CREATAHOLIC

ENVIRONMENT AS A SIGNIFICANT FACTOR IN THE DEVELOPMENT OF MUSICAL TALENT AND APPRECIATION

~ Environment as a significant factor in the development of musical talent and appreciation ~

MUSI 4320: Honours Seminar (Fall Term 2004)
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"Even a Mozart had the possibility of becoming tone deaf depending upon the way he was raised."
~ Shinichi Suzuki (1981)

Davidson, Howe and Sloboda (1994) posed the question, "Is Everyone Musical?" in a target paper produced for a series of peer commentaries in *The Psychologist*. Two factions seem to exist with regards to this question: those who believe talent is inherited; those who believe talent is created. The following examples are evidence that talent is created.

Messenger (1958), an ethnomusicologist studied the Anang Ibibo Tribe in Nigeria during 1958 found it "difficult to make enquiries about tone-deafness and its assumed effects because the Anang language possesses no comparable concept…" It was obvious to Messenger that the tribe believed everyone to be capable of attaining musical proficiency. The people of the Anang culture are surrounded by music and performance from birth, and consequently the learning "takes place 'naturally' in all individuals as a result of exposure to the musical products of the culture" (Davidson, et al. 1997).

An orphanage in eighteenth century Venice, the famous la Pietà, is a fine example of environmental effects on children. Sloboda et al. explained that the children at this orphanage were given "ample opportunities for training" therefore "creating [an environment in] which a substantial proportion of the orphans became highly accomplished musicians" (1994: 350). The musical environment at this orphanage had significant effects on the development of competent and successful musicians.

Helmut Moog concluded his study on the development of musical experience by saying that "the process of development … cannot be described independently of the child's environment" (1976: 43). This paper will explore importance of environment as a significant factor in the development of musical talent and appreciation will be explored. "Musical development" for the purpose of this paper is defined as the ability to play an instrument and the capacity for appreciation of music from different genres, periods and cultures with the aptitude to make educated decisions concerning likes and dislikes. As music educators, we must recognize the importance of environment in shaping each child's musical development.

The effects of environment on musical development in children will be approached from two directions: education and psychology. Within education, the observations of Shinichi Suzuki, Maria Montessori, and John Dewey will be explored.

Shinichi Suzuki believed that all children have musical talent that must be nurtured and equates his belief to a small sprout that requires nurturing and cultivation for it to blossom into a beautiful tree (Suzuki, 1981: 8). The notion that humans are born with innate heredities was dismissed on the basis that all children unconsciously learn their "mother-tongue" language, to such a degree that by five or six years old it has been internalized. This idea of language cognition and development was termed the "Mother Tongue Theory" (Suzuki, 1981). The method by which young children learn their mother language was then transferred to the study of music, creating the "Suzuki Method". Suzuki believed that children should be surrounded with music much the same as they are surrounded by language. "The consideration that all healthy children speak their own language indicates that every child can be educated. Therefore, the ability to become well educated and a great person is shown to exist in anyone who has developed an ability in language."(Suzuki, 1981: 44). Mothers who speak and sing to their babies on a regular basis encourage enhanced linguistic development, and there is strong evidence to support the comparison of the results from language stimulation studies to the development of music abilities and the belief that "musical development is subject to broadly similar influences" (Sloboda et al, 1994: 350). Omrod (2003: 49) states that "children can learn a language only if the people around them converse in that language" and therefore it is of utmost importance to the development of musical language that it be spoken often while the child grows.

Two of Suzuki's conditions for developing musical ability include beginning as early as possible and creating the best possible environment (Suzuki, 1981: 23). Following these conditions, children can be introduced to musical concepts from the moment they are born. By introducing these concepts through their environment, the children will gain an appreciation for sounds. This appreciation can then be enhanced and augmented as the child develops.

Suzuki's belief that talent is created is supported by the findings of Davidson et al (1997) that "explaining musical achievement only or mainly in terms of 'gifts' and 'talents' denies the many varied and potentially vital environmental influences which affect development" and therefore place limiting factors on children who do not exhibit musical awareness at the onset of music lessons.

Maria Montessori was also a firm supporter of creating environments that were conducive to learning within the child's developmental stages. Montessori's "Prepared Environment" includes the belief that the child should be in control of their own learning and should be encouraged to form an integral relationship with their environment (McDonald & Gene, 1989: 31-2). Montessori believed that creativity is developed when a child is given the freedom to explore a sensory rich environment. Children are intrinsically driven to learn and therefore it is important for parents to provide an environment that contains a diverse range of musical materials including such items as pots and pans for sound experimentation. It is important for a child's environment to include ample opportunities for exploration of patterns and modes of response to music both individually and within group settings. This is achieved through singing moving, playing instruments, discussing, and describing, to aid in the development of attitudes and emotional responses to music (McDonald and Simons, 1989: 34). In agreement with Suzuki, Montessori believed that every child has the seed of creativity within, and the potential for that seed to blossom depends on the world around it. "If no one helps [the child], if an environment is not prepared to receive it, it is a creature in continual peril from the point of view of its psychic life – a waif in the world" (Montessori, 1983: 33).

John Dewey focused on the importance of learning through real-life experience. He believed that "Infancy, youth, adult life – all stand on the same educative level in the sense that what is really learned at any and every stage of experience constitutes the value of that experience" (as quoted in Schultz, 2001: 40). It is therefore important to Dewey that music education be taught through the evolution of experiences. Following this belief, music programs should be aimed at creating an appreciation for the aesthetic beauty and power of music rather than the technical demands and skills required for producing such. Consequently, children should be encouraged to discover music for their own reasons and therefore discover their own appreciation. They should be encouraged to act upon their environment in an exploratory manner. Dewey was of the opinion that "if we fail to create appreciation, we become at once just trainers, mere teachers of tricks, and we cease to be educators" (Mursell and Mabelle, 1938: 120). He suggested that if music is made to be an enjoyable and creative experience, it will be so attractive and tempting that the common arguments and difficulties involved with the repetitive practice of tedious skills can be overcome (Mursell and Mabelle, 1938: 120).

Eclectically combining elements of three psychological theories discussed in this paper will illustrate the importance of an ideal environment conducive to music appreciation and

development of talent. Certain aspects of Piaget, Vygotsky, and Social Cognitive Theory will be discussed, subsequently emerging as one suggested theory for the development of children's musical talent. This will finally be applied to the analysis of the data collected from the questionnaires and case studies.

John Piaget was a Swiss biologist who was interested in *epistemology*, the origin of knowledge. Piaget developed a set of basic assumptions, many of which concur with Maria Montessori, to describe and explain changes in thinking and learning that he applied to children and adolescence. The following three assumptions, drawn from his work, support the hypothesis that environment affects music ability and talent.

First, Piaget believed that children are active and motivated learners. Therefore, surrounding children with stimulating learning materials will encourage intrinsically motivated learning. Setting up a listening area in the classroom or house, providing books on musical subjects, and providing musical instruments (e.g. whistles, recorders, and rhythm instruments) will attract children naturally due to their curiosity. Consequently, their musical awareness and abilities will increase. Like Suzuki, Piaget believed that if the above is completed at an early age, the increase in talent will be exponential.

Second, Piaget believed that children construct knowledge from their experiences. Children who see other people play instruments or perform assimilate this information so that it may be used at another time. If children are surrounded by musicians and music there is a substantial amount of information that they use to construct ideas and concepts of music. Consequences of an experience may not appear for years after the initial occurrence, but Piaget stressed that "the ability to think logically about a situation or topic depends greatly on a student's prior knowledge and background experiences" (Piaget as quoted in, Omrod, 2003: 33).

Piaget's understanding of the significance of experience is supported by Lewicki *et al* (1992) who conducted an empirical study to test the processes involved, and the ability of, the nonconscious sector of the brain to learn and use information. According to the authors there is an abundance of correlating evidence concluding that the process of nonconscious information-acquisition is faster and more sophisticated than conscious acquisition. This study also quoted additional research that found that preschoolers could easily encode algorithms involving covariations even though their conscious thinking was not developed enough to understand the concepts (e.g. language acquisition, usage, and comprehension). Nonconscious cognition is responsible for a substantial amount of learning, and is the place where the bulk of mental work

occurs, therefore expanding the sphere of plausible methods of cognitive learning. Lewicki *et al* (1992) concluded that the nonconscious level of the human brain is much more sophisticated at learning than the conscious mind. If this is true, then Piaget's belief in the importance of background learning has great relevance to the significance of musical environment, specifically background music, to the creation of a musical individual.

Third, and finally, Piaget believed it is the essential interaction with one's environment. Watching is not enough to produce musical talent or appreciation. In order to gain appreciation for piano music, children must be allowed to experiment on a piano and hear different genres of piano music. It is the interaction with the instrument that allows the child to make connections to what they have heard. People often admit that they wished they could play a certain instrument when heard on the radio. Their mental awareness of the beauty they hear cannot be confirmed by physical interaction, only audio. In addition, a child's perceived expectation of the ease with which a violinist seems to perform will be brought into perspective if the child is allowed to try a violin.

Russian psychologist, Lev Vygotsky worked around the same time as Piaget, but evolved a different set of assumptions to explain how children develop cognitively. Vygotsky believed that "children can perform more challenging tasks when assisted by more advanced and competent individuals" (Omrod, 2003: 37). In keeping with this belief, it is preferable to have young children playing on instruments with the help of an adult: for example, having the child strum the guitar while the teacher plays chords or having the child play improvisatory material above a bass line played by the teacher on the piano.

In teaching, Vygotsky's notion of scaffolding (Omrod, 2003: 39-40) is prevalent in teaching children the steps involved in learning new skills. Omrod (2003) illustrates the concept of scaffolding with a piano lesson, which identifies the importance of the use of diagrams, pictures of hand positions, and numbered notes for fingering. By helping children to accomplish challenging tasks, parents and educators are helping to promote maximum cognitive growth in children. The techniques used to complete a challenging task are stored in the brain for future use and application to other tasks. These scaffolding techniques break down an enormous amount of technically difficult information that can then be transferred to any instrument at a later date.

The final theory, Social Cognitive Theory, asserts that people can learn new behaviours by watching others and coined the term *modeling*, defined as learning by watching and imitating

another person. Modeling alone will not increase a child's musical abilities, but does maintain a very important role in the rearing and teaching of children. Children learn by watching, whether the outcome of the learned behaviour is favorable or not. Learning through modeling is an important step in cognitive musical development and can be initiated in the following ways:

a) By watching the teacher or parent placing their fingers on the guitar or piano, the child will imitate these actions
b) By watching a piano performance, the child will mimic many of the actions taken by the performer (e.g. the bow, the exaggerated hand movements etc.)

Cognitive psychologists believe there are many techniques in which children may be assisted in developing a strong knowledge base (Omrod, 2003: 243). These ideas may be transferred to pertain to the construction of an environment that helps to build strong musical foundations and include:

a) providing opportunities for experimentation and the presentation of these ideas to others (e.g. concerts at home for friends and family)
b) using authentic activities such as examinations, festivals, concerts, and workshops whether real or pretend
c) promoting musical dialogue with others and creating a community of learners for example through workshops for students or "play-dates" with other children currently studying music

Following the Social Cognitive Theory, it is therefore important for parents and educators to create opportunities for positive modeling, engagement in musical dialogue, and creation of performance opportunities in the development of music appreciation and talent.

In conclusion, the methods outlined above can help parents and educators build an environment that will aide in the development of music appreciation and talent.

A questionnaire (Appendix A) was developed to relate children's home environments with their progress in the piano program. The questionnaire was distributed to 120 students of varying levels and abilities, under the age of 18, at a piano school in Mississauga, Ontario. The questionnaire consisted of four sections: General Information & School Information, Piano Instruction, Other Instrumental Instruction, and Personal Listening Information. It was necessary to separate students currently studying the Royal Conservatory of Music curriculum (hereby named "RCM group") from beginner students working in method books by varying authors in order to correlate musical environment with progress in the program. The questionnaire was

designed to explore the relationship between progress made within the piano program and music activities at school and in the home. Results were examined to determine if environment was a significant factor in the development of musical talent and appreciation for these children.

In order to measure the progress of students within the program, a ratio was developed (the "progress ratio") to measure the number of RCM levels completed per year. The first section of the questionnaire (*Appendix B, Table 1*) asked students the following:

a) how long they had been studying the piano
b) how many hours per week they practiced
c) whether they listened to the compact discs that accompany their repertoire
d) whether they played music outside of their assigned repertoire.

55% of the 31 students in the RCM group reported a practice time of four to six hours per week, and 29% reported two to four hours per week. 65% of the RCM group reported that they listened to the compact discs that accompany their repertoire and 74% state that they play music other than that assigned in class. The average progress ratio (levels accomplished per year) was 0.8. 13 students had progress rates of 1.0 and above, representing 42% of the original 31 students. Of these 13 isolated students, 67% reported that they practiced more than four hours per week, that they listened to their repertoire compact discs (hereby named "CD"), and that they played extracurricular music not assigned in class.

At the opposite end of the spectrum, eight students had a progress ratio below 0.5. 75% of this group practice less than 4 to 6 hours per week and only 50% listen to their repertoire CDs. Surprisingly, 87.5% of these students reported that they played music not assigned in class. In summary, lower practice times and less repertoire listening confirms that all three requirements: practice time, listening, and extra music are required in order to enhance progression at a faster rate.

Table 2 (Appendix B) displays the results from the questionnaire concerning school time for music class. 75% of the High and Low Progress Ratio groups were found to receive music at school. The difference between the two groups was not evident until the number of music instructional days was evaluated. 50% of the High Progress group receive 2 days of music instruction per week versus only 25% of the Low Progress group. The majority of the Low Progress group receive only one day of music instruction per week.

In *Table 3 (Appendix B)*, other instrumental instruction and participation in ensembles was examined for the two groups. It was found that a higher percentage of students in the High

Progress group play additional instruments (42% vs. 25% in the Low Progress Group) and participate in ensembles (58% vs. 38% in the Low Progress Group).

Table 4 (Appendix B), shows the results of the personal listening portion of the questionnaire. It was found that 83% of the High Progress group and only 63% of the Low Progress group listen to music frequently.

The students included in the High Progress Ratio averaged almost 2 years older than those students in the Low Progress Ratio did. This finding led to an uncertainty of the findings in the previous section due to the possibility that they may be related to age instead of environment. For example:

a) Younger children will most often be at lower levels within the piano program and therefore the progress ratio may be skewed by lack of volume in data.
b) Younger children practice differently than older children, and often for less time due to concentration abilities.
c) Older children are better able to listen to music when they want, and less likely for this to be decided by parents.
d) High School students are provided with optional music instruction or semestered music programs and therefore do not receive the same amount of music instruction as those students in elementary or middle schools.
e) Instrumental programs usually begin in middle school, and therefore the ratio of students learning other instruments vs. those who are not will be significantly different depending on their age and the school attended.
f) Younger children are more likely to be involved with school choirs at the elementary level and therefore group participation may be affected by age.
g) Personal listening, watching television, reading books about music, owning music software or games, participating in camps, and attending concerts and shows are all severely affected by age due to parental involvement.

Therefore, due to the possibility of skewed results, the High and Low Progress Ratio groups were reduced further to include only those students between the ages of nine and twelve. This age span was found to be most effective because it covered the average age of both groups (High Progress group age average 11.5 and Low Progress group age average 9.8).

Maintaining the original separations based on the Progress Ratio determined at the beginning, the nine to twelve year olds maintain an average progress ratio of 0.8 levels per year

(*Table 5, Appendix B*). The high group now consists of six students, all of whom have a progress ratio above 1.0, the average being 1.3. Of these students, 67% practice more than four hours per week and 83% listen to their repertoire discs and play unassigned music. The low group comprises five students. The average level per year is 0.4. 40% of these students practice two to four hours per week. In addition, only 40% of this group listen to their repertoire disc. Unexpectedly, 100% of these students play music not assigned in class.

The high group of nine to twelve year olds now show an 83.3% participation in other instruments and ensembles or choirs (*Table 6, Appendix B*). Towards the other end of the spectrum, the low group shows that only 40% of these nine to twelve year olds are learning other instruments and 60% participate in ensembles or choirs.

Within the high ratio group, 100% of the children received music instruction at school, and 83% receive at least two instructional days per week (*Table 8, Appendix B*). This percentage is slightly higher than the 40% of the low ratio group that receive two instructional days per week. In addition, 40% of the low ratio group only receive music instruction one day per week.

The data from the personal listening section of the questionnaire can now be analyzed without fear of age related effects that may have distorted the data. The results of this portion seemed backwards and require further examination (*Table 7, Appendix B*). It was surprising, for example, that the low progress ratio group shows higher percentages in their frequency of listening to music, watching music on television, possessing music games or software, attending concerts or shows, and participating in dance lessons. It is possible that because these children are involved in so many different activities, outside piano, their attention to piano is reduced, thereby affecting their progress. This would be more fully explored in a separate study. At this point, such conclusions are speculative at best.

In an effort to elaborate on the findings suggested by the Questionnaire, two subjects from the study were chosen for further discussion. Both subjects were raised in musical environments. Both of these two subjects might be labeled as inherently "talented", but Davidson, *et al.* (1997: 191) suggests that "it is equally possible that the children concerned may simply have had more exposure to music in their everyday environments than other children, and as a consequence of familiarity display more musical signs"

Subject A, a seven year old male who is the son of an "academic" musician (in contrast to performing musician) and piano teacher, has grown up with music since prior to birth. Throughout his life he has been introduced to a vastly diverse range of music and musicians. He

has been encouraged, but not required, to play the piano yet shows a great appreciation for his music. Instead of cartoons in the morning, he is more apt to go to the piano and play a plethora of music he has learned, and will often attempt to play and compose new music of his own accord. Growing up within a house that includes a working piano school five days per week has also had a great effect on his musicianship. He is able to sing and play, by ear, melodies from music that spans eight years of the Royal Conservatory of Music levels and enjoys improvising. Louis Armstrong was known to "sit and watch jazz performances, and through trial and error and interactions with older, more experienced players he had many opportunities to discuss, play, and so develop his own ideas" (Davidson, 1997: 194). Subject A is also offered many of these opportunities, but often within a classical setting.

Subject A's mother listens to music from all genres regularly and often has classical or easy listening playing as background music both in the house and in the car. Subject A is currently studying grades one and two (transitional period) of the Royal Conservatory of Music in addition to playing music for enjoyment (not assigned in lessons). His progress ratio is 1.0 and he practices and plays for at least four to six hours per week of his own accord. Subject A often listens to his repertoire CD and has internalized and memorized the melodies of most compositions. In addition, family dynamics play a large role in his practice time as he often has his mother or grandmother sitting next to him both in a listening/appreciative capacity and in a teaching capacity.

Subject B is a six-year-old female who has been playing the piano since the summer of 2004. Formal lessons with a teacher were begun in September of 2004. Subject B has a sibling who has been seriously studying music for 4 years and is currently studying at the grade five Royal Conservatory of Music level. Subject B has consequently been surrounded by the music of her sister for four out of the six years of her life. Her sister shows a great aptitude for music and has beautiful tone and form at the piano, Subject B has also shown these qualities, confirming the modeling theory of the social cognitive theorists. In addition, she often joins her sister in listening to her repertoire CD, and has internalized many of the compositions as well as the composers' names. Berndt and Bulleit, (1985) found that older siblings were more apt to exhibit teacher behaviour towards their younger siblings. Davidson *et al*. (1997: 199) confirm this phenomena and found that the "majority of [their] respondents indicated that they were either inspired by the sibling musically, or had imitated the sibling". Subject B has progressed

quickly through the beginner method books and will be moving into the Introductory level in January 2004.

Both subjects A and B are surrounded by music in many aspects of their lives, including school where they receive music instruction at least twice per week and participate in school choirs. They demonstrate the notion that environment as a significant factor in the development of musical talent and appreciation and show that positive role models and secure family dynamics have been fundamental to both subjects' perceived success in piano. Suzuki was a firm believer in waiting for a child to say, "I would like to play" before allowing the child to begin learning the violin. This situation is easiest when a sibling or parent is already playing that instrument. The beautiful music they hear motivates them. In addition, Suzuki placed great value in having more advanced students play for younger students in order to encourage them and provide examples of playing style. Research has shown that there is a great deal of value in the "collaborative learning for the child with other family members to assist in the development of higher levels of competence" (Davidson *et al*., 1996), as demonstrated by Subjects A and B.

The impact of these findings can assist parents and educators in the creation of environments at home and at school that will be conducive to the development of talent and appreciation of music for children of all ages. Following the teachings of Suzuki, the creation of such an environment will have the most significant effect if done at an early age, for example, the preschool years. If educators and parents can create a setting where music can be greeted with enthusiasm and spontaneity by young children, then they have succeeded in the enrichment of daily living and created opportunities for the future.

Davidson *et al.* (1996) found that parental involvement in music lessons significantly contributed to the successful acquisition of musical skills. In addition, they discovered that a parent's involvement with other musical activities also had a positive affect on the student. The following article, titled *Supporting the Young Musician* (Boucher, 2003), was included in a newsletter to parents at a Mississauga music school, and provides a well-rounded summary to the steps that should be taken by parents when creating a music friendly environment at home. The article displays the responsibility of educators to assist parents in the creation of musical environments. Many students have parents who claim to be completely non-musical, and therefore have no idea where to begin in supporting their child's musical adventures.

> Many times we are asked, "How can I help my child with their music studies when I can't read a single note myself?". Well, here are some suggestions for supporting your young musician in their studies.

1) Provide a warm, sensitive and supportive environment at home no matter how well your child appears to play.
2) Provide a practice area that is void of distractions. Keyboards or pianos are not practical when placed in the family room or other high traffic areas.
3) Ensure siblings do not disturb your child during his/her practice time. This is terribly unfair to the child trying to practice. Watching quietly is not the same as banging on the keys while your other child is trying to play Mozart!
4) Sit with your child and participate in their practice sessions even if you don't know anything about music. An encouraging hand on the shoulder or words from the mouth can be the difference between a child who hates to practice and a child who looks forward to it as "together time". Being sent off to practice alone can often feel like a punishment.
5) Sit in the classroom during your child's class and listen to both the teacher's instructions and your child's music. This will help you in the week when you sit with your child during their practice. When sitting in on a child's lesson, please remember, "Silence is Golden!". Parents should allow the teacher to teach the child or encourage appropriate behaviour when required.
6) Take a few lessons yourself so that you have a basic knowledge of what the child is being asked to do.
7) Play music in your home. A child who listens to beautiful music will be more likely to develop the ability to play beautiful music more easily.
8) Hold a "Family Concert Night" once a week to showcase your child's work and encourage further practice. Young children also enjoy making the program for the evening's event.
9) Suzuki believed that all children could become beautiful musicians given the right environment.

At the end of our teacher memos I always include the following advice: "Be animated and fun. Focus on your student's strengths, help them to conquer their weaknesses and enjoy what you are doing."

Certain limitations and suggestions for further study were discovered during the analysis of data from this study. In particular, several questions were raised with regards to the validity of the questionnaires:

a) How was the measurement of practice time completed by the subjects? Were they honest in their recollection of their practice and listening time or were the answers inflated so that they "look good" on paper? How is practice time utilized? What format do the students use to practice their assignments? Is the practice self-regulated resembling the students of Maria Montessori's schools where children eventually normalize certain behaviours?
b) Parents should have been asked to comment on whether they sit with the child during practice sessions and to report this experience.
c) Are the questionnaires filled in by the children or the parents, and if so are their perceptions of time and listening preferences similar?
d) Are the students in the study directing their studies via extrinsic (goal oriented by means of examinations, festival placings, parental requirements) or intrinsic motivators (the desire to produce beautiful music and play an instrument).

e) Parental involvement within the child's lessons would have also benefited the findings of this study (Davidson *et al*, 1996).
f) A larger subject base would have allowed for a more elaborate analysis of results, as only 50 of the 120 students returned their questionnaires.

In addition, a more detailed case study of individual students, possibly even a longitudinal study, would provide additional information on their environments in the home. Davidson & Pitts (2001) conducted a study of adopted children in music programs to prove that biological factors were not a significant factor in the development of a talented or well-rounded musician. They found that the limitations of "heredity" could damage the prospects of young musicians if parents held strong biological views with regards to the abilities of their children. Many adopted children do not have the ability to draw similarities through heredity of their likes, dislikes, and skills and therefore adoptive parents are found to be more encouraging in the exploration and support of new skills. Davidson *et al.* (1996) found that "parents influence their children in many ways, and the particular kinds of support they can provide may have a major influence upon the nature and form of a child's accomplishments." It is therefore in the best interest of children to have supportive parents in all areas of their lives, and that parents can also set limitations on their child's accomplishments without conscious awareness. Larsen (1987) found that "high achievement expectations… are likely to influence the opportunities [that parents] provide" and therefore it is important to base expectations on the developmental abilities of children rather than believed hereditary traits. Furthermore, it would also prove interesting to compare students of musicians with students of non-musically trained parents to reveal whether the influences of such are positive or significant in the creation of talent and appreciation.

In conclusion, the results from the questionnaire and case study confirm the correlation between progress made within the piano program and music activities at school and in the home, therefore confirming that environment is a significant factor in the development of musical talent and appreciation.

First, students with a high progress ratio are also found to engage in more hours of practice per week. These findings concur with those of Davidson *et al*. (1997: 193) who observed that the "specialist group progressed through the grade examinations much quicker than the others". Practice time has been well documented as an important factor in determining its relationship with proficiency (Davidson *et al*., 1996, Davidson *et al*., 1997, Ericson *et al*., 1993).

Second, the high ratio group engage in more music instructional time at school, listen to their repertoire CDs and play extracurricular music not assigned at lessons. These students are also more likely to be involved with additional instruments and participate in ensembles or choirs.

Children who have been provided with an abundance of opportunities to "experiment with sound and movement will have acquired a helpful background for later musical growth and understanding" (Bayless and Ramsey, 1982). Music will eventually be assimilated into the daily lives of young children and this experience will accompany them far into adulthood. The home is the beginning of musical experiences for infants and preschoolers, and is also where adults pose the greatest impact on musical development based on how music is presented (Bayless and Ramsey, 1982). If music is presented as beautiful and enriching, children will then appreciate music as beautiful and enriching. "Any child has the possibility to be musically inclined. Talent will sprout according to how the children are raised" (Suzuki, 1981). "For, if we awaken the artist in man at a tender age, when he is so receptive to all beauty, then his later life will be incomparably more fulfilled and enriched." (Michel, 1973: 19).

Appendix A - Questionnaire

"Effects of Environment on Development of Music Talent"
Informed Consent Form

Dear Parent/Guardian,

As you all know, I am currently completing courses at York University in music. As part of my coursework I am working on a research paper that will show the effects of environment on musical talent in private tuition piano students. As part of my research study I intend to relate children's home environment with their progress in music programs and development of musical "talent". I am hoping that you will participate in this study by completing the questionnaire below, but emphasize that you are under no obligation to partake. Participation in this study will benefit you and your child by providing information on your child's musical environment and changes that can be made to enhance their progress in their music education. The results of the study will be made available to you through distribution of the final research paper. Please note that participants will not be identified. Please do not write your child's name anywhere on the questionnaire. In order to confirm that you have consented to participation, please sign this "Informed Consent Form" below. Should you have any questions or concerns, please do not hesitate to contact me. Thank you for your assistance.

Sincerely,

Donna F. Boucher, B.A., B.Ed.
Tel. (905) 826-5037
Email. balancingact@sprint.ca

_____
Signature of Parent/Guardian

"Effects of Environment on Development of Music Talent"

Questionnaire

General Information & School Information

Age:	Gender: male ❒ female ❒	School Grade:
Do you take music at school? yes ❒ no ❒	School Board: public ❒ catholic ❒ private ❒	
How often do you receive music instruction at school? 1 day/week ❒ 2 days/week ❒ 3 to 5 days/week ❒		

Piano Instruction

Date Started Piano:	At what age:	Current Level Theory:	Current Level Piano:
Approximate practice time per week? 0-2 ❒ 2-4 ❒ 4-6 ❒ 6 or more ❒			
Do you listen to the CD's that accompany your piano repertoire album? yes ❒ no ❒ not applicable ❒			
Do you play music not assigned in your lesson? yes ❒ no ❒			

Other Instrumental Instruction

Other Instruments/Voice:	
Current level:	Date Started:
Do you play or sing in a group? yes ❒ no ❒	
Please specify: School Band/Ensemble ❒ School Choir ❒ Church Choir ❒	
Theatrical Ensemble ❒ Other ❒ please specify: _____	

Personal Listening Information

Do you listen to music? frequently ❒ infrequently ❒ sometimes ❒ never ❒
Do you listen to music in the car? frequently ❒ infrequently ❒ sometimes ❒ never ❒
Please specify what styles of music you listen to? Rock ❒ Soft Rock ❒ R&B ❒ Easy Listening ❒ Country ❒ Broadway ❒ Alternative ❒ Children's ❒ Religious ❒ Classical ❒ Cultural ❒ please specify: _____
What music listening equipment do you have available? radio ❒ cassette ❒ CD player ❒ car stereo ❒ computer ❒ DVD player ❒ other ❒ personal Discman/walkman ❒
Do you watch music concerts/events/documentaries on the TV? yes ❒ no ❒ Please specify: _____
Do you read books about music and/or composers? yes ❒ no ❒ Please specify: _____
Do you have music software/games at home? yes ❒ no ❒ Please specify: _____
Do you participate in music camps or other music programs? yes ❒ no ❒ Please specify: _____
Do you attend concerts/shows/or other productions? often ❒ occasionally ❒ rarely ❒ never ❒
Do you attend dance or theatre lessons? yes ❒ no ❒ Please specify: _____

Appendix B – Data Tables

Table 1 – Piano Instruction, General Information, Progress Ratio, Practice Time, CD Listening, and Unassigned Music.

Table 2 – School and Group Participation

Table 3 – Other Instrument/Vocal Instruction

Table 4 – Personal Listening Information

Table 5 – Piano Instruction (9-12 Year Olds), General Information, Progress Ratio, Practice Time, CD Listening, and Unassigned Music.

Table 6 – Other Instrument/Vocal Instruction (9-12 Year Olds)

Table 7 – Personal Listening Information (9-12 Year Olds)

Table 8 – School and Group Participation (9-12 Year Olds)

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Original Outline

A. Introduction

1. Working Thesis: Environment is a significant factor in the development of musical talent and appreciation.

B. Summary of Background Approaches

1. Education.
   i. Shimichi Suzuki – Mother Tongue Learning, Talent Education.
   ii. Mary Montessori – Self Directed, Experiential Learning.
   iii. John Dewey – Experiential Learning.

2. Cognitive Psychology.
   i. perception.
   ii. concept formation.
   iii. memory.
   iv. language acquisition.

3. Nature vs. Nurture.
   i. Observational Learning, Modeling.

C. Method

1. Description of Questionnaire and proposed relevance to thesis.

2. Description of Subjects.
   i. General information about subjects involved in the survey.
      (a) Grouping of subjects according to age, gender.

D. Analysis and Discussion of Survey Results

1. Generalized information about results - connections to the background information presented in the introduction to discover any significant correlations between the results and the working thesis.
   i. School information.
      (a) Grouping of subjects according to amount of music instruction received at school.
   ii. Piano instruction.
      (a) Grouping of subjects according to practice time, listening habits and extra music played.
      (b) Grouping of subjects according to rate of progress (correlation between "Date Started" and "Current Level").
   iii. Other instrumental instruction.
      (a) Grouping of subjects according to whether they are currently studying additional instruments or voice.
      (b) Grouping of subjects according to whether they participate in ensembles.
   iv. Personal listening information.
      (a) This section will provide the information required to construct subject's home musical environment. Subjects will be grouped according to frequency of listening, watching, and reading.
2. Summary of findings as they relate to issues raised in the introduction and thesis.
   i. Education.
   ii. Psychology.

E. Impact & Implications of Findings

1. Impact of findings on parents and educators.

2. Implications for the future.

F. Conclusion

1. Limitations of this study and changes that would be made for future studies

Modified Outline

A. Introduction

B. Summary of Background Approaches

1. Education
   i. Suzuki
   ii. Montessori
   iii. Dewey
2. Psychology
   i. Piaget
   ii. Vygotsky
   iii. Social Cognitive Theory

C. Methods

1. Questionnaire
   i. Description of Questionnaire, Subjects and proposed relevance to thesis.
2. Observational Case Study
   i. Two subjects from the questionnaire study were chosen to illustrate further the effects of environment on musical ability and appreciation

D. Analysis and Discussion of Results

1. Questionnaire
   i. Generalized information about results - connections to the background information presented in the introduction to discover any significant correlations between the results and the working thesis.
      (a) School information.
         (i) Grouping of subjects according to amount of music instruction received at school.
      (b) Piano instruction.
         (i) Grouping of subjects according to practice time, listening habits and extra music played.
         (ii) Grouping of subjects according to rate of progress (correlation between "Date Started" and "Current Level" – average years/level).
      (c) Other instrumental instruction.

(i) Grouping of subjects according to whether they are currently studying additional instruments or voice.

(ii) Grouping of subjects according to whether they participate in ensembles.

(d) Personal listening information.

(i) This section will provide the information required to construct subject's home musical environment. Subjects will be grouped according to frequency of listening, watching, and reading.

(e) Comparison of (i) – (iv) with (ii)(b) rate of progress to see direct correlations

2. Case Study Observations
3. Summary of findings from both the Questionnaire and the Case Study as they relate to issues raised in the introduction and thesis. (Concluding Paragraph to section)

E. Impact & Implications of Findings

1. Impact of findings on parents and educators.
   i. parents
      (a) how to create an environment conducive to music appreciation
   ii. educators
      (a) how to create an environment conducive to music appreciation
      (b) how to support parents in the creation of an environment conducive to music appreciation and talent (article by Donna in newsletter)
2. Limitations of this study and changes that would be made for future studies
   i. more detailed case study of individual students
   ii. study of adopted music students (Davidson & Pitts, 2001)
   iii. compare students of musicians and non-musical parents
   iv. longitudinal study

F. Conclusion