melodies, instruments in a musical composition or specific environmental sounds.
5. Performs with accuracy and ease; learns quickly.

The first four characteristics are the core properties of music aptitude – (1) tonal memory, (2) rhythmic pulse, and the (3) perceptual awareness and discrimination of sound. Simple echo-clapping and chanting can reveal these capabilities in a music classroom. Teachers may notice students who pick out tunes on an available instrument or those who move fluidly to rhythm in response to music. Listening activities that define tasks for differences or identification of musical elements will highlight students who are keen listeners. Academic classroom teachers will note students who are bothered by background music (most likely composed by Mozart) played while they are supposed to be reading in class. These students are actually intently listening to this music.

The fifth characteristic, based on performance in a classroom setting, emphasizes accuracy and ease rather than poise or confidence, which are developmental factors. The young student who quickly learns an accompaniment on Orff instruments in the early grades or who naturally excels in learning music in band, orchestra, or choir stands out to

the teacher. This also can include the student who spontaneously performs an improvisation or the youngster who sings made up songs in the backseat of the car – do I spy a few smiles of parents in the audience – aha, that’s my child!

*Creative Interpretation:*

6. Enjoys experimenting with sounds: making up songs and manipulating melodies and rhythms.
7. Is aware of slight changes in mood, loudness or softness, and sounds of different instruments in music.
8. Performs and reacts to music with personal expression: shows intensity and involvement with the music.

I have used the term “creative interpretation” in place of creativity for the next three characteristics, which describe the improviser or composer, the creative listener, and the creative interpreter in performance. When I used the general term, “creativity” in my research survey, responses were confined to improvisation or composition, which are not prevalent activities in music classes in the United States. The use of the term “creative interpretation” provided a comfortable term that describes a personally-defined performance which is the goal of performance-oriented classes.

Every expert in the interviews I conducted zeroed in on creative interpretation and metaperception in musical tasks as the defining factor in identifying a musically talented student. It was quite fascinating. There would be a slight pause of reflection, then an exciting anecdote that described a student creatively engaged in music in some way – the “spark” they intuitively understood as talent.

*Commitment*

9. Shows perseverance in musical activities: works with focused concentration, energy, and internal motivation.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

10. Strives to refine musical ideas: set high goals, constructively critiques musical work of others and self.

The last two characteristics describe general behaviors that reflect those found on academic GT observation scales and checklists. The idea of perseverance, focused concentration and internal motivation were descriptors used often by interviewees and are preferable to “sustained interest” which is often found on GT generalized forms. A talented music student seeks refinement, critique, and achievement of high goals. These are students who enjoy practicing and moving ahead in lessons. Fortunately, music students have no ceiling for rapid paced learning when provided individualized training.

The rating scale provides the back of the form for a full page of comments that qualitatively describe experiences working with the student. This rating scale has been used for the past 15 years as part of the MusicLink program, which links promising students in need with professional music teachers across the United States. The MusicLink Foundation is currently collecting data for updated research on the impact of long-term musical training on disadvantaged or at-risk youth. Of interest, in looking at the average of our data on these forms, thus far, we find the following behaviors prevalent in these students. These preliminary findings emphasize the importance of commitment in the study of music which truly impacts the lives of our MusicLink students in their every day lives.

Behavioral Characteristics – MusicLink Students

Highest	9. Perseverance & Motivation	3.67
Next highest	8. Performs with personal expression	3.55
Lowest	6. Enjoys experimenting with sounds	3.17
Next lowest	4. Differentiating sounds in context	3.18

Observation

Effective identification procedures include observation of students in the process of music-making in a music or general classroom. Activities that divide the class into small groups engaged in creative activities will provide more opportunity for focused attention of individual behaviors. Initial observation is most comfortably done by the music teacher who has experience in guiding students through musical activities. Some training of specific observation techniques may be helpful for teachers at this stage of identification. Once initial identification of students is complete, the next level of screening will include a more individualized performance assessment.

### **Achievement**

When determining achievement in music through grades, curricula should include the opportunity to assess student behavior and performance in the process of developing musical work. This is the normal process in a performance-oriented classroom. Activities that reach beyond performance to include creative problem-solving will unveil students working across dimensions indicative of musical intelligence. Listening and critique experiences will identify listening talents.

I am currently developing a specialized curriculum that highlights potential talent in the classroom working through problem-solving and differentiated activities that assist in recognizing musically talented students in any classroom. I plan to expand the curriculum to include all of the arts within this next year. *The Artistic Ways of Knowing* curriculum emphasizes learning through perceptual awareness and discrimination, metaperception, creative interpretation, the dynamic of performance, and critiquing. This example shows a lesson that develops a Rhythm Rondo that will highlight students who can creatively work with rhythms. The activity presents a rhythm activity that grows in complexity, providing avenues for talented students to add creative rhythm improvisation while the entire class learns a substantive activity to build a stronger rhythmic sense.

SLIDE OF ACTIVITY

## **Testing**

We discussed the specifics of music aptitude testing earlier, indicating that these tests are helpful to identify student listening discrimination. They do NOT measure musical achievement. Identification should take into account the use of a test that will have a high enough ceiling to measure high music aptitude at specific ages or grade levels. Identification should also NEVER equate the score on a music aptitude test as the sole determinant of musical talent or entry into a gifted program for musically talented students.

Academic achievement tests, IQ tests and creativity tests that are used widely for GT identification are not applicable to any sort of measurement of musical talent.

## **Performance Assessment**

The identification of musical talent will, understandably, include the assessment of performance. Procedures identifying students who have formally begun lessons on instruments in school can include individualized assessment in an audition-like setting. We have discussed the difficulties of performance assessment earlier, with recommendations to seek out an assessment form that can include space for comments concerning student potential as well as a way to quantitatively rate the performance for comparison.

The performance literature recommends using a balanced approach for assessment that includes specific categories of performance as well as an overall qualitative critique. I must confess that I have been behind the judging table of probably hundreds of competitions and festivals and have seen hundreds of different types of judging forms.

My colleagues enjoy writing ample comments that are helpful for students but are sometimes uncomfortable providing numeric grades. However, an assessment form that provides a combination of specific performance characteristics to check or circle, several key areas to grade numerically, and lots of room for personal comments is comfortable

for the adjudicators to use and provides more information for those screening students for a gifted program. An example of a balanced performance assessment form for use in identification is seen here. There are key areas for quantified grading as well as a likert scale at the bottom to indicate the judge's opinion on entry into a gifted program.

Slide - Performance Assessment Form

**Guiding Talented Students through  
Stages of Musical Development**

Now that we have provided you with a detailed look at the criteria and procedures for identifying musical talent, it is helpful to know the best way to provide support for these musical students to grow at each stage of development. Where do we begin?

Early Musical Development

Children listen before they are born. Prenatal studies abound that can measure the movements and startle reflexes of these yet-to-be-born listeners. Infants suck excitedly when they hear lullabies that were sung to them by their mother before birth.

Discrimination of specific musical sounds is apparent by the age of five months with rhythm pattern discrimination not too far behind. Stimulation through vocal play, according to infant researcher Papousek becomes a "favorite inexhaustible toy available even in the parent's absence." Of interest, the "baby talk" and soothing sounds we instinctively make to infants have the same pitch contours no matter what language is spoken. Rising contours capture attention, falling contours soothe the baby, and bell-shaped contours relays an expression of approval.

As infants grow into toddlers, their ability to discriminate different patterns and melodic contours develops quickly. By six months they are bobbing in response to music. By 18 months they are spontaneously singing and can create sound on simple percussion instruments. The rise of early childhood music programs in the United States has grown dramatically over the past decade. Of interest, the Mozart effect blitz occurred in 1994

just prior to this growth. There are music classes starting at birth and continuing until preschool that encourage parents to sing, move, and express themselves through song and movement with their child.

### Phases of Musical Learning

There are a number of different sources that describe the developmental stages of musical learning. I find the simplest to use for our purposes is offered by Bloom in *Developing Talent in Young People*.

Beginning Phase:     Play and Romance – encouragement of interest, involvement, stimulation, freedom to explore, immediate rewards.

Students will be experiencing music classes in school during this stage and talented students may be encouraged to take private lessons on piano or a string instrument. The first teacher and the family play primary roles in nurturing the environment with an emphasis on the enjoyment of music.

School music classes that emphasize creative music-making through improvisation and musical problem-solving as well as defined listening activities will nurture creative musical growth as well as music aptitude. Identification procedures are recommended at this stage of development.

Middle Phase:         Precision and Discipline – Skill development, goals of technique and accuracy

The intermediate music student seeks to hear more, see more, and to perform with more personal involvement in attaining self-regulated goals. In school, students engage in band or choral festivals that are critiqued. In private lessons, talented students will seek out judged competitions or festivals as well as performance experiences beyond the studio to provide more opportunity to fine-tune their skills.

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

Advanced Phase: Individuality and Insight – integrates and generalizes concepts to individualize interpretations and analytically understand musical structure.

The advanced music student has acquired an identity as a musician and most likely spends a majority of his or her time in musical activities or practice. It is not unusual for a talented student to be engaged in practice for over 20 hours a week, equivalent to a part time job, and that does not include musical rehearsals and concerts in school. This is the stage where flexibility in scheduling and out-of-school options are a necessity to provide challenging curricula to match capabilities of these students. They may be performing at a professional level by the teen years, which may mean specialized schooling or early entry to a conservatory.

The journey of development for a musically talented student requires guidance from teachers and counselors to provide the breadth and pacing of curriculum suitable to the student. I have found that many talented students, once entering high school, are expected to make a career decision in regard to music to determine their curricular options. Do they plan to be a concert pianist or orchestral musician? Do we ask the same of students seeking advanced math and science courses? Do you plan on being a nuclear physicist or brain surgeon? Musically talented students should be provided with the same avenues for challenge and advancement as academically talented students regardless of future career choices.

Several weeks ago, the MusicLink Foundation enjoyed a recital of students who had taken private lessons through the MusicLink program for 8 to 10 years. I had seen these students flourish in school music programs as well as private study. They have grown into fine musicians – some entering college as music majors while others are choosing law or architecture or nursing. No matter what their career choice, they are all fine musicians and music will play a major role in their adult lives. We share a similar role in being the key individual who can guide musically talented students into the right course of study and enrichment throughout their school years. I sincerely hope that you

Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D

found ideas and information from our discussion today that will intrigue you to seek new avenues of identification and programming for these talented students. What better way to end our discussion than a finale by one of our 15 year-old MusicLink students. Our MusicLink Foundation slogan – We create musicians, one student at a time.

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Joanne Haroutounian, Ph D

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Kindling the Spark: Recognizing and Developing Musical Talent  
Joanne Haroutounian, Ph D