

Welcome to *Point of View*, a newsletter featuring articles, research, and information to inspire and educate while providing current news and updates for Providers of The Listening Program.

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We're Listening...

We love to hear from you.
Tell us what you think...



Holiday Greetings,

Reflecting on 2006 I want to express my gratitude to each of you; Providers, Training Faculty, International Representatives, Team Members and Friends. It is through you that our mission is realized.

Each day directly and indirectly we all come together to touch the lives of tens of thousands of people in different countries and cultures and of different means and needs. In this time of challenging world affairs and in the pursuit of peace, health, happiness and prosperity, I hope that you take the time to reflect and realize how much you are each contributing to the greater good of our world.

Thank you for being a part of ABT and for your engagement in our mission. I am excited for what is to come in 2007 and grateful for your continued involvement with our company.

Warm wishes to you and your families,

Alex

Sound Health® Nursing Student Research

The Relationship Between Background Music in the Classroom, Attitudes Toward Nursing Research and Academic Achievement

Marianne Flood, PhD, MA, RN
Assistant Professor of Nursing
Bloomfield College

The fact that we are influenced by music comes as no surprise. Lovers use music to “put them in the mood”, athletes use music to “pump them up” and entertainers use music to “get the floor moving”. However, more recent studies have recognized the therapeutic effect of music on health and education as an alternative therapy. It can actually alter the physiology of our bodies and make us healthier, less stressed, and smarter (Davy, 2001; Pouliot, 1998; Tufts University Health and Nutrition Letter, 2001).

Music plays an important role in the lives of our students at Bloomfield College. They are constantly seen with earpieces listening to music of all varieties. They are conditioned to multi-tasking as they play music, read their homework assignments, and check e-mails on their computers. As educators, it is important to obtain information about the success of students related to music. Is there a positive relationship between the listening of Baroque style music and student test grades? Do the students have a better attitude towards the subject area when they are listening to music in the background?

Dr. Maya Ruvenshteyn and Dr. Leonard Parrino conducted a study at Essex County College last year studying the effects of Baroque style music on undergraduate student attitudes towards mathematics. They found a significant difference between two groups as follows: classes with the music in the background were more positive toward the subject matter, more cooperative, and easier to teach than classes without the background music. Preliminary results indicated an improvement in grades but further research is needed in this area.

Janine Pouliot (1998) examined the differences among the use of rock, New Age, and designer music related to heart rate and the immune system as measured by Immunoglobulin-A present in the saliva. She found a significant difference between the different kinds of music that were listened to in the study. The designer music, which consists of melodies to produce a desired effect, had the greatest increase in the production of salivary Immunoglobulin-A.

Other studies indicate the “Mozart Effect” which compared 36 undergraduates who listened to 10 minutes of Mozart’s Sonata for Two Pianos, K.448 and scored 8 to 9 points higher on the Stanford-Binet Intelligence Test compared with their scores after a period of silence or relaxation. Other research indicates music accelerates learning of foreign languages (Ostrander, 1994; Rose; 1997).

Methods

This past spring semester, 2006, research was conducted to extend the Ruvenshteyn and Parrino study by examining the differences between two classes of nursing research students that are exposed/not exposed to Baroque style background music during all of their classes and exams on their attitudes towards nursing research and academic achievement as measured by final test average in the course. The students were randomly registered for the two sections of Nursing Research that are offered in the spring semester 2006. The same professor teaches both sections of the class. Group one was randomly selected by the Division secretary to have the Sound Health® music produced by Advanced Brain Technologies playing in the background at a low level. This is the same music selection the researchers used at Essex County College. It is music designed to enhance concentration, thinking, learning, and creativity. Group two was taught the same content with the same teaching methodologies but there was no music playing in the background. Students who signed informed consents were asked to complete an 18-item likert scale evaluating the class environment and their attitude towards the course. The likert scale and debriefing statement were distributed to students after the final exam by the nursing laboratory assistant outside the classroom.

Results

The two groups were compared on attitudes towards nursing research as well as final test scores in the course.

The Statistical Package for the Social Sciences (SPSS) was used to run independent samples t-tests on differences between the groups on test average, pre-NLN scores, Nursing 225 test grades (course taken immediately preceding nursing research course), attitude towards music, attitude towards research, and various demographic variables including gender, age, ethnicity, favorite music and favorite subject. The only significant finding between the group exposed to music and the group not exposed to music was the final test average in the nursing research course ($t=2.5$; $df=40$; $p=.017$). The test average for section 1 (exposed to music) was 80; the test average for section 2 (not exposed to music) was 73.

The total sample of 42 students consisted of 26 students in section 1 and 16 students in section 2. There were 5 students who signed informed consents that did not complete the research forms at the end of the semester. Three of the five students who did not complete the forms failed the course.

The pre-NLN scores and NUR 225 final grades were compared for the two groups in an attempt to analyze equality of the groups in terms of achievement variability. There were no significant differences between the groups on pre-NLN scores ($t=.021$; $df=33$; $p=.983$) or NUR 225 final grades ($t=-.139$; $df=38$; $p=.891$). Even though there was no true random assignment to the two sections of nursing research because students registered at their convenience and chose the section they wanted, the groups were not significantly different on these two academic indicators of achievement.

A five-point likert scale was used to evaluate attitude towards nursing research. Four statements were selected from the 18 question scale to evaluate attitude towards nursing research. A group comparison of these four statements showed no significant differences ($t=.326$; $df=40$; $p=.746$) between the group with music compared to the group without music. The four statements and their corresponding numbers used to evaluate attitude towards research were:

1. I like the class.
3. The class is boring.
4. I like the presentation.
13. The class is very interesting.

There were no significant differences between the groups on anxiety level at the completion of the course ($t=.73$; $df=40$; $p=.47$). One statement from the likert scale was used to evaluate differences between the groups on anxiety:

18. I feel less tense in this class than I have in other college classes.

There were no significant differences in the two groups on the demographic variables of age, ethnicity, gender, favorite music and favorite subject. However, the total N may not have been large enough to detect differences ($N=42$). The highest percentages of demographics are: 41.5 % of the students were between the ages of 18-22; 90% were female; 39% were African -American; 39% preferred Rap/Hip Hop music; and 46% chose science as their favorite subject.

Discussion

It is promising that there was a significant difference between the two groups on test averages at the end of the semester. The group that was exposed to the baroque music throughout the semester had a significantly higher test average compared to the group that had no music in the classroom. Two academic variables including pre-NLN test scores and final grades in the previous nursing course taken at Bloomfield College (NUR 225) were compared in the two groups and no significant differences were found. The group that had the music met during the day hours; the group without music met during the evening. This may have been an extraneous variable which could have affected the test grades in the two classes. The students who met in the evening may have been fatigued. However, the evening class was significantly

smaller than the day class and students had more opportunity to discuss content and concepts with the professor one-on-one during the evening hours. The same office hours were available to all students from both sections.

There were no significant differences found between the two groups on attitudes towards nursing research.

The results of this study can be used tentatively in future classes in nursing. For example, one course in nursing involves drug calculations and important mathematical concepts. Since the preliminary results of this study indicated differences in test averages in the two groups, music may be a catalyst for better test scores and retention of mathematical concepts in future nursing courses. Further studies need to be done to increase the number of participants and to allow for higher level statistical analysis.

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NEW! ABT Marketing Materials

We are pleased to share that there are two new informational/marketing materials now available to you!

The Listening Program Brochure

With a beautiful new design, and a clear explanation of The Listening Program® you should find this to be an indispensable tool in your TLP Provider Practice.



This brochure is organized in sections and takes readers through a sequential overview of The Listening Program. It has six panels and folds out with beautiful photography of the TLP Shell, and high-quality four color printing on a very heavy paper stock. There is a pocket which is designed to accommodate information such as a cover letter, case studies, research, etc.

Very soon we will start releasing information sheets that you can download from our website on the use of TLP in certain client populations and performance areas in addition to product sheets on Level One, Bone Conduction, etc. These are being designed to accompany the brochure so that you can individualize the information you wish to provide on The Listening Program.



This brochure is 9" X 12" folded and fits a 10" X 13" envelope. It replaces the 2 sided TLP flyer we have been using for the past few years.

ABT Media Catalog

You will recall we launched a new website www.abtmedia.com several months ago. As a companion to that we now have an ABT Media Catalog which presents information on Sound Health®, BrainBuilder®, Music for Babies™ and Shelley's My First Computer Game™.

This beautiful catalog shows all of the ABT Media products that nourish the mind to maximize potential and provides brief explanations of each. It has vivid four color printing on a nicely weighted paper stock. It is 6" X 8" with 8 panels and saddle stitch binding. This catalog replaces the individual flyers we have been using for the ABT Media products for the past few years.

Both the TLP Brochure and ABT Media Catalog are exceptional informational/marketing tools for conferences, seminars, waiting rooms, information packets and to give to clients and colleagues.

They can be ordered in packs of 25 each and are now available through your ABT Representative.

2007 Provider Training Dates and Locations



We invite you to experience and learn about the new enhanced features of The Listening Program!

At ABT, we made a commitment to you that The Listening Program method would always be the most advanced auditory stimulation tool available to your clients.

Based on advances in the fields of neuroscience, physiology, psychoacoustics, auditory processing, music theory and more we have added enhancements to The Listening Program, including High Definition music,

Spatial Surround® and refined frequency zone training. In addition, we have introduced Bone Conduction, a specialized delivery method of The Listening Program. These enhancements have contributed to an accelerated rate of change and improved treatment outcomes for individuals.

If it has been a while since you last attended a TLP Training Course, we encourage you to update and refresh your knowledge by attending one of the 2007 training courses offered. Due to the popularity of the training courses, we have expanded the number of regional 2 day courses offered throughout the year. Also, we offer several 3 day expanded learning courses hosted at our Ogden, Utah Training Center. This small group setting encourages a more dynamic and interactive learning environment under the facilitation of TLP developer and ABT founder, G. Alexander Doman.

2007 PROVIDER TRAINING SCHEDULE

DATE	COURSE	U.S. LOCATIONS
January 26 - 27	2 Day Course	Pasadena (Los Angeles Area), CA
February 9 - 10	2 Day Course	Boston Area, MA
February 22 - 24	3 Day Course	Ogden, UT
March 9 - 10	2 Day Course	Palatine (Chicago Area), IL
April 15 - 16	2 Day Course	Manhattan, NY
April 26 - 28	3 Day Course	Ogden, UT
May 18 - 19	2 Day Course	Coral Gables (Miami Area), FL
June 8 - 9	2 Day Course	San Francisco Area, CA
July 19 - 21	3 Day Course	Ogden, UT
2007 ABT INTERNATIONAL PROVIDER CONFERENCE		
July 26 - 28		Heber Valley, UT
August 10 - 11	2 Day Course	Bellevue (Seattle Area), WA
September 20 - 22	3 Day Course	Ogden, UT
October 5 - 6	2 Day Course	New Brunswick, NJ
October 19 - 20	2 Day Course	Dallas, TX
November 8 - 10	3 Day Course	Ogden, UT
December 14 - 15	2 Day Course	Atlanta, GA

To see a complete listing of 2007 dates and locations including the International Schedule please [click here](#).

A Silent Pandemic: Industrial Chemicals are Impairing the Brain Development of Children Worldwide

Fetal and early childhood exposures to industrial chemicals in the environment can damage the developing brain and can lead to neurodevelopmental disorders (NDDs)--autism, attention deficit disorder (ADHD), and mental retardation. Still, there has been insufficient research done to identify the individual chemicals that can cause injury to the developing brains of children.

In a new review study, published online in The Lancet on November 8, 2006, and in an upcoming print issue of The Lancet, researchers from the Harvard School of Public Health and the Mount Sinai School of Medicine systematically examined publicly available data on chemical toxicity in order to identify the

industrial chemicals that are the most likely to damage the developing brain.

The researchers found that 202 industrial chemicals have the capacity to damage the human brain, and they conclude that chemical pollution may have harmed the brains of millions of children worldwide. The authors conclude further that the toxic effects of industrial chemicals on children have generally been overlooked.

To protect children against industrial chemicals that can injure the developing brain, the researchers urge a precautionary approach for chemical testing and control. Such an approach is beginning to be applied in the European Union. It puts in place strong regulations, which could later be relaxed, if the hazard were less than anticipated, instead of current regulations that require a high level of proof. At present in the U.S., requirements for toxicity testing of chemicals are minimal.

"The human brain is a precious and vulnerable organ. And because optimal brain function depends on the integrity of the organ, even limited damage may have serious consequences," says Philippe Grandjean, adjunct professor at Harvard School of Public Health and the study's lead author.

One out of every six children has a developmental disability, usually involving the nervous system. Treating NDDs is difficult and costly to both families and society. In recent decades, a gathering amount of evidence has linked industrial chemicals to NDDs. Lead, for example, was the first chemical identified as having toxic effects to early brain development, though its neurotoxicity to adults had been known for centuries.

A developing brain is much more susceptible to the toxic effects of chemicals than an adult brain. During development, the brain undergoes a highly complex series of processes at different stages. An interference--for example, from toxic substances--that disrupts those processes, can have permanent consequences. That vulnerability lasts from fetal development through infancy and childhood to adolescence. Research has shown that environmental toxicants, such as lead or mercury, at low levels of exposure can have subclinical effects--not clinically visible, but still important adverse effects, such as decreases in intelligence or changes in behavior.

Grandjean and co-author Philip J. Landrigan, Professor at Mount Sinai School of Medicine, compiled a list of 202 environmental chemicals known to be toxic to the human brain using the Hazardous Substances Data Bank of the National Library of Medicine and other data sources. (The authors note that the list should not be regarded as comprehensive; for example, the number of chemicals that can cause neurotoxicity in laboratory animal tests exceeds 1,000.)

The authors then examined the published literature on the only five substances on the list--lead, methylmercury, arsenic, PCBs and toluene--that had sufficient documentation of toxicity to the developing human brain in order to analyze how that toxicity had been first recognized and how it led to control of exposure. They found a similar pattern in how the risks of each substance were documented: first, a recognition of adult toxicity and episodes of poisoning among children, followed by a growing body of epidemiological evidence that exposure to lower levels of the substances caused neurobehavioral deficits in children.

"Even if substantial documentation on their toxicity is available, most chemicals are not regulated to protect the developing brain," says Grandjean. "Only a few substances, such as lead and mercury, are controlled with the purpose of protecting children. The 200 other chemicals that are known to be toxic to the human brain are not regulated to prevent adverse effects on the fetus or a small child."

Grandjean and Landrigan conclude that industrial chemicals are responsible for what they call a silent pandemic that has caused impaired brain development in millions of children worldwide. It is silent because the subclinical effects of individual toxic chemicals are not apparent in available health statistics. To point out the subclinical risk to large populations, the authors note that virtually all children born in industrialized countries between 1960 and 1980 were exposed to lead from petrol, which may have

reduced IQ scores above 130 (considered superior intelligence) by more than half and increased the number of scores less than 70. Today, it's estimated that the economic costs of lead poisoning in U.S. children are \$43 billion annually; for methylmercury toxicity, \$8.7 billion each year.

"Other harmful consequences from lead exposure include shortened attention spans, slowed motor coordination and heightened aggressiveness, which can lead to problems in school and diminished economic productivity as an adult. And the consequences of childhood neurotoxicant exposure later in life may include increased risk of Parkinson's disease and other neurodegenerative diseases," says Landrigan.

The researchers believe that the total impact of the pandemic is much greater than currently recognized. In supplementary documentation (see below for a link), about half of the 202 chemicals known to be toxic to the brain are among the chemicals most commonly used.

Testing chemicals for toxicity is a highly efficient public health measure. However, less than half of the thousands of chemicals currently used in commerce have been tested to assess acute toxicity and, although new chemicals undergo more thorough testing, access to the data may be restricted because companies fear exposing proprietary information. Also, current toxicity testing rarely includes neurobehavioral functions.

"The brains of our children are our most precious economic resource, and we haven't recognized how vulnerable they are," says Grandjean. "We must make protection of the young brain a paramount goal of public health protection. You have only one chance to develop a brain."

To view supplementary documentation on industrial chemicals and risks of toxic effects on brain development, click here: <http://www.hsph.harvard.edu/neurotoxicant/appendix.doc>

Support for this research was provided by the Danish Medical Research Council, the (U.S.) National Institute of Environmental Health Sciences and the U.S. Environmental Protection Agency.

See the latest news from the Harvard School of Public Health.

Harvard School of Public Health is dedicated to advancing the public's health through learning, discovery, and communication. More than 300 faculty members are engaged in teaching and training the 900-plus student body in a broad spectrum of disciplines crucial to the health and well being of individuals and populations around the world. Programs and projects range from the molecular biology of AIDS vaccines to the epidemiology of cancer; from risk analysis to violence prevention; from maternal and children's health to quality of care measurement; from health care management to international health and human rights. For more information on the school visit: <http://www.hsph.harvard.edu/>

Contact: Todd Datz
Harvard School of Public Health

Ogden, Utah- Uintah Elementary Receives \$12,500 in Grant Monies

In November Uintah Elementary School in Ogden, Utah received \$12,500 in grant awards to pilot The Listening Program® with close to 300 students!

This effort was spearheaded by Mary Arnow, a veteran Kindergarten teacher who was bound and determined to bring TLP to her school. She was introduced to TLP by her friend, ABT Team Member, Dorothy Lawrence.

\$5,000 was awarded by the Bank of Utah 100% Kids Fund with a matching grant from the Weber County School Foundation, the largest grant the foundation has ever awarded. The school's PTA contributed \$1,000 with additional monies coming from Wal-Mart and a private donor. ABT contributed an additional

\$3,000 bringing total funding to \$15,500.

The funding went toward Provider Training, Level One Site Licenses, and enough audio equipment to accommodate classes of up to 30 students at a time. In addition teachers were provided with Sound Health® CDs for their classrooms.

Susan Snee of ABT has spent several months and untold hours researching funding options and organizing the information necessary to help Providers pursue grants to fund TLP in US schools. Uintah Elementary is the first school to apply for and receive funding with Susan's help. Congratulations to Mary and Susan. Your conscientious efforts will reach hundreds of children each day!

This school is close to our hearts as it is our neighborhood school that is attended by Mandy Eyre's two boys Zane and Ethan. We greatly look forward to sharing the progress made by the children in our community that are fortunate enough to attend this forward thinking school in coming issues of POV.

Brooklyn, New York- Omni Childhood Centers Hosts Private TLPTC

On December 3rd and 4th Omni Childhood Centers in Brooklyn, New York hosted a private TLP Provider Training for 50 of it's staff members.

ABT Training Faculty Members Sheila Allen and Bryan Gee instructed the course along with Alex Doman and Mandy Eyre of ABT.

Omni is one of the largest outpatient rehabilitation facilities in Brooklyn, offering comprehensive evaluations and treatment for various physical and neurological disorders. Their highly skilled therapists are New York State licensed, and dedicated to enhancing the quality of life of clients ranging in age from infants and children through adults and seniors.

Omni's state of the art childhood department provides expert evaluations and therapy services for a variety of developmental and/or learning difficulties. Omni provides the following services in addition to The Listening Program®:

- Physical Therapy
- Occupational Therapy
- Speech/Language Therapy
- Audiology/ Hearing Evaluations
- Hearing Aid Sales and Services
- Counseling
- Special Education

We would like to thank Charlotte Yantha, Director of Occupational Therapy for her help in organizing this course, and look forward to working hand in hand with Omni in the future.

To learn more about Omni Childhood Centers please visit www.omnirehab.com.

To inquire about hosting a TLP Provider Training Course at your facility please contact Mandy Eyre at mandye@advancedbrain.com.

