

# Case Study: TLP & Autism

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## A. T., 24.1 Year-old Adult Male with Autism

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Detailed results of a 20-week highly modified TLP program. Subject used Bone-conduction headphones with CD's concurrently physical and mental exercises were performed. Pre and Post testing of sequential processing indicate improvement. Pre & Post testing of processing was mixed. Goals were qualitative in nature, observations & comments provide a picture of changes over the 20-week period.

## Contents

BACKGROUND INFORMATION .....	3
CONCURRENT TREATMENT/SERVICES .....	3
TLP LISTENING RECOMMENDATIONS .....	3
RATIONALE FOR TLP LISTENING RECOMMENDATIONS .....	4
OBSERVATIONS DURING LISTENING.....	4
PRE/POST TESTING.....	6
FOLLOW-UP RECOMMENDATIONS.....	7
RATIONALE FOR FOLLOW-UP TLP LISTENING RECOMMENDATIONS .....	7
DISCUSSION .....	7
APPENDIX ONE.....	8
APPENDIX TWO.....	10

## RUNNING HEAD: ADULT AUTISM AND THE LISTENING PROGRAM®: A CASE STUDY

Name: A.T.

Gender: Male

Chronological Age: 24 years, 1 month

Clinical Diagnosis: Autism

### BACKGROUND INFORMATION

A. T. was formally diagnosed with Autism at the age of 8. He had a formal evaluation and diagnosis from the local CDRC- The Child Development and Rehabilitation Center.

A. T.'s parents were proactive with his diagnosis taking him to DAN! Doctors who found A. T. tested positive for heavy metals. A. T.'s parents used natural supplements to boost his immune system, notable glutathione. He uses milk-free products.

Throughout his elementary school years, A. T. had several tutors to help him with math and reading comprehension skills, and life skills such as learning to tie his shoes and learning to sign his name in cursive. During high school he was enrolled in a life skills program in a local high school. After high school, he participated in a Community Living Program setting which taught him specialized life skills such as budgeting, grocery shopping, bus riding, job training, and cooking.

A. T. participated in Auditory Integration Treatment, Vision Perception Therapy, Speech Therapy, Non-Gluten diet therapy and Occupational therapy prior to using The Listening Program®.

A. T.'s parents wanted him to develop more communication skills, with the emphasis of slowing the speed of his speaking skills. They wanted him to develop a clearer enunciation of words. They wanted him to develop a greater desire to initiate conversations and talk in whole sentences and not just phrases.

A. T. started The Listening Program® in the fall of 2010.

### CONCURRENT TREATMENT/SERVICES

In addition to A. T.'s TLP program, A. T. worked with his mother and father practicing his memory, his coordination, and his rhythm. His parents were trained in P.A.C.E., writing doodles, and Lazy 8's from Brain Gym; the arrows exercise, visual memory exercises 'Sequence 3', 'Sequence 2a' and auditory memory 'Exercise 1a' from Audiblox; the concentration exercise and the 'Brian's Back' exercise from EFSAP.

### TLP LISTENING RECOMMENDATIONS

A. T. was on a highly specialized custom program using TLP CD's and approved Bone conduction equipment. He listened for 20 weeks with a two week break in the middle. A. T. listened at home in a relaxed familiar environment. A.T. listened 2X daily 30 minutes each day. The specific Albums he listened to are as follows (AM 1<sup>st</sup> CD, PM 2<sup>nd</sup> CD).

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Week	CDs	Week	CDs	Week	CDs	Week	CDs
1	1, 3	6	6, 3	11	6, 3	16	5, 2
2	2, 3	7	7, 4	12	5, 4	17	7, 4
3	4, 3	8	7, 3	13	6, 1	18	6, 3
4	5, 4	9	5, 4	14	7, 4	19	5, 4
5	5, 4	10	6, 4	15	6, 3	20	6, 3

### RATIONALE FOR TLP LISTENING RECOMMENDATIONS

At the time A.T. started he was an only child, A.T.'s parents wanted significant changes within a year to 2 years so they could add to their family. A.T.'s mother committed to about 3 hours of exercises per day over the 5.5 month period. She also committed to spending 1-2 hours per week sending me reports about his progress. Because of A.T.'s parents commitment we were able to follow an aggressive schedule with TLP.

A.T. never initiated conversation until he listened to 15 minutes of Speech and Language during the summer of 2010. Because of his immediate response to the therapy his family hoped he could become independent – this was a large goal and we knew he would need more stimulation to meet this goal.

After the initial plan for A.T. we changed the program from moving past CD 7 and into high spectrum. During the 7<sup>th</sup> week A.T. was sick and didn't listen to a full week of CD 7. During weeks 8 & 14 A.T. expressed more frustration and anger – so we moved back down to the Speech and Language zone. At week 17 A.T. did not express more frustration and anger on CD 7.

### OBSERVATIONS DURING LISTENING

The Listening Observations Checklist responses are charted in Appendix 2.

A. T.'s sound therapy program was 20 weeks long (with a 2 week break in the middle). The usual program levels advanced too quickly for A. T. He listened to 30 minute sessions twice per day to different zones. He listened to a total of 5 weeks of Full spectrum sound. He listened to 18 weeks of Sensory Integration, 15 weeks of Speech and Language, and 3 weeks of the beginning of High Spectrum.

A. T. showed the most change in:

1. Expressive Listening & Language (67)
2. Attention (56)
3. Motor Skills (56)
4. Language (51)
5. Emotion (50)
6. Social (41)
7. Physical (31)
8. Organization (10)

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Some comments from A.T.'s program follow:

Week 1: CD's 1, 3 Comments from parents: A. T. used a phrase he never used before: "I'm sorry, what?"; A. T. is initiating conversations during rides in the car. We notice that his awareness with his surroundings has increased - making comments about what he sees outside while travelling in the car.

Week 2: CD's 2, 3 When I asked him the question " Why do you look at the wind through the trees?" He answered: "because it relaxes me". This was the first time he has actually expressed himself this way in regards to looking at the leaves as the wind blows through them. We knew it was relaxing for him, but for him to acknowledge it is a big step!

Week 3: CD's 4, 3 I woke up and asked A. T. if he was ready to put his headset on. He replied: "This is the weekend". I thought it was Monday morning! A. T. was able to let me know what day it was.

On Monday, A. T. and I were watching television, Right after I made a sigh while sitting on the couch, A. T. asked "What's wrong?" This was the first time he had ever asked me something like this.

Week 4: CD's 5, 4 A. T. continues to improve in many areas. His speech speed is still fast. He is much calmer and more mature. He is definitely more expressive. He is very verbal these days. I notice he seems to interject comments while others are talking. We have been trying to teach him to not interrupt conversations.

Week 5: CD's 5, 4 On Thursday, A. T. went out to lunch with his friend D.A.. He told D.A. that he did not want to eat at the food court because it was too loud. He further said he wanted to eat at Chili's. When they arrived at Chili's, A. T. told the hostess it would be lunch for two and they would be eating at the bar. [First time ever.]

Week 6: CD's 6, 3 A. T. has been really sick- suffering from cold and cough. His performance was not up to what is expected because of this. Seems to express more irritability and anger.

Week 8: CD's 7, 3 A.T. is describing more – observing outside the car, acting more mature and able to be independent.

Week 11: CD's 6, 3 In the car, A. T. was told to slow down when he was eating French fries. He responded with "I can't even eat French fries..." A. T. went hiking on Sunday and Sean the hiking coordinator noticed A. T. using better vocabulary and talked clearer.

Week 12: CD's 5, 4 A. T. was asked what he wanted to do for the weekend and he responded with " I don't know, I have to think about it"- Another good answer! While watching tv this week, A. T. would make comments like- "who is that girl?" "This is a weird commercial". Definitely more verbalization going on.

Week 13: CD's 6, 1 A. T. is initiating with doing the daily exercises- this is new. He changes the CD from morning to evening ones, and gets all the materials for the exercises. He initiates letting us know when he is done with listening.

## RUNNING HEAD: ADULT AUTISM AND THE LISTENING PROGRAM®: A CASE STUDY

Week 14: CD's 7, 4 We are working with A. T. on table manners- getting a small portion of food and asking for more if needed. He does not like being corrected and will verbally rebel. He is definitely more verbal and expressive about how he feels about things this past week. Still working on having A. T. talk slowly- he still has the habit pattern of talking too fast. A. T. has tended to be more anxious and quick to get angry this week. He is able to explain why he feels angry with us asking questions.

Week 17: CD's 7, 4 A. T. continues to express himself real well. We are so pleased at his progress. He is showing increased cognitive reasoning skills. He is asking questions such as: "Dad, where's the bowl of gummies?" Statements such as: "I know you and mom are going out, so I'm okay with staying home."

Week 19: CD's 5, 4 This is the 2nd week that A. T. did a great job at his Wednesday night fellowship with his peers. His peers are really noticing some changes. This week was the first time A. T. participated in singing songs with the group.

### PRE/POST TESTING

MediTECH's BrainBoy® Low-Level Auditory and Visual Processing Test.

Test	November 2010	May 2011
○ Visual order threshold:	Result is so low it cannot be scored.	Scores at 5.5 years
○ Auditory order threshold:	Result is so low it cannot be scored.	NA (test not working)
○ Spatial hearing:	Effort is Without Result.	NA (test not working)
○ Pitch Discrimination:	Scores at 12 years old.	8 years old
○ Auditory Motor-Timing:	Result is so low it cannot be scored.	NA (test not working)
○ Visual Motor-Timing:	Result is so low it cannot be scored.	Result is so low it cannot be scored.
○ Auditory Reaction Time:	Effort is Without Result.	Cannot calculate the score.
○ Frequency Pattern Test:	Effort is Without Result.	Scores at 8 years.
○ Duration Pattern Test:	Scores at 7.5 years old.	Effort is without Result

Digit Span test with colors

Test	November 2010	May 2011
○ Aural	Below Norm (4)	Below Norm (6)
○ Visual	Below Norm (4)	Normal (7)

Dominance

- Right (Ear, Eye, Hand, Foot)

Perception

- November 2010: Moveable, feels like he is moving when he writes
- May 2011: indicates he no longer feels he is moving when he writes.

Directionality performance – Can client accurately identify left, right, up and down?

- November 2010: CANNOT identify and move at the same time.
- May 2011: CAN identify and move at the same time.

Reading Performance: Houghten-Mifflin Little Bear Pre-primer.

## RUNNING HEAD: ADULT AUTISM AND THE LISTENING PROGRAM®: A CASE STUDY

- November 2010: Adds, omits, substitutes, hesitates, and disregards punctuation.
- May 2011: Still adds & omits but rarely, still reads quickly but without hesitations.

Vocabulary check: San Diego Graded Word List (November 2010)

- 5<sup>th</sup> grade Independent Level – same both test dates
- 6<sup>th</sup> grade Frustration Level – same both test dates

### FOLLOW-UP RECOMMENDATIONS

We recommended the following for A.T.

- Basic TLP program for 20 weeks in the morning. 30 minutes
- CD's 1, 2, 3, 4 in the afternoon – one per week starting at CD 1, moving to CD 4 and back down. 15 or 30 minutes – A.T.'s decision.
- Purchase of BrainBuilder®. 1 session daily 5 days on, 2 days off.

### RATIONALE FOR FOLLOW-UP TLP LISTENING RECOMMENDATIONS

- A.T. made tremendous changes in his communication. At the end of his program he initiated conversation – to the point of interrupting. Not only was he initiating conversation, he was doing so with multi-word complex sentences. From his parent's goals he needed more time in organization and once he stopped reacting to CD 7 we knew he could handle a basic listening program schedule.
- A.T. began showing turn-taking skills and more importantly independence. Both his parents and I felt he was ready for BrainBuilder® to continue to expand his visual memory and strengthen his auditory memory.

### DISCUSSION

A.T. was at the perfect place for The Listening Program®. His parents were dedicated to the extra exercises he was doing in addition to his listening. While the BrianBoy scores were mixed, the qualitative results speak for themselves. At the end of the TLP program A.T. could express himself in full sentences, he noticed and responded to other's emotional states, and most importantly he was able to discuss and share why he was feeling upset or angry.

#### At the end of the 20 weeks

Parents: A.T. has continued with improvement on his expressive skills for initiating conversation. He still talks too fast and has to be reminded to slow down and speak clearly and smoothly several times. He is self-driven with listening to The Listening Program® then doing the enhanced version of the BrainBuilder® program. He does this 5 days a week without me prompting him.

#### A.T. Today

Parents: He is now working at the local community college 2 times a week and is earning \$8.80 an hour. We are told that he is doing well and is learning to work out issues with the staff that are teaching and training him. A.T. will be participating in a horseback riding program this Spring. He is a natural when it comes to riding on a horse. He has already learned how to brush a horse and can ride solo on a trail. We have high hopes for him for his future and will continue The Listening Program on a go-forward basis.

Dorothy: A.T. has a fan club dedicated to his observations about what is going on around him. These are usually one-line 'slogans' that his work place has been writing and posting on their walls. He's able to train others in his job and socially interact. These big steps!

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## APPENDIX ONE

The table below shows the total number of weeks change was observed. When no change is observed it is scored a zero.

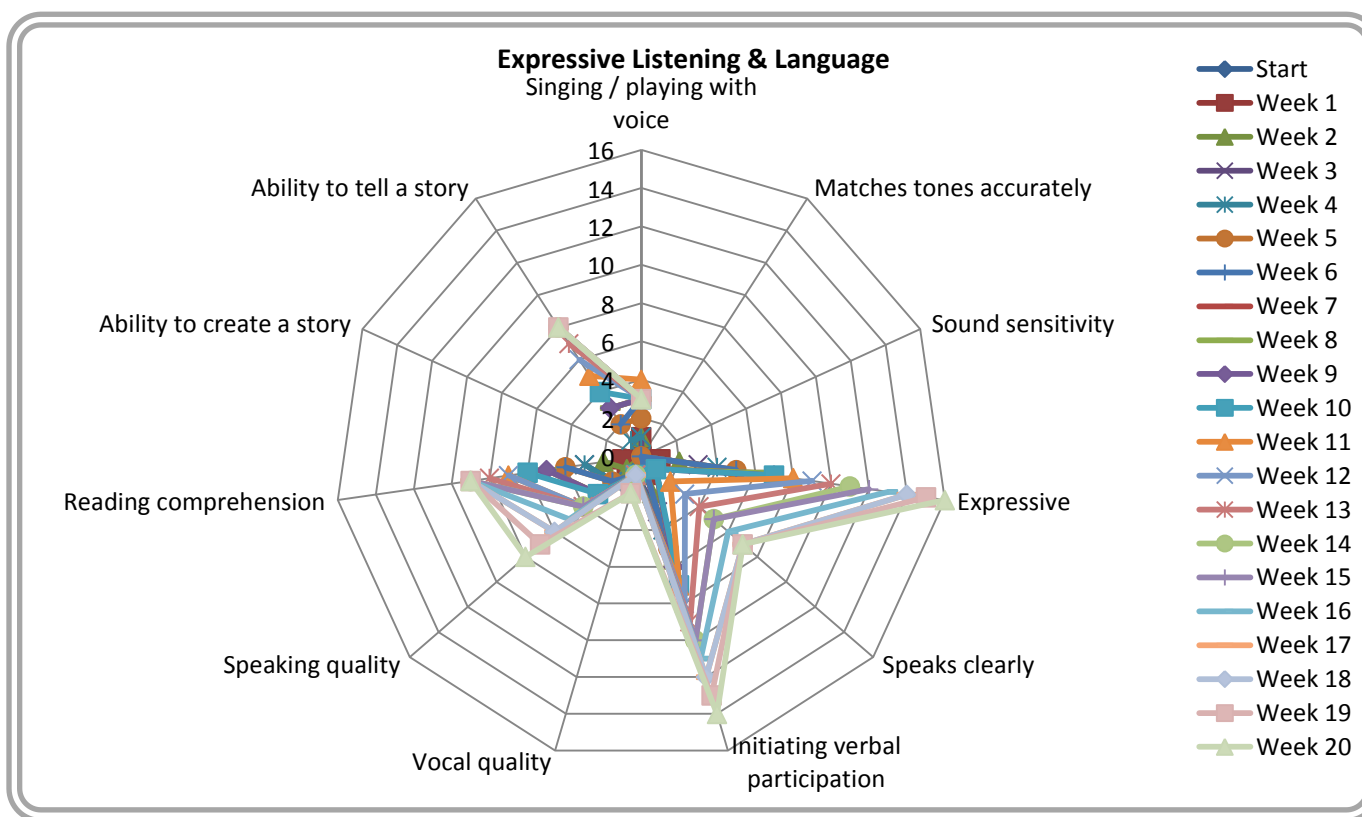
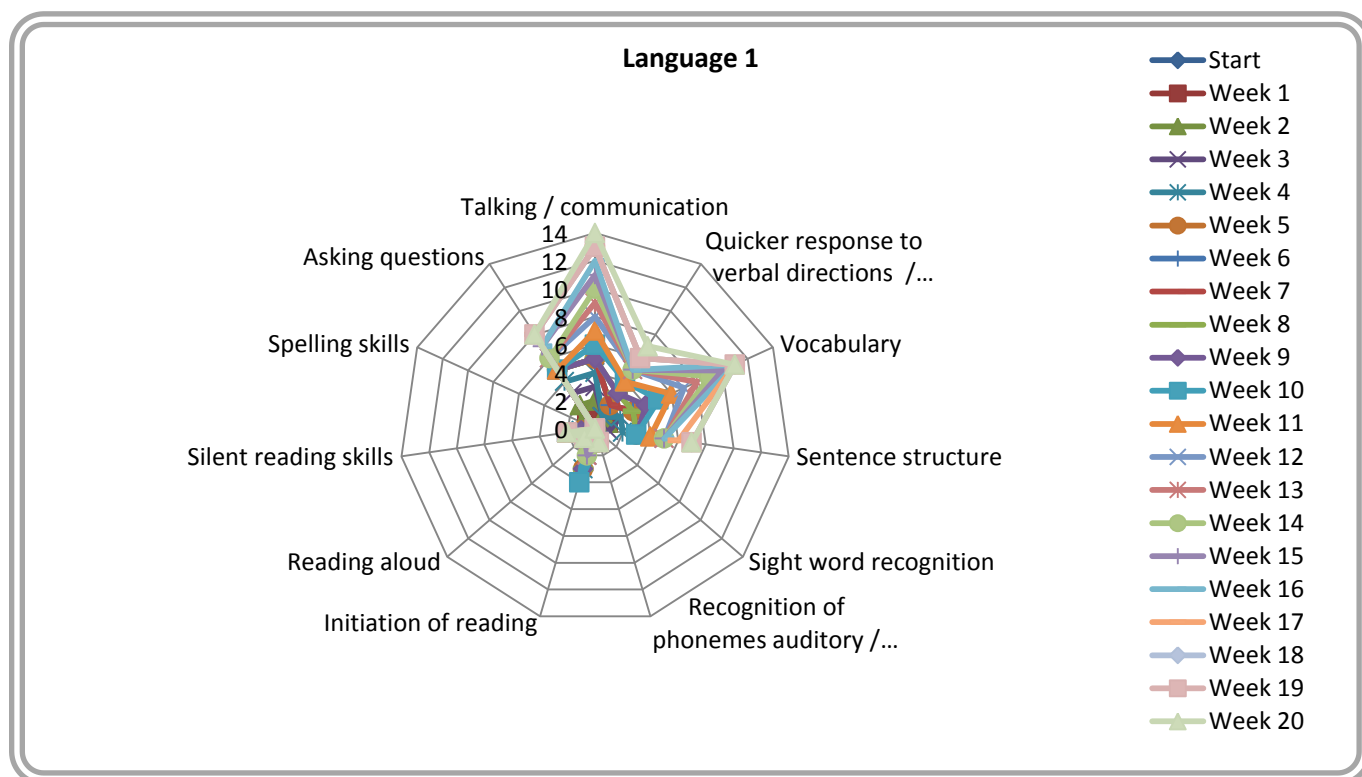
Areas Tracked	Number of Weeks POSITIVE change was observed.
<b>Language (51)</b>	
Talking / communication	14
Quicker response to verbal directions / questions	7
Vocabulary	11
Sentence structure	7
Sight word recognition	0
Recognition of phonemes auditory / visual auditory	1
Initiation of reading	0
Reading aloud	1
Silent reading skills	2
Spelling skills	0
Asking questions	8
<b>Expressive Listening &amp; Language (67)</b>	
Singing / playing with voice	3
Matches tones accurately	0
Sound sensitivity	0
Expressive	16
Speaks clearly	7
Initiating verbal participation	14
Vocal quality	2
Speaking quality	8
Reading comprehension	9
Ability to create a story	0
Ability to tell a story	8
<b>Attention (56)</b>	
Visual attention	15
Auditory attention	14
Impulse control	0
Remembering names	2
Long term memory	2
Short term memory	2
Focus	12
Distractibility (reduction)	5
Need instructions repeated (reduction)	4
<b>Emotion (50)</b>	
Irritability (reduction)	3
Motivation	7
Emotion	5
Animated	3
Self-control	2
Getting angry (reduction)	3
Independent	10
Frustration tolerance	4
Flexibility	3
Needy (reduction)	6
Defensiveness (reduction)	4
<b>Motor Skills (56)</b>	



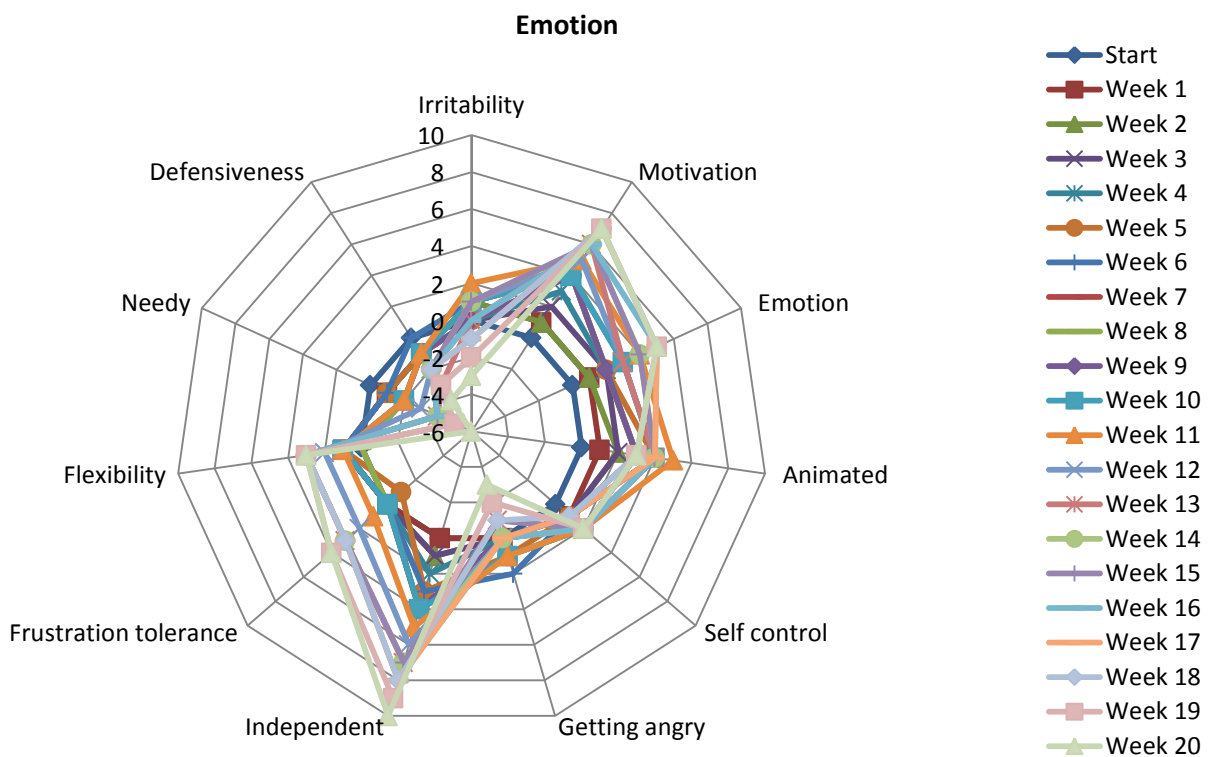
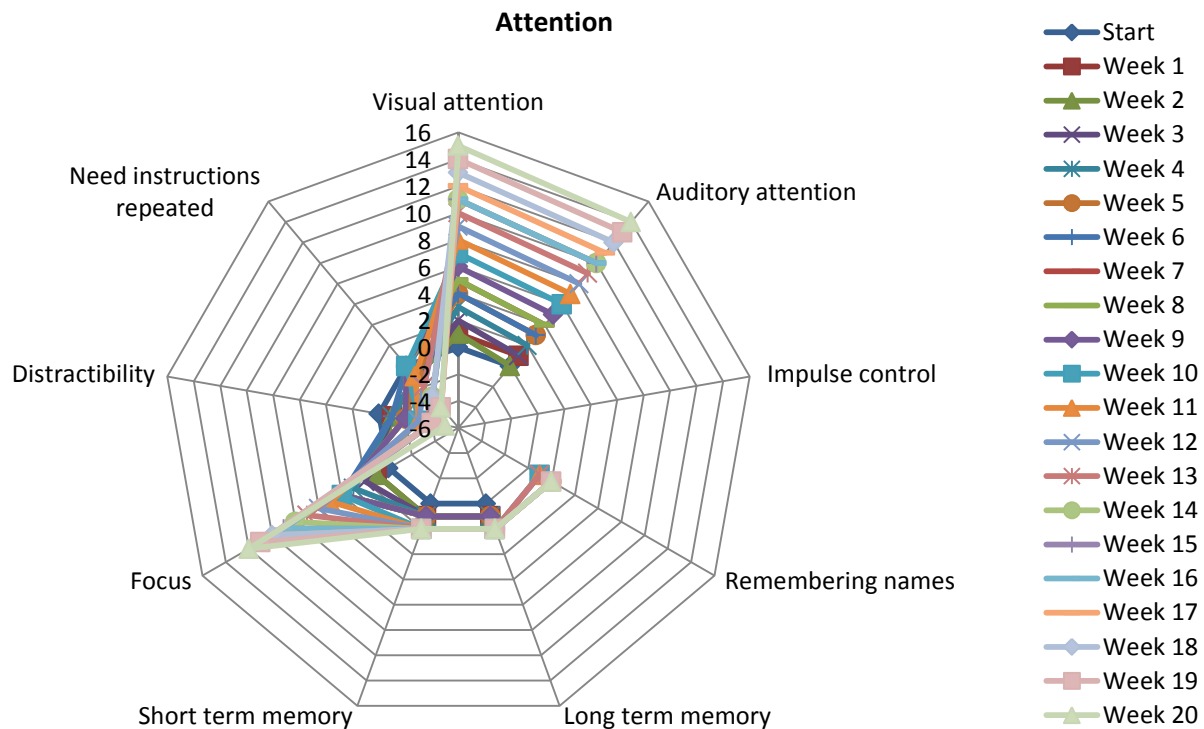
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Physical activity	1
Restlessness (reduction)	7
Physical coordination	16
Wiggling (reduction)	1
Sense of rhythm	18
Confusing left and right on self (reduction)	2
Confusing left and right on others (reduction)	1
Handwriting improvement	0
Letter reversals	0
Awareness of self-related to environment/objects/others	10
Touch sensitivity (reduction)	0
<b>Organization (10)</b>	
Punctuality	0
Math improvement	0
Beginning and completing tasks	0
Task initiation	3
On-task performance	2
Ability to sequence steps of an activity	1
Task completion	1
Ability to gather needed materials	3
Ability to organize materials for task	0
Goal directedness in unstructured activities	0
Ability to follow familiar classroom routines	0
<b>Physical (31)</b>	
Upright posture	0
Face / Body relaxed	7
Breathing more deeply and regularly	1
Energy level	3
Headaches (reduction)	1
Anxious / tense (reduction)	9
Awareness of body and how it works	2
Sleeping	1
Eating	2
Sound sensitivity (reduction)	5
<b>Social (41)</b>	
Eye contact	8
Self-control	2
Relationships with peers / adults	7
Sense of humor	3
Responsible	1
New interests	4
Independent	5
Gentle with animals (A. T. is always gentle)	0
Change in friends	1
New friends	0
Sensitive to voice tone, facial or body messages	2
Adventurous	3
Open minded	5

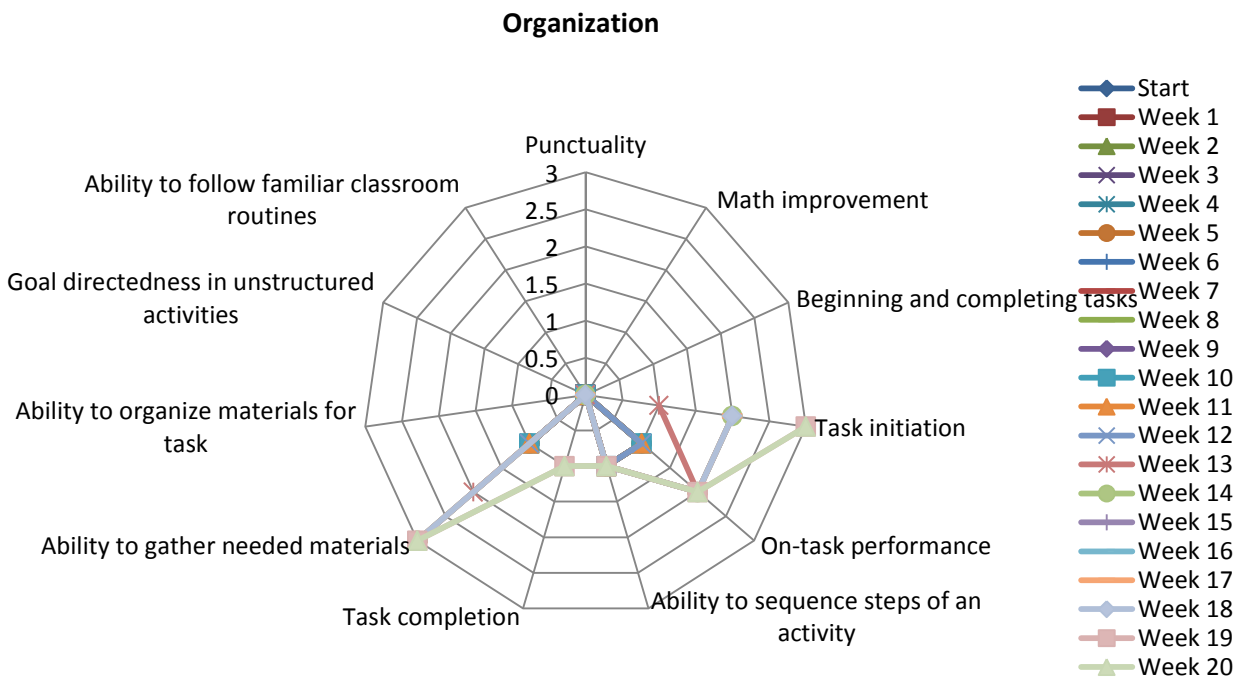
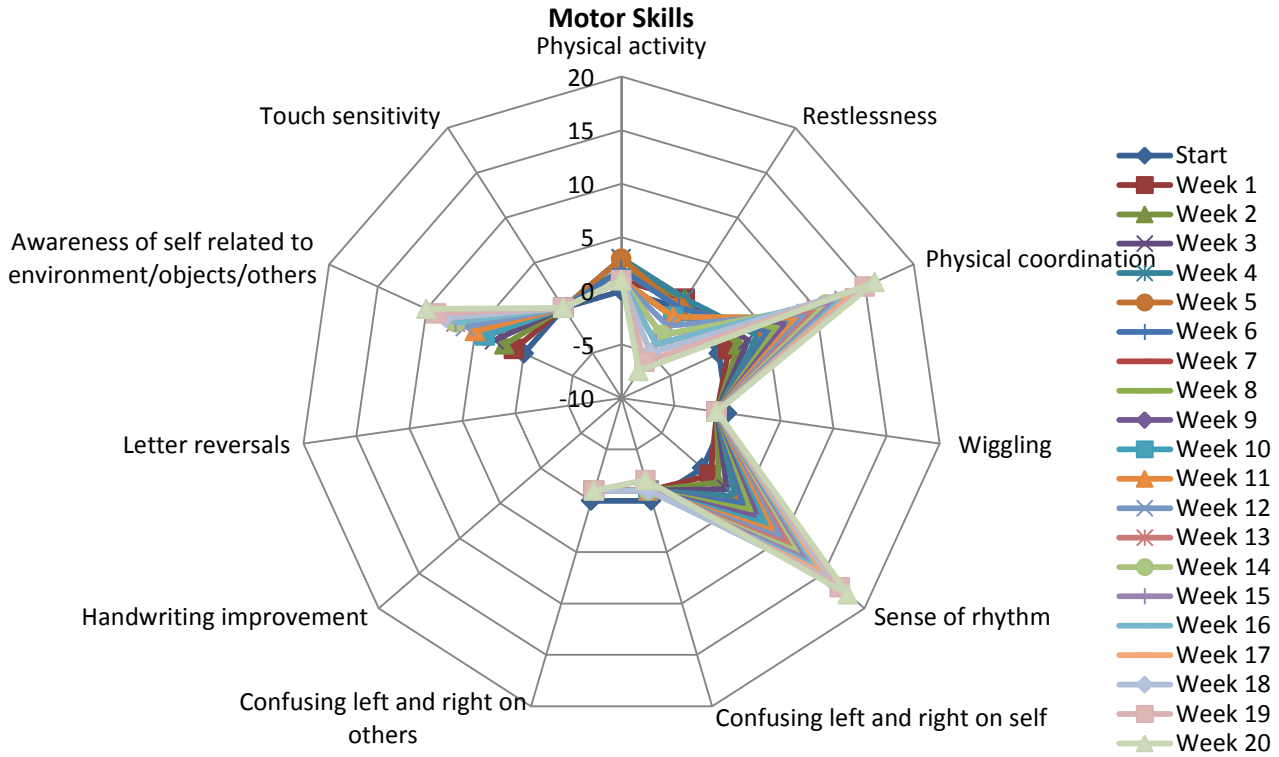
APPENDIX TWO



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