

Learning Ability

Grace came to Brain Harmony reading 4 years below her peers. She had difficulty spelling and retaining information taught to her the previous day. Grace rarely initiated conversations with others and she would often shut down in group situations. Additionally, Grace would only walk on her toes and in new environments and skip and pace around the room.

"You were the first ones who gave me an answer to unlock my child. It was like she was trapped and you let her out. I can't believe the difference. After only 6 months, she is reading at my level. Thank you Brain Harmony!" - Grace's Mom



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...because connecting matters

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Brain Harmony...proven results

Why Brain Harmony?

With over 20 years' experience, Brain Harmony has created unique protocols when combined with Integrated Listening Systems' products, which produces accelerated results. This combined approach is based on changing our brain – we can essentially rewire it through specific and repeated stimulation, a concept known as neuroplasticity. As in building strength and endurance with physical exercise, we can also build neurological pathways and synaptic activity at any age or in any condition.

It's All About the Results

At Brain Harmony we pride ourselves on delivering results and we will work very hard to help your family. Our programs are customized to fit your unique needs in the convenience of your own home. Traveling to a clinic is not required.

Generally, we see positive results for our friends with most neurodevelopmental needs with two modalities:

The Safe and Sound Protocol (SSP) is a 5 day therapeutic modality that reduces auditory sensitivity but, more importantly, calms the parasympathetic nervous system. Often we find our friends with any type of neurodevelopmental issue, large or small, are in a constant state of fight or flight. They are constantly on edge or anxious. By starting with SSP, we calm the social and emotional state, thereby allowing our friends to be receptive to therapeutic modalities. Interestingly, when we "calm the nerves" we can see many gains after SSP. Gross motor and fine motor skills, eye contact, engagement and reduction of auditory sensitivities may all be exhibited, after listening for one hour a day for 5 days consecutively. The total cost of SSP is \$395 and includes a self-administered pre test, post test, shipping to and from, and video conference support with a licensed therapist.

Focus System – *this is the real brain changer.* iLs retrains areas of the brain involved in learning, communication and movement. With this system, a listening program is crafted specific to you. The Focus System comes with over 240 hours of therapy. We will support your family listening through video conferencing with a licensed therapist. Typically, the cost of this program is \$260 a month administered as a month to month lease that you may opt out of at any time.

Proven Results and Satisfied Families

Our web site contains a knowledge library which includes research, case studies and family success stories. Our program, when combined with these tools, changes standardized scores. We receive family reports of success on a daily basis. We have found no other modality that produces outcomes as quickly and efficiently as iLs' products.

Process

We ship your equipment and assign a licensed therapist. Included in your purchase is 6 hours of coaching via video or telephone conferencing. Your therapist will also be available to you via text and email for any questions or concerns throughout your listening program. The therapist will guide you step by step through using the equipment and finding the program that will best suit your needs.

How do I get started?

Call **Brain Harmony** at **888-272-4650**, to speak with a trained specialist today!

Learning Ability

The acquisition of reading, writing, math and other academic skills is dependent upon a normally-developed nervous system. Communication between the brain's two hemispheres and integration of the sensory input from the eyes, ears and motor systems must be intact for adequate response to intervention. By providing appropriate auditory, visual and vestibular stimulation, Brain Harmony's programs accelerate maturity of the nervous system thereby improving the ability to learn.

Study:

Data on 44 students was collected to measure the effect of iLs on students with learning difficulties while attending Sylvan Learning Center. The students completed Sylvan Math and reading tests prior to and after the iLs programs. The iLs Measure of Foundational Abilities (MFA) an on-line assessment was also completed pre and post.

The students ranged from 3rd-12th grade and represent a variety of learning difficulties, including reading, auditory processing and attention deficits. Results showed that on average, student's math and reading scores improved by approximately 1.2 years after the 40 hour program. Average improvements on the MFA categories were as follows: Social/Emotional (54%), Auditory/Language (48%) and Organization, Attention and Cognitive (54%), Motor Skills (37%) and Sensory (34%).

"This is going really great! My son is reading really well these days. He has had a lot of success. He is taking more accountability and pride for things. He is taking more ownership in how he factors in what will happen. He has moved through the 4th grade workbook and are almost done with his 5th grade workbook!" – Mom of home schooled client with ADHD, Dyscalculia, Dysgraphia, Dyslexia and High Functioning Autism.



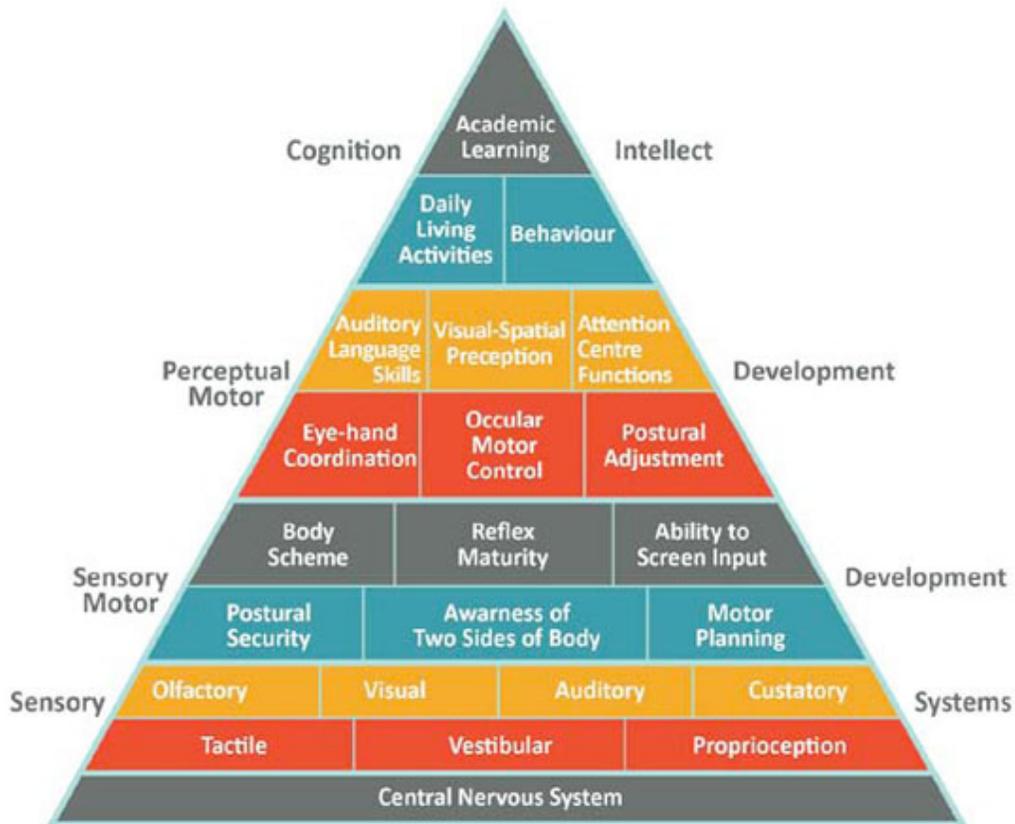
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PYRAMID of LEARNING



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Often, our educational interventions are putting a roof on a weak foundation. The acquisition of reading, writing, math and other academic skills is dependent upon a normally-developed nervous system. Communication between the brain's two hemispheres and integration of sensory input from the eyes, ears and motor systems must be intact for adequate response to intervention (RTI). However, efficient processing doesn't occur in an immature nervous system. By providing appropriate auditory, visual and vestibular stimulation, the nervous system matures at an accelerated pace. This ability of the brain to change in response to stimulation is known as "neuroplasticity." Brain Harmony builds a solid foundation for learning and communicating through repeated, gentle stimulation of the following systems:



VESTIBULAR

The vestibule in the inner ear plays a key role in our balance as well as our ability to modulate sensory input. In terms of learning and behavior, vestibular and proprioceptive (see below) input tends to help children and adults become more regulated. Once regulated, they can more easily attend to higher brain functions such as reading, writing and expressive language. The balance activities and bone conduction stimulation provide different types of vestibular stimulation in each session.

Targeted Skills: coordination, balance, focus, self-regulation

AUDITORY

The classical music has been processed to emphasize different frequencies per therapeutic objectives. The goal is to train the ear and the brain to analyze and process sound more quickly and accurately. For example, the Sensory Motor Program for those with autism and/or sensory processing challenges emphasizes a range of low frequencies which influence balance, rhythm, coordination and body awareness. The Reading/Auditory Processing Program focuses on the mid-range frequencies of the English language to train one's sense of pitch discrimination. As a result of repeated listening, the vestibulo-cochlear system improves its ability to transfer auditory information to the brain. Additionally, the bone conduction delivery in headphones provides a unique stimulation to the vestibular system.

Targeted Skills: pitch discrimination, auditory processing, reading, mood, concentration and balance.

VISUAL MOTOR

Activities include visual tracking and visual perception activities in sessions as advised by your therapist. The simultaneous exercising of these skills with balance and auditory training seems to have an exponential effect on reading and other related skills.

Targeted Skills: reading, hand/eye coordination, balance, sports

PROPRIOCEPTIVE

By improving the sense of one's own body – where it is, how to control it, how to move it – to the point where we don't need to think about it, we are freeing up the brain to focus on higher order activities. Children and adults who improve their proprioceptive abilities are able to approach learning and communication tasks in a more relaxed and regulated manner. We build proprioceptive abilities with specific exercises into your sessions.

Targeted Skills: attention, calm, athletics, coordination, daily movement, confidence



PARASYMPATHETIC

The autonomic nervous system (ANS) controls many organs and muscles that work in an involuntary, reflexive manner. The ANS is important in 2 situations: emergencies that require us to “fight” or to take “flight” and non-emergencies that allow us to “rest and digest.” The part of the ANS which governs the latter is the Parasympathetic Nervous System (PNS). The programs you will be using provide auditory programs that stimulate the PNS through the vagus nerve (afferent fibers in the outer ear). Many children and adults beginning our programs are in a state of hyper-arousal, not far from “fight or flight.” The gentle stimulation of the PNS brings about a balance of the ANS which is reflected by increased calm and self-regulation.

Targeted Skills: behavior; ability to focus; the calm state which allows one to better focus on higher cognitive functions

CEREBELLUM

The cerebellum is 10% of the weight of the brain but it has 50% of the brain’s neurons. In computer terms, it’s our processor, receiving input from sensory systems and various parts of

the brain, and integrating these inputs to fine tune motor activity. Most neuroscientists agree it is involved in motor functions, cognitive functions such as attention and emotional functions such as regulating fear and pleasure responses. The repetitive activities provided by your therapist are believed to stimulate cerebellar function. Inputs from the visual, vestibular and auditory systems, session after session, train the cerebellum to become efficient at processing multi-sensory information.

Targeted Skills: motor control; “automaticity” (motor activities becoming automatic); processing

HEMISPHERIC INTEGRATION

Brain Harmony’s programs excel in many areas with this portion being some of the most powerful outcomes to date. Receptors in the body deliver sensory information to the brain (and vice versa). If these receptors and the pathways leading up to the brain are not working because they were damaged or did not develop properly, the activity level of the brain decreases and different areas of the brain may not communicate with each other properly. In addition, the right and left sides of the brain must be balanced in order to allow for proper communication to take place between the different areas involved in higher brain function. Cross-lateral activities require the almost constant transfer of information from one hemisphere to the other, “exercising” the bridge that transfers information, the corpus callosum.

Targeted Skills: processing speed, cognitive functions, emotional health



Case Study Amanda

- Clinicians:** Elizabeth Printz, OTR/L. iLs Associate
Carol Garner-Houston, OTR/L, Advanced iLs Practitioner
- Clinician's Discipline:** Pediatric Occupational Therapy
- Name of Organization:** Brain Harmony
- Diagnosis:** Developmental Delays, Ebstein's Anomaly, Accommodative Esotropia, Hyperopic Astigmatism of both eyes, and Auditory Processing concerns

Abstract:

At age 4, Amanda's family became concerned about her overall development so they sought advice from her pediatrician. Amanda's pediatrician assessed her fine motor skills and determined that she was developing well behind her peers. At the time, her parents were also concerned about Amanda being ready for Kindergarten.

She was brought to Brain Harmony for an initial Occupational Therapy evaluation. Her therapist expressed her concerns stating, "Amanda has low tone and hyperextended joints. She tries to get out of all upper body tasks due to a lack of coordination. Amanda also has poor balance, poor visual skills, and decreased auditory processing skills."

At the time of the initial evaluation, Amanda had disorganized sensory systems. She was unable to follow directions and express her wants and needs. She refused to touch or play with Thera-putty, slime, or Play-doh. Amanda would not engage in finger-painting as well, due to discomfort with texture and smell. When asked to complete writing tasks, Amanda would not perform them without having the therapist's hand on top of hers. Additionally, she displayed poor balance and awareness of body in space.

Therapeutic Goals:

The goals for therapy focused on:

1. Improve fine and gross motor tasks
2. Improve balance
3. Improve visual and auditory processing skills



iLs Program

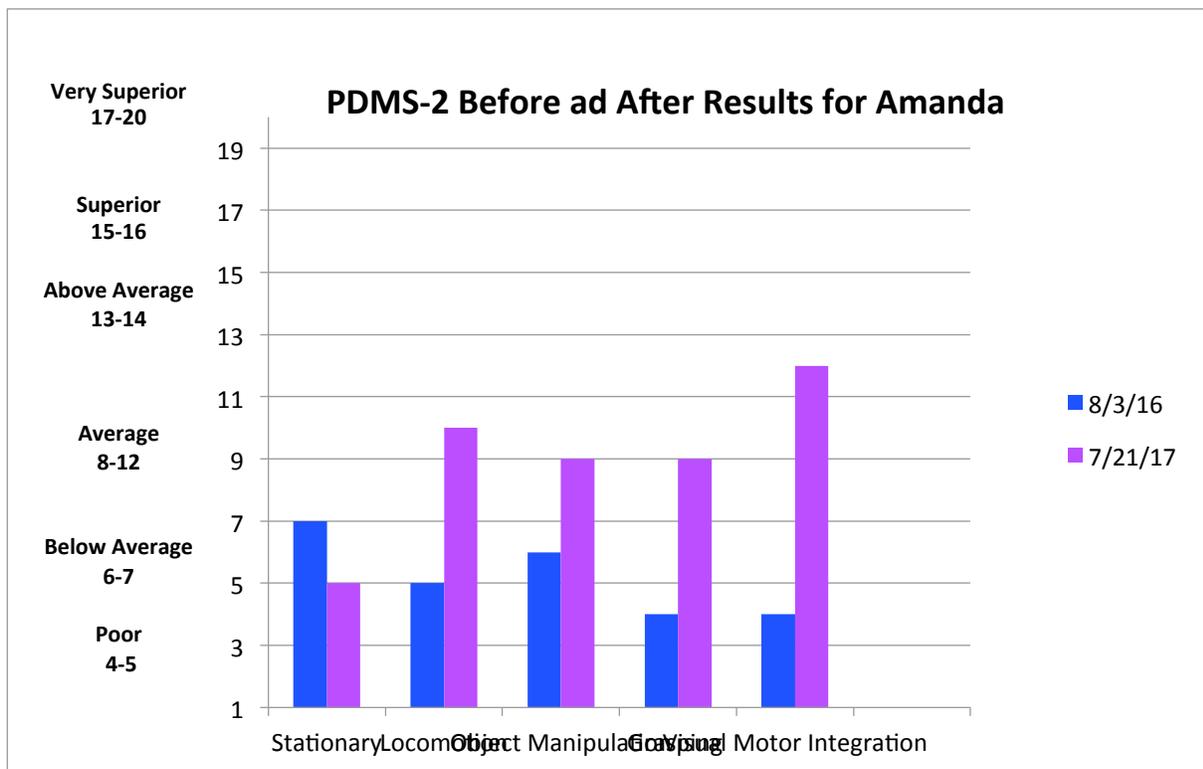
The treatment plan included occupational therapy treatment once a week for 1 hour at the clinic. Amanda completed sessions 1-39 of the Focus Sensory & Motor program. At the end of the year of therapy, the newly available Safe and Sound Protocol (SSP) was added.

Pre & post-testing:

The test used for both pre and post testing was the Peabody Developmental Motor Scales (PDMS-2). At the time of the initial evaluation, Amanda was 4 years and 11 months of age. At the time of the final reassessment, she was 5 years and 11 months of age. Bar graphs are included with pre & post scores.

PDMS-2

The PDMS-2 assesses the motor skills of children from birth through 5 years. At the initial evaluation, Amanda’s scores ranged between poor and below average. At the reassessment, Amanda’s scores increased to average in all categories except the stationary category, which she still tested below average.



**Therapist's Comments:**

Amanda began Brain Harmony very shy and very attached to her parent. After just a few months, Amanda easily transitioned away from mom to start her therapy sessions. She continued to need encouragement and assistance for non-preferred writing and upper-limb coordination tasks. She needed hand over hand for all writing activities and would act silly to avoid any ball activities (catching, throwing, bouncing, etc.) She advanced years in skill levels in less than a year of therapy at Brain Harmony. At discharge, she was able to copy sight words and independently write her name, the alphabet, and numbers. Amanda was catching and throwing a ball with ease. The most amazing outcome was how happy and excited she was about engaging in writing tasks. She has flourished into a happy, confident five-year old who is ready to take on Kindergarten.

Conclusions and Recommendations:

At the time of the initial evaluation, Amanda had difficulty transitioning from mom to therapist; she declined all writing tasks, and had hypersensitive sensory systems. After one year of services, Amanda gained years in skill levels. Not only did her transitions become smoother, she began writing on her own. Additionally, Amanda's visual, auditory, tactile, and vestibular systems improved. Amanda was able to follow verbal directions and verbalize all of her wants and needs. She had improved social skills, was more outgoing and showed more facial expressions. Amanda showed improved balance, body awareness and acceptance of different tactile stimuli.

Amanda's mother was pleased with the results of iLs, reporting, "Amanda is more outgoing and comfortable in new environments. She is able to write the alphabet, numbers 1-10, her name, and sight words. We are thrilled with the changes in our daughter!"

Amanda was discharged from Occupational Therapy treatments due to her scores in standardized testing being age appropriate. Amanda's therapist and family will agree that using iLs was a key factor in achieving these outcomes.

Co-Writer: Christine Fazzino, COTA/L, iLs Associate



Case Study Rosemary

Clinicians: Christine Fazzino, COTA/L; Carol Garner-Houston, OTR/L

Clinician's Discipline: Pediatric Occupational Therapy

Name of Organization: Brain Harmony

Diagnosis: Delayed Milestones in Speech and Fine Motor

Abstract:

Rosemary, a pre-kindergarten student, had difficulties with phonemic awareness, including difficulty pronouncing words. She also spoke quickly and in a soft tone, making her communication difficult to understand. Rosemary had challenges closing fasteners on her clothes and utilizing scissors. Rosemary's parents brought her to Brain Harmony for an initial Occupational Therapy evaluation due to their concerns with her speech and fine motor tasks.

Pre- and Post-testing measures were taken at school using the Florida Voluntary Prekindergarten (VPK) Assessment and the Discovery Education Assessment, which compares the child's progress in reading and math to her peers at her school and her peers throughout the school district.

iLs was used in conjunction with Occupational Therapy and Speech Therapy, and after 6 months, the client showed gains in performance including improved reading, mathematics, fine motor coordination, and self care.

Therapeutic Goals:

The goals for therapy included:

- 1) improve fine motor skills;
- 2) improve manual dexterity;
- 3) improve balance; and
- 4) increase the child's ability to care for herself.

iLs Program (program name, frequency, length, etc.):

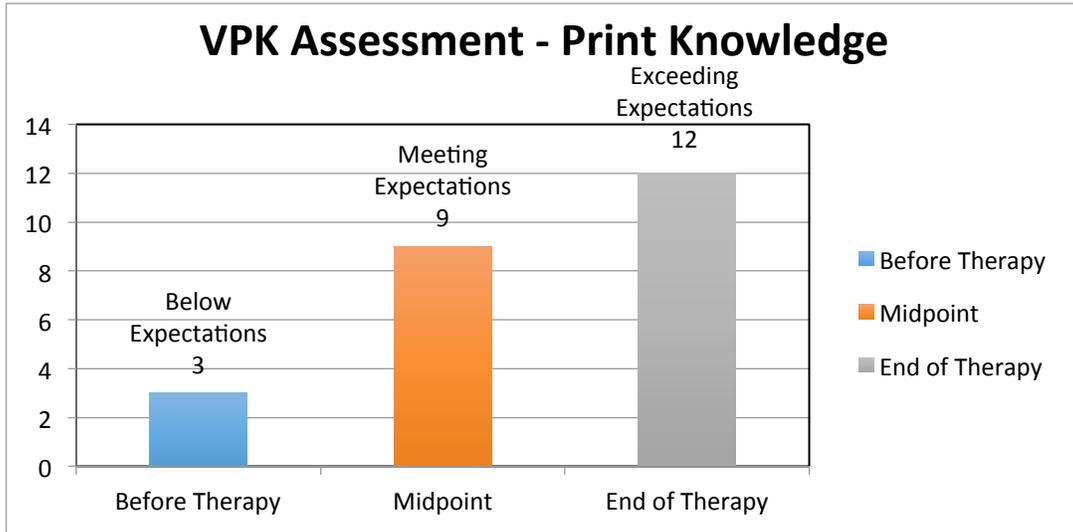
iLs was used for all occupational therapy sessions. Rosemary completed the Sensory-Motor program, sessions 1-25, then she completed the Reading and Auditory Comprehension program, sessions 10-30. ILs was used with therapy at a frequency of one session per week for one hour over a period of 6 months.

Pre-post assessments:

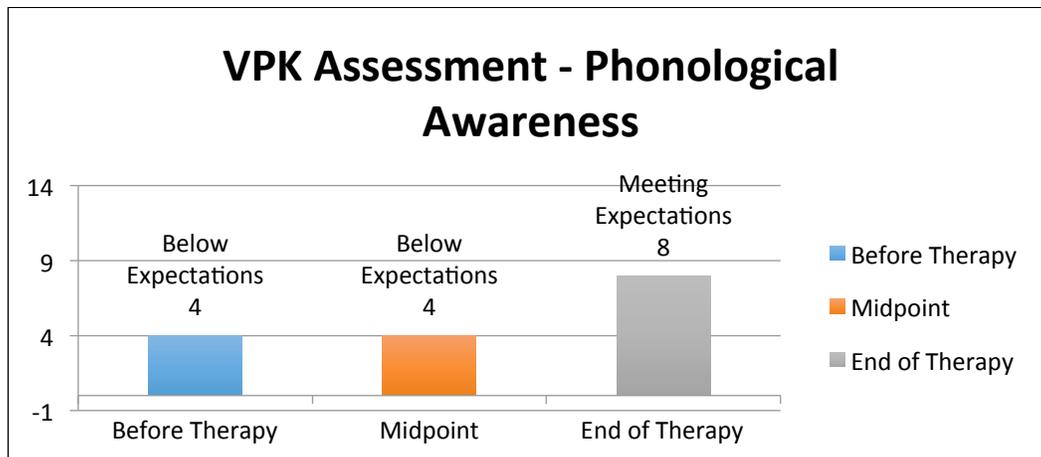
Rosemary completed assessments throughout her school year, including the Florida VPK Assessment and Discovery Education Assessment. The Florida VPK Assessment is an

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assessment given three times throughout the year to assess kindergarten readiness skills in the areas of 'Print Knowledge', 'Phonological Awareness', 'Mathematics', and 'Oral Language/Vocabulary'.

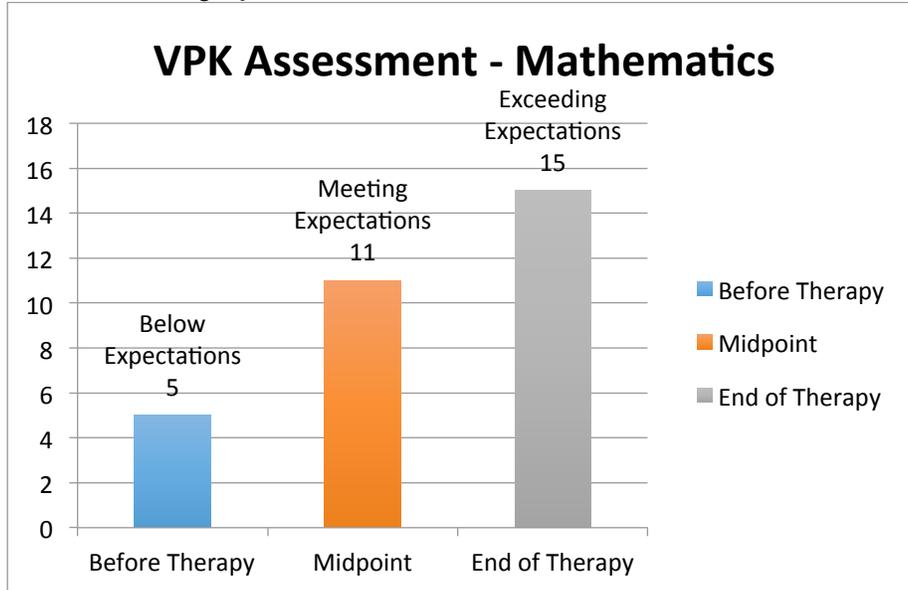


For the Print Knowledge measure, Rosemary started the school year below expectations. Over the course of therapy and iLs, she continued to expand her knowledge and ability to recognize the difference between letters and words, the sounds letters make, and upper and lower case letter names. By the end of the school year, Rosemary scored the highest possible score of 12, which placed Rosemary in the 'exceeding expectations' category.

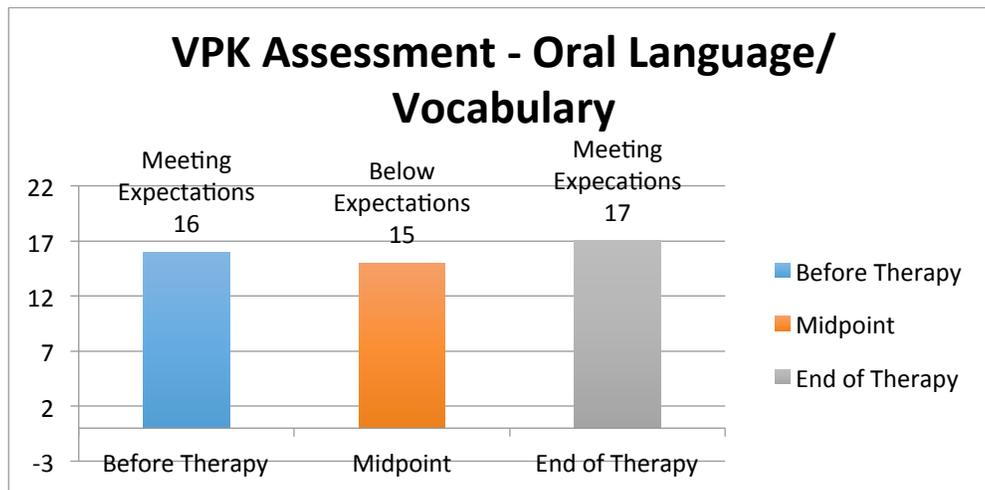


For the measure of Phonological Awareness, Rosemary started the year below expectations. She continued to expand her knowledge and her ability to manipulate different sounds in a

word. The maximum score for this measure is 15, her score of 8 places Rosemary in the 'meeting expectations' category.



For the measure in Mathematics, Rosemary started the year below expectations. She continued expand her knowledge in the areas of counting skills, numerical relations skills, and arithmetic reasoning skills. The maximum score for this measure is 18. Her score of 15 places Rosemary in the 'exceeding expectations' category.

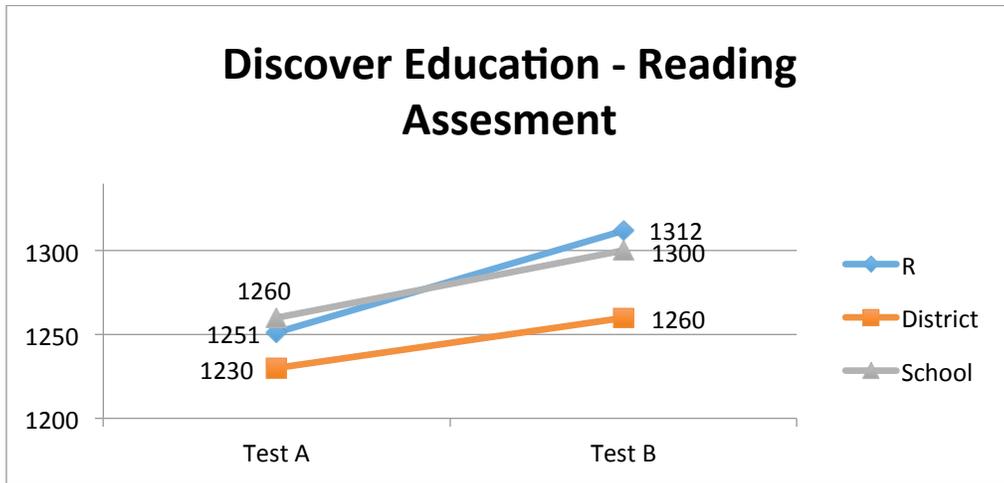


For the measure of Oral Language/Vocabulary, Rosemary started the year below expectations. She continued to expand her knowledge in the ability to express herself in words, understand language that is heard and her knowledge of age appropriate words and their meanings. The

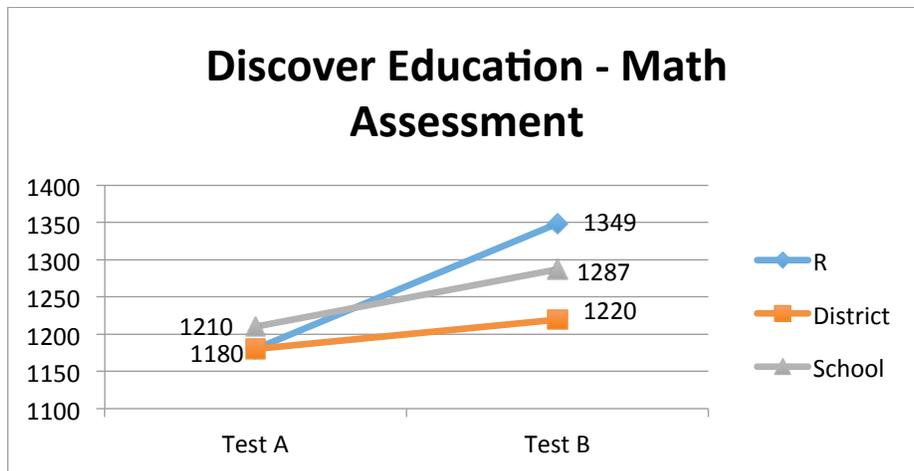


maximum score for this measure is 22. Her score of 17 places Rosemary in the 'meeting expectations' category.

The Discovery Education Assessment tracks a student's progress in Reading and Math at the beginning of the year to the end of the year in comparison to peers at her school and peers throughout the entire school district.



In reading, Rosemary started the year above the district's average and just below the school's average. At the end of the year, Rosemary's scores were above the district and school's average. The target achievement level for this assessment ranged from 1258-1335, which placed Rosemary below target achievement at the start of the year. By the end of the year, Rosemary scored in the upper end of the targeted achievement range.



This measure in Math, Rosemary started the year at the same level as the district and below the school's average. At the end of the year, Rosemary's scores were exceedingly above the district



and school's average. The target achievement level for this assessment ranged from 1211-1322, which means Rosemary is above the target achievement level.

Therapist's Comments:

Rosemary's mother came to us after her daughter's VPK teacher gloomily told her that she didn't expect Rosemary to pass Kindergarten. She couldn't remember names and sounds of letters; her speech was limited and hard to understand with a large percentage of speech in "baby talk". She had big blue eyes like a window into her heart. Rosemary knew something wasn't going right for her at school and her concern was manifesting with anxiety and passivity. Her mother and I knew how fragile she was at this juncture of development so we chose the home rental program of ILS so we could give her child organizing input on a daily basis instead of waiting for 1x week visits with OT. The family's listening diligence paid off and she became a leader in her class and was enthusiastically promoted to the next grade with above mastery in all areas including phonetics, writing and math. The joy of learning can be seen in her blue eyes thanks to iLs and OT.

Conclusions and Recommendations:

Overall, Rosemary made significant progress as shown by academic testing.

Rosemary was discharged from Occupational Therapy because her family moved out of the area; however, her parents were pleased with the progress that iLs in combination with therapy had on Rosemary.

Research

Early Intervention: a longitudinal study of reading and reading-related achievement of 64 students in kindergarten through second grade enrolled in the alpha program

INVESTIGATORS: J. Anne Calhoun, Ph. D. Educational Psychology, Department of Language, Literacy, and Sociocultural Studies

INSTITUTION: College of Education, University of New Mexico

DATE: September 3, 2009

RESULTS SUMMARY: Dr. Anne Calhoun, Professor of Language, Literacy, and Socio-cultural Studies, UNM/Albuquerque, obtained data based on the results of the pre- and post-PPVT-111 and Qualitative Reading Inventory Assessments administered to 32 students participating in the ALPHA Program, compared to a control group of 32 similarly developing peers in grades K-2. The ALPHA Program combines listening therapy with musical, visual, verbal, spatial/kinesthetic and logical modes of learning.

After the 3-month program, statistically significant gains in vocabulary and cognitive skills were made:

- **The test group gained on the average two grade levels in reading fluency and comprehension.**
- **Reading comprehension:** *The test group was able to respond correctly, on average, to 90% of the reading comprehension questions, as opposed to 25% among their control group peers.*
- **Reading accuracy.** *The test group made one-third the number of miscues in decoding in comparison to their control group peers.*
- **Reading fluency.** *Test group students read at twice the rate of their control group peers.*
- **Receptive vocabulary and cognitive skills:** *Statistically significant gains in receptive vocabulary and cognitive skills, according to a standardized measure, the Peabody Picture Vocabulary Test-III.*
- **Retelling ability:** *The test group could recall seven times more specific story-related information than their control group peers.*

"Taken as a whole, this analysis indicates that the students in the experimental group have improved in all categories associated with reading. This improved achievement is significantly greater (more meaningful) than the improvements of the control group peers. Overall the picture presented of the students in ALPHA is one that shows immense growth in cognitive, academic, and psychological areas." Professor Anne Calhoun, Associate Professor of Literacy, University of New Mexico/Albuquerque

STUDY SUMMARY: The following is excerpted from Dr. Calhoun's preliminary report.

Introduction

This report is the third in a series that examines outcomes of true longitudinal and cross-sectional cohort research design using an experimental and control group in a pre-test and post-test design at a small elementary school in a small city in the southwest region of the United States.

Students in kindergarten, first grade, and second grade were assessed on a number of measures including receptive vocabulary knowledge, letter name and letter sound knowledge, metalinguistic skill, reading components, motor skills, auditory assessments

Research

and "prosocial skills" (those skills which help students to relate in a positive manner to their peers, teachers, and the world).

The experimental groups, cohort one and cohort two, took part in a 12-week intervention that uses auditory sensory integration through music and free play structured through the materials available for manipulation by students. The control group participated in both in-school and after-school programs which addressed academic needs through instruction in specific academic areas.

The goal of the intervention for the experimental group is to allow students to fully develop their senses so as to better be able to attend to instruction and complete work in the classroom. The purpose of the study was to examine the relationship between auditory sensory integration and free play in developing a *whole child* who is prepared to learn fully in the classroom.

Discussion

This study was designed to examine the effects of one auditory/sensory integration intervention using a longitudinal, cross-cohort time-lag design with two experimental groups and two control groups. Using this design we could compare the effects of the intervention between time one and time two for two cohorts. One cohort of students in the experimental and control groups began in Fall 2005 while the second cohort began at the beginning of the second school semester in Winter 2006. In this way we could examine through replication the effects of the intervention as well as examine both the short-term and long-term effects within the Fall cohort.

It is interesting to note that, at the comparison at time three, the students in the experimental group compared to those in the control group (both cohorts combined) were younger in both grade and age, and that the experimental group was also made up of significantly more boys than the control group. Even with these differences, students in the experimental group retained significantly greater growth in a number of academic areas including phonemic awareness, reading tasks.

In addition, these improvements in reading were accompanied by improvements in auditory and motor skill tasks, with students in the experimental group making significant improvements in listening skills, and also improving their integration of body, language, and creativity skills.

In addition students in the total experimental group demonstrated stronger pro-social skills and better mental status than their peers in the control group at the time three testing. The findings that link better prosocial skills with earlier reading acquisition have also been explored by Miles and Stipek (2006).

The most striking findings in this study are the effectiveness of the intervention in raising experimental group students' reading-related scores. Students in the experimental group have gained on average about two years of reading level while their control group peers have gained, on average, a year or less.

In addition the growth in the experimental group students' ability to deal with their social world and to develop sound mental attitudes appears to have increased dramatically when compared to their control group peers. The longitudinal descriptions of growth demonstrate that this intervention has had very positive effects on a number of achievement-related and social skill variables.

Final Report: Dr. Calhoon's final report (75 pp.) is available upon request.

Research Data

Elementary school pilot study

A pilot study of iLs in the following institutions: WESTVIEW ELEMENTARY SCHOOL, ROCKY MOUNTAIN ELEMENTARY SCHOOL, THORNTON ELEMENTARY SCHOOL, COMPASS MONTESSORI SCHOOL

DATE: 2008-2009 School Year

PI LOT SUMMARY

A total of 20 public school children participated in a 3-month Integrated Listening Systems (iLs) pilot study during 2008-2009 school year. The results include pre- and post-study standardized test scores, as well as teacher comments. This was not a controlled study. Students who were receiving academic intervention or therapy were not taken out of those programs during the iLs pilot period.

The 20 children were selected by the teachers and administrative staff of the 4 participating schools. They were a combination of special education and general education students, some having IEPs and/or a formal diagnoses, others had neither.

INTERVENTION SUMMARY

The iLs program combines specific sound and movement protocols. The sound component is delivered via the iLs "Focus," a portable system which includes processed music loaded onto an iPod and air/bone conduction headphones powered by a mini-amplifier. Each child's iLs program was customized per their specific needs, e.g. sensory motor, attention, auditory processing, etc. All sessions were 1 hour in length, with 3-4 sessions per week. The programs were 3 months long and were implemented over a 10-week period. All pre- and post-program testing was done within 2 months of the iLs program. Each school used their districts' required standardized tests to measure change. The test results and teacher reports were collected by school staff and consolidated into the case study synopses below.

RESULTS SUMMARY

Teachers reported "significant improvement" in 19 of the children in one or more of the following areas: cognitive functioning, reading, independent task completion and behavior. "Significant improvement" is defined as either achieving substantially higher scores on post-program testing, being transitioned from special education to general education or overcoming a substantial attentional/behavioral deficit based on teacher observation. 100% of the teachers involved in the pilot study found the iLs program to be very effective. 100% of the teachers recommend iLs to other schools as a cost-effective remediation.

ROCKY MOUNTAIN ELEMENTARY SCHOOL: 5 students

"The thing that was really exciting was that all the kids saw huge gains. Especially in the visual perception tests, almost everyone's improvement was off the charts. The confidence change was also across the board. The kids seemed to begin to see themselves as learners whereas before the program many of them saw themselves as losers. Every single child in the iLs program has come and asked to do it again. Every single parent called or came in and has asked to do it again. It's been amazing."

Ilyne Engel, Rocky Mountain Elementary Physical Therapist and iLs Program Monitor

Boy, grade 1

Challenge/Diagnosis: LD in the area of reading comprehension, struggling in all academic areas, behavioral concerns in school and at home, very significant attention/focus problems;

Research Data

Program: iLS combined program for sensory motor and auditory processing;30 1-hour sessions total

Pre/Post Scores:

District Math Assessment – score of 55 > score of 89 (low average range to proficient)

*Beery Visual Motor -42%ile > 95%ile

*Beery Visual Perception – 19%ile > 73% (moderate delay to average range)

*Beery Motor Coordination - 37ile > 45%ile (moderate delay to average range)

Teacher/Parent Comments - About 1month into the i s program, the Reading Intervention teacher, who was unaware of iSL, commented to the classroom teacher that this child seemed more focused and ready to learn. The teacher also commented that his reading change was dramatic, going from being a non-reader to reading better than his peers.

Girl, grade 1

Challenge/Diagnosis: not progressing at same rate as peers; concentration and academic problems

Program: iLS combined program for sensory motor and auditory processing;30 1-hour sessions total

Pre/Post Scores:

District Math Assessment – score of 41 > score of 82 (low average to proficient)

Writing – score of 4 > score of 10 (below grade level to at grade level)

Beery Visual Motor -87%ile > 94%ile

Beery Visual Perception -19%ile > 90% (moderate delay to average range)

Beery Motor Coordination -27%ile > 87%ile (moderate delay to average range)

Teacher/Parent Comments: Teachers report significant changes in reading, writing and math as evidenced by student's Beery test score improvement in Visual Perception and Motor Coordination. Her concentration in class is no longer a problem.

* One of the basic aspects of an individual's ability to think and know (cognition) is how one is able to perceive certain stimuli. Assessing perception skills-how individuals may respond to things they see, hear, and touch-is, therefore, a basic part of assessing cognitive function. The Beery-Buktenica Test, also known as the Developmental Test of Visual-Motor Integration or VMI, measures these perception skills. It's designed to identify deficits in visual perception, fine motor skills, and hand-eye coordination. It may be used to diagnose cognitive development disorders in young children through an analysis of visual construction skills.

Boy, grade 4

Challenge/Diagnosis: LD in the area of reading (2 years behind)

iLS Program: iLS combined program for sensory motor and auditory processing;30 1-hour sessions total

Pre/Post Scores:

BRI Reading – 2.0 > 3.0 (2-years behind to 1 year behind)

Beery Visual Motor -47%ile > 63%ile

Beery Motor Coordination - 53%ile > 59%ile (moderate delay to average range)

Teacher/Parent Comments: Student gained one year in reading test scores and his behavior was no longer a problem in the classroom.

Boy, grade 3

Challenge/Diagnosis: Autism

iLS Program: Sensory Motor program; 60 1-hour sessions

Pre/Post Scores:

PALS Reading – score of 2.3 (below grade level) > score of 3.6 (on grade level)

Beery Visual Motor – 42%ile > 84%ile (average to above average)

Research Data

Beery Visual Perception -4%ile >34% (significant delay to average range)

Beery Motor Coordination -9%ile >68%ile (significant delay to average range)

Teacher/Parent Comments: Teachers comment that student made major changes during the 3-month iLS program, only some of which are reflected in his academic scores. His reading comprehension went from significantly delayed to average. Unable after trying for 2 years to tie his shoes, by the 8th session of iLS he wants to tie his shoes and does so correctly 4 times out of 4. Teachers and parents comment on a dramatic change in his sense of empathy – he now has genuine concern for other people and things – and he is much calmer and more relaxed. The changes have enabled the student to participate in class more effectively, develop relationships, and given him more confidence. His mother has signed up for iLS training with the hope to help others like her son.

Boy, grade 2

Challenge/Diagnosis: LD in the area of speech and language

iLS Program: iLS combined Sensory Motor and Auditory Processing program; 30 1-hour sessions total

Pre/Post Scores:

Dist. Math Ass. – score of 33 > score of 69

Writing – score of 4 > score of 10 (below grade level to grade level)

Beery Visual Motor -9%ile >39%ile (significant delay to average range)

Beery Visual Perception -2%ile > 58% (significant delay to average range)

Beery Motor Coordination -10%ile > 37%ile (significant delay to average range)

Teacher/Parent Comments: For 3 years prior to iLS he showed no change in his Beery tests, remaining in the 2-3% range. During the 3-month iLS program he went from "significantly delayed" to the "average range" in Visual Motor, Visual Perception and Motor Coordination. Teachers report a significant improvement in his self-control, concentration and self-esteem.

THORNTON ELEMENTARY: 4 students

"We've had excellent results using iLS with a wide variety of kids – learning difficulties, processing, reading, etc. It's a structured way to provide a variety of gross motor activities, which is hard to do in a school with limited resources. The fact that iLS can be implemented by a para-professional or a parent is also important in terms of school resources."

Jackie Taylor, Thornton Elementary Occupational Therapist

Boy, age 8

Challenge/Diagnosis: ID in the area of reading comprehension possibly due to an auditory processing disorder

Program: iLS combined program for sensory motor and auditory processing; 30 1-hour sessions total

Pre/Post Scores:

Woodcock Johnson Auditory/Visual Learning gained 1 year 11 months

Woodcock Johnson Retrieval Fluency gain of 2 years 6 months

Woodcock Johnson Decision Speed gain of 3 years 7 months

District Reading Assessment (DRA): Gain of 1 year in reading ability

Teacher/Parent Comments: Teacher reports the child made significant gains in reading. After being a beginning reader for three years, he started to accelerate his learning rate over the four-month period, going from reading mostly books with a pattern to decoding and comprehending more difficult material.

Boy, age 9

Challenge/Diagnosis: ID in the areas of written expression and reading comprehension; suspected APD

iLS Program: iLS combined program for sensory motor and attention; 30 1-hour sessions total

Research Data

Pre/Post Scores:

Woodcock-Johnson Auditory/Visual gain of 1 year 10 months

Beery Developmental Test of Visual-Motor Integration (copying designs) went from 18%ile to 48%ile

District Reading Assessment (ORA) - Gain of 1 year in reading comprehension over 4 months

Teacher/Parent Comments: Teachers report dramatic change in reading comprehension, quality and quantity of writing as well as verbal participation in class. Student is still receiving special education services and performing slightly below grade level in most subjects, but his ability to sit in class and attend is much improved.

Boy, age 5.5 years

Challenge/Diagnosis: general education student selected for the pilot because seemed to have reached a plateau in learning and pre-reading skills; also showed sensory integration deficits

iLs Program: iLs sensory motor program; 30 1-hour

sessions Pre/Post Scores:

Woodcock-Johnson Auditory/Visual gain of 3 years 5 months

Woodcock Johnson Decision Speed gain of 3 years 3 months

Beery Developmental Test of Visual-Motor Integration (copying designs) went from 12th to 19th percentile (deficient range to below average)

Scores in letters, sounds, math and writing began at lowest score possible and ended at grade level; now writes as many as 7 sentences at a time using sounds.

Teacher/Parent Comments: Teachers report significant improvements in learning ability due to increased ability to focus and concentrate, task on task. Math, reading and writing skilled also improved

Boy 2, age 5.5 years

Challenge/Diagnosis: general education student selected for the pilot because seemed to have reached a plateau in learning and pre-reading skills; also showed sensory integration deficits

iLs Program: 30 session iLs sensory motor and attention combined program

Pre/Post Scores:

Woodcock-Johnson: showed 6-12 month gains in Auditory/Visual, Decision Speed and Pair

Cancellation **Teacher/Parent Comments:** Teacher reports improvement in ability to follow

instructions, auditory memory, reading and writing; he can now follow instructions given to entire group.

COMPASS MONTESSORI SCHOOL - 7 students

"It was interesting in that we saw huge behavioral and/or academic changes in all of the children in the program. Changes occurred for some children immediately, others not until the end of the program. Those with emotional and self-regulation issues were able to make friends better once they became calmer, which in turn helped their self-confidence. Those who improved academically were so proud of themselves and their newfound abilities that they also became more self-confident. There was some frustration along the way as the kids went through their changes, but in the end it was quite a success. Of course the teachers and parents were really impressed with the results."

Ann Webb, School RN and iLs Program Monitor

Boy, age 5

Challenge/Diagnosis: attention/behavioral and reading problems; parents were asked to have student evaluated for possible sensory integration problems

iLs Program: iLs combined program for sensory motor and attention; 30 1-hour sessions total

Pre/Post Scores: Too young for standardized testing.

Teacher/Parent Comments: fewer behavioral issues at school, reading at K level, better focus; teacher informed parents an evaluation is no longer necessary, behavior is fine now

Research Data

Boy, age 11

Challenge/Diagnosis: behavioral difficulties at school

iLS Program: iLS combined program for sensory motor and attention; 30 1-hour sessions total

Pre/Post Scores: CSAP scores (Colorado Student Assessment Program) still pending

Teacher/Parent Comments: began sleeping and eating better during program, less irritable; parents and teachers have had no further social or scholastic challenges with student since completing the program

Boy, age 9

Challenge/Diagnosis: perceptual communicative disorder; behavior deteriorates when frustrated, esp. with writing;

iLS Program: iLS combined program for sensory motor and auditory processing; 30 1-hour sessions total

Pre/Post Scores: CSAP scores (Colorado Student Assessment Program) still pending

Teacher/Parent Comments: Parents and teachers report that mood swings have leveled out, his handwriting and general attitude are much improved. Student found that the iLS program helped him get control of his emotions, which changed his ability to make friends and get along with others.

Toward the end of the program, he would ask his teacher for the iLS headphones when he felt himself getting upset.

Girl, age 11

Challenge/Diagnosis: LO in the area of reading and auditory processing; showed deficits in organization, writing and motor skills

iLS Program: iLS combined program for sensory motor and auditory processing; 30 1-hour sessions total

Pre/Post Scores: Follow up standardized testing not available due to child's illness during the end of school year testing.

Teacher/Parent Comments: After 10 sessions, student's handwriting was unrecognizable by her parents and teachers. Her organization is much improved both at home and at school. Prior to program she hated reading, now she reads books in her free time with no prompting. Parents also comment on her improved organizational skills.

Boy, age 11

Challenge/Diagnosis: attention deficits, not reading, sensory integration issues, background noise challenge, difficulty staying on track in conversation (auditory processing disorder symptoms)

iLS Program: iLS combined program for sensory motor and auditory processing; 30 1-hour sessions total

Pre/Post Scores: CSAP scores (Colorado Student Assessment Program) still pending

Teacher/Parent Comments: Student had a good program and saw very noticeable gains in his concentration and his processing abilities. He underwent an emotional period mid-program for a few days which caused concern among the teachers. (Note: a brief, 2-3 day, period of regressive behavior is not uncommon in iLS programs as one undergoes a 're-organization' period.) Teachers comment he is now more focused and better able to adapt to social situations. He is making friends more easily and feeling self-confident. Although he is acting at a more age appropriate level, teachers feel he could benefit from continuing iLS, especially the iLS Expressive Language program.

Girl, age 7

Challenge/Diagnosis: LO in the area of speech, prone to temper tantrums

iLS Program: iLS combined program for sensory motor and auditory processing; 30 1-hour sessions total

Pre/Post Scores: 98% improvement in reading fluency and comprehension and an 82%

improvement in vocabulary and oral language usage (DIBELS).

Research Data

Teacher/Parent Comments: Parents comment: "She has dramatically fewer temper tantrums at home and her speech is much, much better." Parents and teachers feel an extended iLs program would be beneficial.

Girl, age 9

Challenge/Diagnosis: behind grade level in reading speed and comprehension and in math; easily distracted

iLs Program : iLs combined program for sensory motor and auditory processing; 30 1-hour sessions total
Pre/Post Scores: 22% improvement in reading fluency and comprehension (DIBELS)

Teacher/Parent Comments: Her coordination is better, definitely reading faster and comprehending more; seems more grounded overall. Her teachers also commented on her improved focus. After two years of trying, was finally able to learn to ride her bike.

WESTVIEW ELEMENTARY – 4 students

"Based on our limited experience, I would definitely recommend iLs to schools and parents to try. We had 3 out of 4 children see great changes in their reading and writing, and the 4th child saw really nice improvement in her self-confidence which helped her all around."

Kelly Leonard-Johnson, Westview Reading Intervention Specialist

Note: Videotaped Interviews with Westview Elementary Kindergarten teachers can be seen at www.integratedlistening.com

Girl, grade 2

Challenge/Diagnosis: LO in the area of auditory processing

iLs Program: iLs Sensory Motor/Reading combination program of 30 1-hour sessions total

Pre/Post Scores:

Math Assessment – Before: 33%ile After :53%ile

PALS Reading (Phonological Awareness Literacy Screening) – Before: Pre-Primer C After: Primer

Teacher/Parent Comments: Student started the iLs program after mid-year testing and that is when her reading growth occurred. In addition to reading, her math ability improved. Nevertheless, she still has an IEP. The literacy teacher feels that the biggest changes for student occurred in her self-confidence. Her self-esteem grew immensely as a result of the iLs program, and this has improved her overall performance in and out of school.

Girl, Kindergarten

Challenge/Diagnosis: demonstrating deficit in learning and pre-reading skills

iLs Program: iLs combined program for sensory motor and auditory processing; 30 1-hour sessions total
Pre/Post Scores:

PALS (Phonological and Literacy Screening) summed score – Before: 31 After: 92

Math - Before: 33%ile After: 85%ile

OT Screening – Before: Yellow Zone (8/14 points) After : Green Zone (13/14 points)

Teacher/Parent Comments: Teachers report significant changes in auditory processing skills, including verbal and written expressive language abilities; student went from not being able to write a single letter to being able to write a 5-sentence story; changes in self-confidence and class participation also significant.

Research Data

Girl 2, Kindergarten

Challenge/Diagnosis: demonstrating deficit in learning and pre-reading skills

iLs Program: iLs combined program for sensory motor and auditory processing; 30 1-hour sessions

total Pre/Post Scores:

PALS (Phonological and Literacy Screening) summed score – Before: 17 (below average) After: 94 (proficient)

Math – Before: no data After: 94%ile

OT Screening – Before: Red Zone (5/14 points) After: Green Zone (13/14 points)

Teacher/Parent Comments: Teachers report significant changes in processing – verbal and written. Student became more self-confident and engaged in learning process. Increased ability to stay on task as well as to follow line of thought to completion (written and verbal).

Girl 3, Kindergarten

Challenge/Diagnosis: APD diagnosis

iLs Program: iLs combined program of Sensory Motor and Auditory Processing - 50 sessions

Pre/Post Scores:

PALS summed score – Before: 25 (below average) After: 105 (24 points above benchmark)

Math – Before: 16 out of 35 (below avg) After: 35 out of 39 ("proficient")

Writing Checklist - Pre: 4 out of 16 Post: 14 out of 16 (proficient = 12)

Teacher/Parent Comments: Student's parents took her to an audiologist when she was 6 because she was not progressing normally in reading and writing. The audiologist saw signs of APD (auditory processing disorder) and soon thereafter the student began the iLs program. Four weeks into the iLs program, she began writing individual letters and words; within 3 months she was writing complete stories with coherent story lines. Parents report that she began riding a bike for first time about 6 weeks into the iLs program. Her self-confidence and interest in interacting with others increased at a similar pace as her motor skills and processing. Student says that the iLs program makes her feel calmer and more in control. She came to associate iLs with her success in school and has since asked her mother if she could do repeat the program.

Research Summary

An Investigation to Evaluate the Benefits of the Integrated Listening Systems (iLs) in Primary/Early Elementary Classrooms (K-3): The Case of Valley View Academy in Northern California

Jeannie Dubitsky, Ed. D

Subcortical development is a factor in many learning problems in young children. The study investigated the impact subcortical support (Integrated Listening Systems, iLs) has with reading, auditory processing, behavior and visual motor skill development. Ten students were chosen for the case study to compare pre- and post-test scores, survey results and interview data. Students participated in three programs of iLs (Sensory Motor; Attention and Concentration; Reading and Auditory Processing) during their regular school day. Results showed similarities and differences among the students regarding physical, academic, social and emotional development after the intervention.

Generally, most students showed improvement in all areas evaluated after experiencing the iLs program. Improvements in performance included physical skills such as balance and eye hand coordination, as well as, increased ability decoding phonetically based words, recognizing words presented orally as isolated letter sounds, reading comprehension, auditory cohesion and visual motor development. For the majority of the subjects, each showed improved ability in reading, listening and handwriting. Students interacted socially and emotionally closer to the performance of their peers after iLs intervention.

Presently, the inclusion of iLs is deeply imbedded as an intervention program at Valley View Academy. This case study has presented new opportunities for learning for all students at the school.