

PILOT STUDY
THE LISTENING PROGRAM®
THORP SCHOOLS

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INTRODUCTION

The Listening Program® School Site Kit was implemented in the Thorp School District. This is a small rural district in central Washington state where I provide speech and language pathology services. The district's ethnicity is mostly white with the elementary, middle school and high school all housed in the same building. The Thorp community is primarily middle class with an agricultural base.

The Listening Program was started with four boys, a 3rd grader, two 6th graders and an 8th grader. These children were chosen due to the auditory processing deficits they demonstrated in the classroom and standardized test results. Three of these children are on academic IEP's. Two of them have speech and language IEP's as well.

In addition to pre and post checklists and weekly teacher assessment of changes she observed, each child was given the standardized Test of Auditory Perceptual Skills – Revised (TAPS-R) and the Screening Test in Auditory Processing Disorders (SCAN) prior to beginning and within one week following completion of The Listening Program.

The Program

Their Special Services teacher monitored the program daily with SLP intervention weekly. Children listened through Sony V600 headphones on Sony Discman CD players.

The following cycles were completed using the Condensed Schedule;

Cycle One - CDs 1-8, in sequence of one CD every 5 days, 40 days, 1x30 min (twenty hours)

Cycle Two - CDs 1-8, in sequence of one CD every 5 days, 40 days, 1x30 min (twenty hours)

Total Listening Time: Forty hours

STANDARDIZED TESTS ADMINISTERED

The primary purpose of the Test of Auditory Perceptual Skills – Revised (TAPS-R) is to assess various areas of a person’s auditory perceptual skill. The TAPS-R can also offer the examiner other information about the subject – such as their ability to understand various types of directions (key words and sequencing) accurate pronunciation of words (correct articulation), reasoning (using common sense in solving common thought problems), immediate recall of nonsensical/rote auditory information and discrimination of word sounds.

The TAPS-R subtests include:

- ✓ Auditory Number Memory – Forward (ANM-F), measures immediate recall of rote nonsensical sequential auditory information
- ✓ Auditory Number Memory – Reversed (ANM-R), measures ability to concentrate and to perform an activity requiring mental control
- ✓ Auditory Sentence Memory (ASM), measure ability to remember for immediate recall not only rote auditory information (but with some thought or notion of meaning), but also to recall this auditory information in sequence, this measures two processes
- ✓ Auditory Word Memory (AWM), measures the ability to recall a series of single words that are not meaningful
- ✓ Auditory Interpretation of Directions (AID), measures auditory memory and sequencing and focuses on a person’s ability to comprehend and understand and interpret information well enough to verbally express that they understand and can follow directions
- ✓ Auditory Word Discrimination (AWD), measures whole-word discrimination ability – making sound judgments.
- ✓ Auditory Processing (thinking and reasoning) (AP), measure a person’s ability to use common sense and ingenuity as well as insightfulness in solving common thought problems.

The purposes of the Screening Test in Auditory Processing Disorders (SCAN) include: to determine possible disorders of central nervous function by assessing auditory maturation, to identify children who may be at risk for auditory processing or receptive language problems that may require additional testing, and to identify children who may benefit from specific management strategies to improve auditory and language processing abilities.

The three SCAN subtests are:

- ✓ Filtered Words (FW), interpreting distorted speech
- ✓ Auditory Figure Ground (AFG), interpreting speech with environmental noises present
- ✓ Competing Words (CW), interpreting speech when presented to the two ears simultaneously

TLP PROGRAM RESULTS –KM

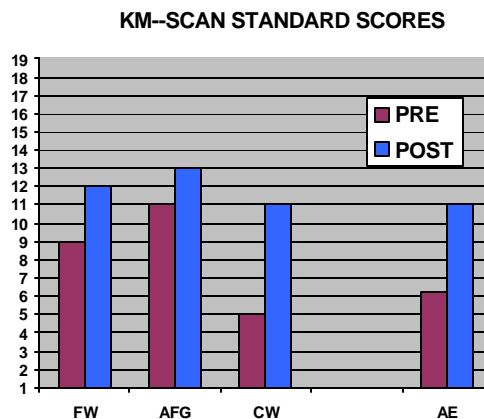
KM is an almost 13-year-old boy who is part native American. KM has been in the state foster care program most of his life and was recently adopted by his foster mom. He has an academic and language IEP. His special services teacher completed the pre Listening Checklist and she identified KM as: having difficulty with sound and word discrimination, recalling exact word usage, a very poor speller, difficulty summarizing a story, easily distracted, has difficulty focusing, poor attention span, poor left/right recognition, misinterprets questions or requests and requires repetition to adsorb content. I remember therapy sessions with KM when he would ‘tear up’ because he couldn’t tell me the middle sound in ‘fit’. He’d ask me, “why am I so stupid?”

This graph represents the changes in raw score, age equivalency, standard scores, scaled scores, and percentiles for each subtest of the TAPS-R. KM’s greatest gains were made in auditory sentence memory, auditory word memory, auditory word discrimination and auditory processing.

Test of Auditory Perceptual Skills - Revised (TAPS-R)												
CLIENT-KM	Pretest		Posttest		PRE		POST		PRE		POST	
	3/19/2003	6/6/2003	RAW	A.E.	SS	SS	SS	SS	SCALED	%tile	PRE	POST
AWM-F	14	18	<4.0	4.7	64	68	3	4	1	2		
AWM-R	10	10	7.4	7.4	84	84	7	7	14	14		
ASM	22	32	4.4	5.9	66	72	3	4	1	3		
AWM	10	14	<4.0	5.7	70	70	4	4	2	2		
AID	14	14	7.1	7.1	81	81	6	6	10	10		
AWD	30	34	5.0	8.1	74	100	5	10	4	50		
AP	26	33	10.7	>12.11	91	114	8	13	27	82		
SUM OF SS											36	48
AP QUOTIENT											60	74
% TILE RANK											1	4
MEDIAN AGE											5.0	7.1

This graph represents the changes in KM’s SCAN scores. His greatest gains were made in Filtered Words and Competing Words. He gained more than 5.0 years after 16 weeks of listening.

After completing the TLP, KM’s special services and regular classroom teachers noticed improved:



understanding, word and sound discrimination, word usage, improved right/left orientation, and improved direction following. He had an increased willingness to read, seemed less tense, and had improved coordination. She noted, “he really enjoys the listening.”

KM’s teachers also noted incremental changes of: increased self confidence, more animated, improved hand writing, better eye contact and increased attention after just 4 weeks. He showed even better eye contact, was being more appropriate with adults, more patient, spelling was easier, more motivated and improved organization after 8 weeks. KM was more thoughtful and expressive, had increased self-confidence, and a quicker response time after 12 weeks. Finally, he was initiating reading, spelling was easier, he seemed less overwhelmed, had increased energy, was asking more questions and improved punctuality after 16 weeks.

After completing the TLP, KM felt he was more responsible, speaking more clearly, more thoughtful and relaxed, and math, speller and reading were easier. He is smiling LOTS more!

TLP PROGRAM RESULTS –HG

HG is a 10-year-old third grader with an academic IEP. His special services teacher completed the pre Listening Checklist prior to initiating the TLP and identified these difficulties: tires easily, difficulty completing assignments, not focusing, misinterpreting directions, poor sound and word discrimination, reading aloud was a challenge, difficulty summarizing a story, poor organization, low motivation, difficulty making judgments and thinks most people talk too fast.

This graph represents the changes in raw score, age equivalency, standard scores, scaled scores, and percentiles for each subtest of the TAPS-R. HG’s greatest gains were made in auditory word memory forward and reversed, auditory sentence memory, auditory interpretation of directions, auditory word discrimination and auditory processing (thinking and reasoning).

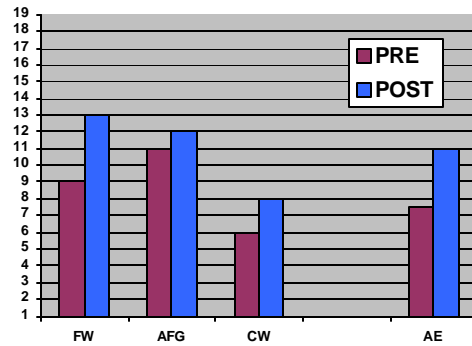
Test of Auditory Perceptual Skills - Revised (TAPS-R)												
CLIENT–HG	Pretest 1/29/2003	Posttest 6/6/2003	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
	RAW		A.E.		SS		SCALE D		%tile			
AWM-F	24	28	6.1	7.1	82	85	6	7	12	16		
AWM-R	7	10	5.1	7.4	85	89	7	8	16	23		
ASM	66	75	10.4	11.7	103	106	11	11	58	66		
AWM	18	18	7.1	7.1	90	88	8	8	25	21		
AID	14	22	7.1	9.9	88	98	8	10	21	45		
AWD	28	35	4.5	12.10	61	106	2	11	1	66		
AP	23	30	9.3	12.11	95	114	9	13	37	82		
SUM OF SS											51	68
AP QUOTIENT											78	98
% TILE RANK											7	44
MEDIAN AGE											7.1	9.9

This graph represents the changes in HG's SCAN scores. His greatest gains were made in the Filtered Speech and Competing Words subtests. He improved more than 3.5 years in just 16 weeks of listening.

After completing 16 weeks of the TLP, his teachers noticed improvements with interpreting directions and requests, better focusing, improved short term memory, sound discrimination, vocal quality and speech fluency, reading aloud, summarizing, organizational skills, social skills, completing projects, setting goals and motivation.

HG's teachers also noted these incremental changes: improved eye contact, better focusing and attention, asking more questions, improved punctuality, and improved social interactions 10 weeks. He was more relaxed and speaking more clearly and talking more, improved posture, better handwriting, seemed less overwhelmed and more relaxed and improved oral reading in just 12 weeks. And finally, less wiggly, speaking more clearly, improved mood, more caring and relaxed, improved focus, and improved attention span after just 16 weeks. His teacher commented that, "he really enjoys the listening and this is the first time I've seen him take the initiative to complete a project (the listening)."

HG-SCAN STANDARD SCORES



TLP PROGRAM RESULTS-AM

AM is an 12-year-old Hispanic boy. AM is in the foster care program. He has been living with the same foster family for several years. His foster family also cares for some of AM's brothers and sisters. Spanish was his first language but English is now his primary language. He is currently on a and speech IEP. His regular classroom teacher completed the pre Listening Checklist prior to his beginning The Listening Program.

He reports some difficulty focusing, understanding directions or requests, poor sound discrimination, poor short term memory, needs to read material several times to absorb content, has difficulty recalling exact word usage, summarizing a story, relating isolated facts, messy handwriting, poor ability at making good judgments, has a poor self image and low frustration tolerance.

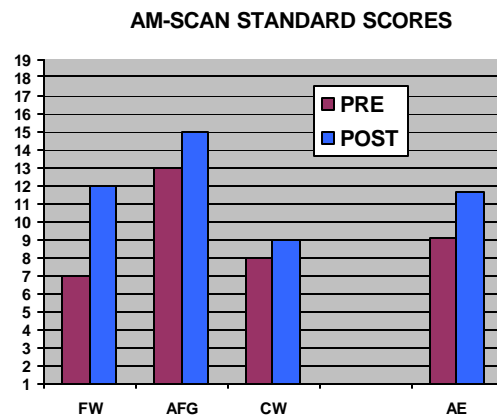
This graph represents the changes in raw score, age equivalency, standard scores, scaled scores, and percentiles for each subtest of the TAPS-R. AM's greatest gains were made in auditory sentence memory, auditory interpretation of directions, auditory word discrimination and auditory processing (thinking and reasoning).

Test of Auditory Perceptual Skills - Revised (TAPS-R)												
CLIENT-AM	Pretest		Posttest		PRE		POST		PRE		POST	
	1/29/2003	6/9/2003	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
	RAW		A.E.		SS		SCALED		%tile			
AWM-F	23	23	5.1	5.1	74	73	5	5	33	32		
AWM-R	14	14	9.2	9.2	90	90	8	8	44	43		
ASM	42	53	7.1	8.7	78	84	7	7	35	39		
AWM	10	10	<4.0	<4.0	70	70	4	4	30	30		
AID	20	28	9.1	11.11	88	97	8	9	42	47		
AWD	32	34	6.8	8.1	87	100	17	10	41	50		
AP	19	23	8.3	9.3	69	81	4	6	29	37		
SUM OF SS											44	49
AP QUOTIENT											69	75
% TILE RANK											2	5
MEDIAN AGE											7.1	8.10

This graph represents the changes in AM's SCAN scores. He made his greatest gains in the Filtered Speech and Auditory Figure Ground subtests. He improved almost 2.0 years in just 16 weeks of listening.

After completing 16 weeks of the TLP, his teacher noted a number of improvements. He is better at following one and two step directions in a sequence, organization and structure, he's more energetic, as well as improved ability at making judgements and generalizing to new situations and oral reading.

His teacher also noted incremental changes throughout his listening. By week four he was making more eye contact and his body seemed more relaxed. His mom felt he was more out going and acting more confident. By week 12 he was asking more questions, seemed less anxious or tense, more talkative and more independent. He was more physically active, more appropriate with adults, less distractible, less anxious and generally in a better mood by week 14. Finally, by week 16 AM was less wiggly, less defensive, more expressive, had improved handwriting, improved attention span and was more punctual.



After completing the TLP program, AM felt he was making more eye contact, less wiggly, more gentle with people and animals, less overwhelmed, had a quicker response time, math seemed easier, he was remembering names better and did not need instructions repeated as often.

TLP PROGRAM RESULTS–MB

Finally, student four was MB, a 14-year-old eighth grader. He is on an academic IEP. MB was the least compliant of all our students going through the program. He often felt that the listening was ‘extra work’ he had to do even though his classroom tasks were adjusted to compensate for the time spent listening. He was often absent or would refuse to follow instructions for optimum listening and eventual success. However, in spite of his ‘passive aggressiveness’ towards the TLP, he did benefit from The Listening Program.

His Special Services teacher completed the pre Listening Checklist prior to his beginning the TLP. She reported MB had difficulty focusing, he was easily distractible, poor sound and word discrimination, poor understanding of discussions, messy handwriting, difficulty setting goals, and often felt overwhelmed.

This graph represents the changes in raw score, age equivalency, standard scores, scaled scores, and percentiles for each subtest of the TAPS-R. MB was only re-tested for the AWM-F, AID and AWD subtests because he scored at or above the tests maximum on the other subtests. In spite of his poor compliance, significant gains were made in auditory interpretation of directions and auditory word discrimination.

Test of Auditory Perceptual Skills - Revised (TAPS-R)												
CLIENT–MB	Pretest	Posttest	PRE	POST	PRE	POS	PRE	POS	PRE	POST	PRE	POST
	2/12/2003	6/9/2003										
	RAW		A.E.		SS		SCALED		%tile			
AWM-F	47	47	11.10	11.10	96	96	9	9	37	37		
AWM-R	23		>12.11		102		10		55			
ASM	124		>12.11		122		14		93			
AWM	38		>12.11		112		12		79			
AID	20	36	9.1	>12.11	87	107	7	11	19	68		
AWD	32	35	6.8	12.10	87	106	7	11	19	66		
AP	34		>12.11		116		13		86			
SUM OF SS											72	
AP QUOTIENT											102	
% TILE RANK											56	
MEDIAN AGE											12.1	
											1	

MB was not given the SCAN.

After completing his listening of the TLP, MB’s Special Services teacher reported he was a little better at focusing, getting assignments completed and was less distractible.

His teacher also noted incremental changes throughout the listening assignment. By week ten MB seemed less overwhelmed, more independent and self confident, less defensive and irritable, more patient and flexible.

There was also an improvement in spelling and sequencing. By the end of week 12 she reports he was being more responsible and patient, had an increased frustration tolerance, more thinking before acting, improved focus, was in a better mood, improved social interactions and improved punctuality.

SUMMARY

Two cycles (forty hours) of The Listening Program Condensed Schedule were completed in this rural school district with four boys, 2 sixth graders, a third grader and an eighth grader. Each child made significant gains in auditory processing using TLP in spite of some noncompliance issues. Standardized test scores, the TAPS-R and SCAN, and professional observations confirmed the gains. Progress was demonstrated by all the students in auditory memory and discrimination. This improvement was obvious in the classroom by the changes noted in behavior, confidence and personal intensity. The results also transfer to other assessment tools specifically the STAR test.

I would especially like to recognize and thank Special Services teacher, Pat Jarnigan for her attention to the monitoring and tracking of each student's behavior, performance and eventual success.