

Monterey Peninsula Foundation Grant

Samonas / Listening Project

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BACKGROUND

The MPC Samonas / Listening Project integrated two different intervention methods over a twelve week instructional period. These two methods included Samonas Sound Therapy, developed by Ingo Steinbach of Germany, and Learning Ears, developed by Gayle Moyers of Austin, Texas.

Samonas Sound Therapy is provided by using a series of compact discs comprised of specially recorded classical music and sounds of nature. The music provides direction stimulation to the middle ear, cochlea, auditory nerve and cerebral cortex, and indirect stimulation to the entire central nervous system. Samonas Sound Therapy teaches an individual to listen and trains the auditory system so that the full range of sound can be processed without distortion, hypersensitivity or frequency loss. This auditory training aids in the processing of language while eliminating the distractions of ambient sound. The data strongly suggests that this auditory input improves overall neurological function and hemispheric communication.

The Learning Ears Program™ is an advanced auditory stimulation and training program created to integrate improved auditory function with the development of learning, reading, and spelling skills. The program uses special audio-vocal training exercises to help develop listening skills.

PROJECT IMPLEMENTATION

During the Spring 2003 semester, fifteen adults enrolled in Learning Skills (LNSK) 331.1 Prescriptive Learning.

The participants were selected by the two primary project instructors, Kathleen Rozman and Terria Odom-Wolfer. Based upon initial assessments and student learning profiles, three groups were established:

- 1) language and memory issues;
- 2) language, hearing and academic issues;
- 3) attention, organization and laterality issues.

The members in each group had identical listening protocols.

The class was divided into two six-week phases. During the first phase, the students listened to Samonas CDs according to the prescribed protocol for 30 minutes per day, four days per week.

During the second phase, the students continued their prescribed **SAMONAS NETWORK tribution** listening and worked with an instructor individually for 15 minutes a day on a Learning Ears lesson.

RESULTS

The students experienced changes that were documented by assessment on formal instruments and informal behavioral measures. In addition, the participants reported significant gains in processing, comfort level with language, energy level, and emotional control. Brief case studies of the participants follow.

W, male, 60. W has spent the past 5 years concentrating on his dyslexic issues. He reads at a third grade level and has been diligently pursuing assistance to improve his reading. He identified that he had *hearing problems*. On the Tomatis Listening Test (TLT) he had a *tangled* profile. This means that his air and bone conduction processing profiles were interwoven. He experienced considerable difficulty in pitch discrimination (9/16 errors) and most of his air conduction profile on the R side was at the 20-35 dB level on the TLT. In the follow-up assessment, he identified that he was listening better. His R side listening skills were at a 15-30 dB level. The 7 intersecting frequencies/ points between air/bone processing reduced to only 3 intersecting points.

W's memory improved and his Descriptive Behavior Checklist (DBC) showed positive changes.

Test	Pre-Test	Post-Test
Visual Construction	14%	71%
CAB - Auditory Construction	64%	71%
DBC - Cognitive	20	40
DBC - Physical	27	56
DBC - Emotional	35	50

W's comments in the final review session are consistent with the changes noted in the DBC. *"My speech has improved. I can say words like "artist". I am now pronouncing words which I didn't use before -- this was a great way to come out of the closet to face my weakness in communicating. Now when I listen to music I am turning it down more and more."*

T, male, 50. T experienced a stroke three years ago. He has strength in reading, yet his verbal language is restricted, and he reported being frustrated by his communication issues.

The TLT was very interesting for T. His bone conduction profile equaled or exceeded his air conduction profile at 4 frequencies and equaled on 2 of 8 frequencies points in his right ear. This kind of profile indicates a tendency to process inside oneself versus processing external information. In other words, he was not listening to others.

Throughout the program T was good at repeating/echoing information during the Learning Ears dialogue, and during the sixth week he was able to repeat challenging three-word sequences.

On the re-assessment his profile had changed significantly, and it was apparent that he was becoming more aware of listening to others and processing external information.

M, female, 40. M had a head injury two years ago. She reported that she experienced difficulty in concentration, memory and emotional control.

M's listening processing improved on her TLT. Her auditory memory, reading and spelling skills all showed significant improvement.

Test	Pre-Test	Post-Test
CAB Auditory Construction	79%	100%
Letter-Word	110	126
Dictation	108	132
Word Attack	113	129

M reported, *"I am so glad that I took the time to do this. It made a big difference for me. I don't understand what is happening, but I feel like I am a nicer person. I am handling emotional situations better than my previous best. I no longer ask, 'What?' when people speak to me. Hooray for all those people, and me too!"*

S, female, 38. S had surgery for a brain tumor ten years ago. Prior to, and during the program, she was experiencing a severe middle ear infection in her left ear.

S improved in her visual memory on the CAB.

Test	Pre-Test	Post-Test
CAB Visual Construction	86%	93%

S reported, *"This is about increased confidence. I have the guts to repeat names and try different things. I didn't want to own up to my memory problems before. This developed my memory skills. The support of the class was helpful because when I admitted it [memory problems], others had the same issues."*

W, male, 59. W is an instructional technology specialist who chose to participate because of concerns about his hearing. W reported positive changes. *"This process is a bonafide way to help. I feel that the training went well. I was real skeptical, but now I believe it is a definite method of achieving results. My hearing is better, and I notice I am saying 'Huh?' less. I am sleeping better, and my wife says I am acting calmer. She knows best."*

W's TLT profile improved demonstrating stronger listening skills in the speech range. He no longer experienced pitch discrimination confusion with errors reducing from 5 to 0. W made an observation which many of the participants agreed with. *"For commercials on television now, I use the mute button. They bother me, they are too loud."*

S, female, 20. S, diagnosed with a nonverbal learning disability, made major shifts in her processing and language expression. Her memory skills and decoding for reading complex nonsense words improved, and her TLT profile showed positive changes. On the TLT, S demonstrated a profile in which she strongly excluded external processing in favor of her awareness of internal messages. In the speech range of her right ear, the air and bone conduction profiles were identical with the bone conduction in a superior position. On the retest, there was a 20 dB discrepancy with air conduction in the superior position.

Test	Pre-Test	Post-Test
CAB Visual Construction	64%	93%
CAB Auditory Construction	86%	93%

S's memory skills improved on the CAB as noted in the chart above. She recognized the changes in her comments summarizing the program. *"I feel like there is good program benefit. A person gets personal benefits, too. In the past, I have felt shut-down and with this program I am more outgoing. Now, I am looking for what made me happy in the past, and I know I will find it."*

A, male, 74. A experienced a stroke four years ago. He was interested in improving his articulation and the fluidity of his speech. He felt that he experienced numerous blocks and could not think of the words he wanted to use.

A's TLT profile showed that he was still very oriented within himself. He was more likely to be processing his own thoughts and internal information rather than information from others. During the course of the listening training, his profile altered considerably, and his need to process internal information minimized as he began processing information from others.

A's reading skills on the Moyer's Test of Decoding (MDT) showed improvement in his ability to process both real words and nonsense words.

Test	Pre-Test	Post-Test
MDT (B-List) Real Words	55%	85%
MDT (B-List) Nonsense Words	60%	100%
MDT (C-List) Real Words	65%	95%
MDT (C-List) Nonsense Words	not given	

A shared his thoughts about the program during the wrap-up session. *"Everyone [the other students] is saying what I have in my mind. I am centered, slowing down, and energized. A stroke happened to me four years ago. My speaking is coming along but I had to see a person to understand them. Now I hear better on the phone. I play in a band, and I found I read [music] better than before. Before the stroke, I couldn't read it at all. My son called the other day, and we could talk on the phone. He said, 'Amazing changes, Dad.'"*

A's teacher added to his comments. *"We are all very impressed. Your fluency is just amazing!"*

M, female, 35. M, a student, experienced major changes in her learning confidence. She initially reported she had attention focus problems with internal issues distracting her. She felt that she had difficulty with comprehension (of language), organization and feeling centered.

Her changes are apparent in the progress she reported. *"I got an energy boost with all the help. When I go home, I expected to relax, but instead I was energized, happy, and not upset. I used to trigger very fast and now I am not reactive. I speak slower and pronounce words with confidence. I am awesome in math. I am not a great writer, but I am getting high scores, so I have improved.*

I am nicer to my daughter, more attentive to her and educating her. My dreams have

become very vivid and colorful. When words are said, I am seeing the visuals with the words. I have noticed that a lot of the phone levels are too loud, now."

M's CAB scores and DBC scores verify the differences she is experiencing.

Test	Pre-Test	Post-Test
CAB Visual Construction	71%	79%
CAB Auditory Construction	57%	100%
DBC - Cognitive	5.3	8.0
DBC - Physical	5.8	8.7
DBC - Emotional	7.3	9.0

D, female, 61. D is actively employed and pursued her commitment to participate in the program even when it was not convenient. Her courage in tackling auditory development issues led to her success in increased memory skills, improved reading accuracy, and changes in her observations of her own performance. Her charts illustrate the changes which occurred because of her efforts.

Test	Pre-Test	Post-Test
CAB Visual Construction	64%	71%
CAB Auditory Construction	79%	93%
DBC - Cognitive	6.8	8.2
DBC - Physical	6.1	6.1
DBC - Emotional	7.6	8.8
MDT Level C Real Words	95%	95%
MDT Level C Nonsense Words	40%	70%

As a bright professional woman, D will continue to benefit from her listening experience as she utilizes her new skills.

M, female, 42. M wanted to increase her organizational skills. She reported, *"This worked out well for me. Things just started surfacing. I just received my Learning Skills Assessment results. There are just strengths in all these areas; my memory improved. I am more calm which gives opportunity for information to come out. It falls right out. The longer I had to wait to think, the more difficult it was to retrieve. My pitch changed. I wasn't hitting notes before, but now my pitch is good. There is an awareness of waiting for others to speak. My verbal impulsivity is controlled. I am listening better. I was left ear dominant, and now I am putting my phone to the right ear. There was a little discomfort, but now it is more comfortable. When I started listening my [volume] level was 8 and it was not loud enough. Now - I was probably deafening all my senses - after three weeks it was at 6, and I challenged myself to 5. Some CDs I couldn't hear at 8, I now like at 5.*

My organization has improved. I am thinking through what I am doing. No medication or therapy could have done that for me. As embarrassing as it is to say, people would say, 'You don't know when to stop.' I always kept on talking. It is really about organizing information. Now I enjoy my quiet time of driving home. Before I used loud music to block out my thoughts."

M's memory skills improved, and her air conduction profile showed that she was listening effectively at a lower level of sound input.

Test	Pre-Test	Post-Test
CAB Visual Construction	93%	100%
CAB Auditory Construction	93%	100%

H, female, 50. H shared that she wanted to reduce her stress level, improve her auditory memory and organizational skills, and reduce fatigue.

H experienced a tangled TLT profile. It was apparent that she was more likely focused inward and listening to her own thoughts more intently than external input. There was a major shift in her listening profile after the program. This showed in her assessment information as well.

Test	Pre-Test	Post-Test
CAB Visual Construction	86%	86%
CAB Auditory Construction	71%	86%

She reported on the effects of the program: "I am listening to the CDs to do the grading and work for my classes. I am more relaxed doing a stressful task. There is lots going on in my life, but I have confidence. I am more centered, and feel that I am thinking clearly. When I first started doing the Learning Ears part, I couldn't repeat the three words. It was so frustrating, and I refused to do it for a long time. Now, it is no big deal. In my teaching, I normally speak really fast, as a teacher. I talk too fast. This year the students reported that they felt more connected. They told me they enjoyed the class. I think it was my centeredness. It's not just affecting me, but everyone around me.

H, female, 42. H had a head injury three years ago. She experienced memory issues, attention difficulty and found that she was sound sensitive. She felt that a lot of activity around her was irritating.

After her listening program, H's TLT showed an untangling of the air and bone conduction profiles. Her auditory memory skills improved significantly, and she was pleased with her progress as reflected in her comments.

"I have more energy when I come home after a long drive to Salinas. I don't want to sit around and watch TV. My brain still wants more. Now I get up at 5 A.M. to read the paper every morning. I didn't do that before. It's nice to read the paper.

I talk to my husband more and we work things out. Confrontation is not a big issue anymore.

I am on the computer every day. My spelling is getting better. I am hearing the syllables. My creativity has gotten better. I am seeing images and being real creative. I am a real emotional person; I realized that when the CD changed my mood.

Test	Pre-Test	Post-Test
CAB Visual Construction	79%	79%
CAB Auditory Construction	50%	93%

N, male, 37. N a Vietnamese college instructor experienced considerable difficulty in using English in his instruction. During the programming his language expression increased significantly, and improvement in memory skills and reading was noted.

Test	Pre-Test	Post-Test
CAB Visual Construction	43%	86%
CAB Auditory Construction	86%	93%
MDT Level C Real Words	70%	80%
MDT Level C Nonsense Words	45%	80%

N shared his thoughts as follows.

"I would like to take this opportunity to share with you what I have gained in the Samonas program that I participated in the last three months. Three special areas I have improved are self-control, self-correction, and self-confidence. During the last three months, I noticed that I paid more attention to my rate of speech. I start to speak slowly while having a conversation with some ones around me.

Speaking slow is allowed me to find a word that I am going to use in a sentence. Not only does a slow rate of speak allow listeners to understand me well, but it also gives me time to correct my grammatical sentence during my speech.

In the recent weeks, for example, some of my friends have told me that they understood clearly because they noticed I began to speak slowly and completed my sentences while speaking with them. They said this matter did not happen to me before, and it just occurred for the last four weeks.

Today I feel more confidence while speaking to anyone around me because I certainly do not worry that listeners will ask me 'What?' during conversations with them.

This situation has not happened to me the last two weeks because most listeners understood me well and did not have any problems on my pronunciation. They also told me my grammar and pronunciation were clear and they understood me better than other non-native speakers. Having effectiveness from the Samonas program, I raise my selfconfidence up because I do not worry to speak with anyone around me regarding my grammar and pronunciation. I also see a lot of change with me the last four weeks. My students started having conversations with me regularly in and outside of class because they feel more comfortable and understand me without using a word 'Pardon me, please repeat what you just say.'

SUMMARY

Sound Therapy showed special benefits including:

- Feeling happier
- More tolerant of others
- Increased creativity
- Motivation and energy increased
- Auditory memory improved

- Listening improved
- Auditory sensitivity reduced
- Word Attack improved
- Spelling improved
- Pitch discrimination developed
- Singing in tune
- Family relations improved
- Anger reduced
- Comprehension developed
- Attention focus developed
- Verbal language improved
- Visual memory Improved
- Confidence developed
- Goal-direction clarified
- Dyslexic profile improved
- Centered feeling identified
- Clarity in understanding created
- Patience improved
- Response speed increased

Successful replication of results previously achieved in one-on-one clinical settings were achieved in a higher education classroom setting with this project. Pre- and post-test assessments showed measurable changes in short-term memory, improved speech and language skills, and better focus and concentration. In addition, students reported the following self-observations:

IMPLICATIONS

The results of this research have been so positive that the Supportive Services and Instruction Department is committed to continuing this program, and we are actively pursuing funding sources to expand this project.

Given the significant impact demonstrated in this study on the fundamental listening skills critical for development of reading, writing, learning and communicating, students with disabilities now have an increased opportunity to achieve the goal of attaining a college education. Furthermore, Samonas / Listening Intervention would benefit any student desiring to enhance his/her information processing abilities and communication skills. Possibilities for collaboration are limitless in such areas as speech, ESL, music, and drama.

ACKNOWLEDGEMENTS

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Without Joan this project would never have manifested. In addition, her warmth, enthusiasm and passion for learning elevated this project to a level that inspired all.

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