

Action Research Project

Entry 1: Introduction (March 16, 2015)

My Autistic Support classroom at Ebenezer Elementary is centered around the Applied Behavior Analysis of Verbal Behavior. In this Autistic Support classroom, there are eight children ranging from the grades of kindergarten to second grade. Ebenezer Elementary school is located in the Cornwall- Lebanon School District, which is in Lebanon, Pennsylvania. Ebenezer Elementary school is a kindergarten to fifth grade building, with about 587 students enrolled. Of the 587 students, roughly 76% are White, 12% are Hispanic, and 5.6% are Black or African American. There are 36% of the students that are considered economically disadvantaged, and 1.8% are English Language Learners. The population of students that will be the primary focus of my research are part of the Special Education program, and 15.8% of the students at Ebenezer Elementary participate in Special Education.

The eight students that I have in my classroom are all on the Autism spectrum except for one, and he is diagnosed with MR. There are two girls and six boys. One student is in second grade, five students are in first grade, and two are in kindergarten. The students are in the Autistic Support classroom for the majority of the day. Some of the students go to the general education classroom for specials and very little instruction, but some of the students don't go to the general education classrooms at all.

There are many different components to the Verbal Behavior program that are used in our classroom. Verbal Behavior Therapy, thought of by theorist B. F Skinner, is designed to influence children to learn the language by connecting words to their purposes. It is meant to fill in

the holes that are left by the developmental deficits that generates from their Autism. There are four operants that make up Verbal Behavior: Mand, Tact, Intraverbal, and Echoic. Each has a specific process that provides the students with vocabulary. Another component is the idea of reinforcement and Behaviorism. Immediately after requests or mands, the students get reinforced with a preferred item or toy. Verbal Behavior Therapy has many different elements that contribute to the success of these children.

As I am learning more about Verbal Behavior, and beginning to teach myself, I find the amount of language some of the quietest and uncommunicative children have is very remarkable. I am hoping to learn more about the developmental differences that these students possess in regards to language, and how these operants and this therapy changes those developmental differences. I am interested in teaching special education, and by diving into Verbal Behavior and learning so much about the students on the Autism spectrum, I will feel more component as a professional and I will be able to reach my students better. In observing the children across different settings, and in different situations, I have decided to research how specific operants in Verbal Behavior help with linguistic development of students with low cognitive and language skills.

Entry 2: Action Plan (March 23, 2015)

One aspect of Verbal Behavior that makes it so influential is the research that drives the practices. The principles come from research into how children with Autism learn and the how language acquisition is beneficial in their lives. Every day, throughout the entire day, data is constantly being collected on each student, from the cards they get right in probing, to the interaction they have with peers. There is nothing that isn't recorded when it comes to Verbal Behavior, so it is easy for me to collect data and get a reasonable amount of information on my students. Collecting this data helps to form the individualized goals for each student, and tracks how their progress or lack of progress is going throughout the programs.

The goal of my research is to better understand the language development of students with autism and to see the Verbal Behavior therapy and the operants further develop in these children. Each child has a data book that contains data sheets consisting of notes about the child's activity and behavior. At the end of each day, the data from the sheet is added to each child's book which helps keep track of all the changes. At the end of every week, the data sheets get filed and new ones are created, transferring the information onto the next week. In doing my research, I will use the data that has been recorded through this year along with the data that I can collect on the students.

Using the data books for the three students I selected, I will be tracking how many words and how high their operants were in December compared to now. The two students for my study are from kindergarten and first grade, named Ryan and James. They both spend the entire day in the special education classroom, never going to a general education classroom. Each of the stu-

dents are verbal, although their language skills are minimal, which is why they are so helpful in conducting my study. I will recreate the graph for each students, across the four operants to show the growth, or decline of each. I will analyze the numbers on the graph across the four month period of time, and across the different areas that are covered in each operant. Once I have the data graphs side by side, it will allow me to compare the results and account for the developmental level of each of my students linguistically. From the data collected, I hope to conclude the range of language development obtained through the four operants of Verbal Behavior.

Entry 3: Reflection on Intervention, Part I (March 30, 2015)

After a few weeks implementing and taking data on Verbal Behavior, I have come up with the data comparison between December 2014 to March 2015, which will help to better display the results of Verbal Behavior therapy on students with low cognitive and language development. When implementing instruction, the data collection is one of the most important parts. The staff takes very accurate data, and the purpose is to be able to look back and see where the child was in December.

I chose to focus on two children; both are verbal but have low language skills and low cognitive levels. There are three operants I am looking at to decide their development of language: Intraverbal, Echoic, and Tact. "Tact" refers to labeling or naming items or pictures. An example would be seeing a picture of a phone and saying "phone." Echoic is repeating what the student hears, and this is used with some of our students to help with their speech. Intraverbal refers to answering questions or having a conversation with someone. It is also known as "fun

fill-ins.” An example of a fill-in Intraverbal would be “A cow says...” and the child would say “moo.” This is the hardest operant for the students because it requires a lot of abstract thinking.

The two students I compared, Ryan and James, show growth across the period of time in each of the operants. The graph belonging to Ryan shows the days of the month, and how many mastered tact words he mastered (See Appendix A). On December 19th, Ryan had 398 mastered. On March 26th, Ryan had 430 mastered. Through these graphs, we map out the different goals for the students, and we see the progress they are making in their language development.

In Ryan’s Echoic graph, December shows that he mastered 115 words, and by March, he mastered 129 words (See Appendix B). Finally, in the Intraverbal graph, Ryan mastered 17 in December and by March, he had 40 words mastered (See Appendix C). From this data, it is clear that Ryan’s linguistic development is growing, although there are still areas he needs to work on. In the operant of Tact on December 19th, James had 103 mastered. On March 26th, Ryan had 121 mastered (See Appendix D). In James’ Echoic graph, December shows that he mastered 115 words, and by March, he mastered 129 words (See Appendix E). Finally, in the Intraverbal graph, James mastered 20 in December and by March, he had 30 words mastered (See Appendix F).

I created graph to compare the results of each of the months for both students (See Appendix’s G and H). These graphs display the amount of growth the boys accomplished in three months of Verbal Behavior. Although their goals are different, their steady improvement helps to answer my question and prove that Verbal Behavior therapy does improve linguistic development of students with low cognitive and language development.

One thing that I have noticed throughout the data collection and implementation is the wide range of language skills acquired, but the lack of spontaneous language. When the students

are asked a question, in need of something, or during instruction, that is when I hear their use of language. During play and other random times of the day, there is little to no language from either child. The next steps I will take will look deeper into their everyday use of language, especially using the things they learn from the intensive teaching sessions. The intensive teaching sessions consist of errorless teaching and manding sessions, which is where I get the majority of my observation data from. I will conduct lessons or activities that will mirror the type of vocabulary words they are learning, and I will observe how many spontaneous words they use, and how many prompted words they can use during a 15 minute session. After I have that data, I will better understand Verbal Behavior therapy and how it is assisting with language development of students with Autism.

Entry 4: Reflections on Intervention, Part 2 II (April 13, 2015)

In evaluating the Verbal Behavior program during my intervention, I have found that it does enhance language development in students with low cognitive functions. Since the last entry, I have continued to take data on the students because the program is very data-driven, and the results align with my initial results. Ryan has mastered about five more words than the previous week, and James acquired five more words.

Another part of Verbal Behavior that is working on linguistic development in the students is called NET. NET stands for Natural Environment Teaching, and it is basically taking the knowns of each student and creating an unstructured setting for the students to use their vocabu-

lary in a more spontaneous way. One of the toughest things for students on the spectrum is generalization, and NET is designed to allow students to have opportunities to experience different materials across different settings to help them generalize their language.

As the final piece to my intervention, I wanted to explore NET and see if this approach did help the students to grow even more linguistically. I have been writing NET lesson plans for about a week now, and I have seen the benefits and successes with it. I did not have enough time during my implementation to get enough data to compare the results, but I did take the data for four lessons across one week, and the results were all positives for my students (see Appendix I). I did formative visual assessments during each session of NET, and as I continue with it, I will learn more and more about how it fits in with the program. As I go forward, I would like to continue to use NET to generalize the vocabulary of the students to see more spontaneous language. Also, there are specific times set aside for play, which is another time that we take down data about the language they use. Going forward, I will use a peer-to-peer mand session to see the different spontaneous language the students use.

Entry 5: Conclusion and Final Reflection (April 20, 2015)

The main purpose of my action research project was to explore the language capacity of students with autism. This exploration was done through the Verbal Behavior program that is used in my classroom. It consists of many different operants and lots of assessment and data. I took the data that was provided for me, and looked at the progression of language over a three month period with two of my students with low language development and low cognitive func-

tions. The two students, Ryan and James, showed progression over the three months in every operant by up to 50 words throughout the Verbal Behavior program.

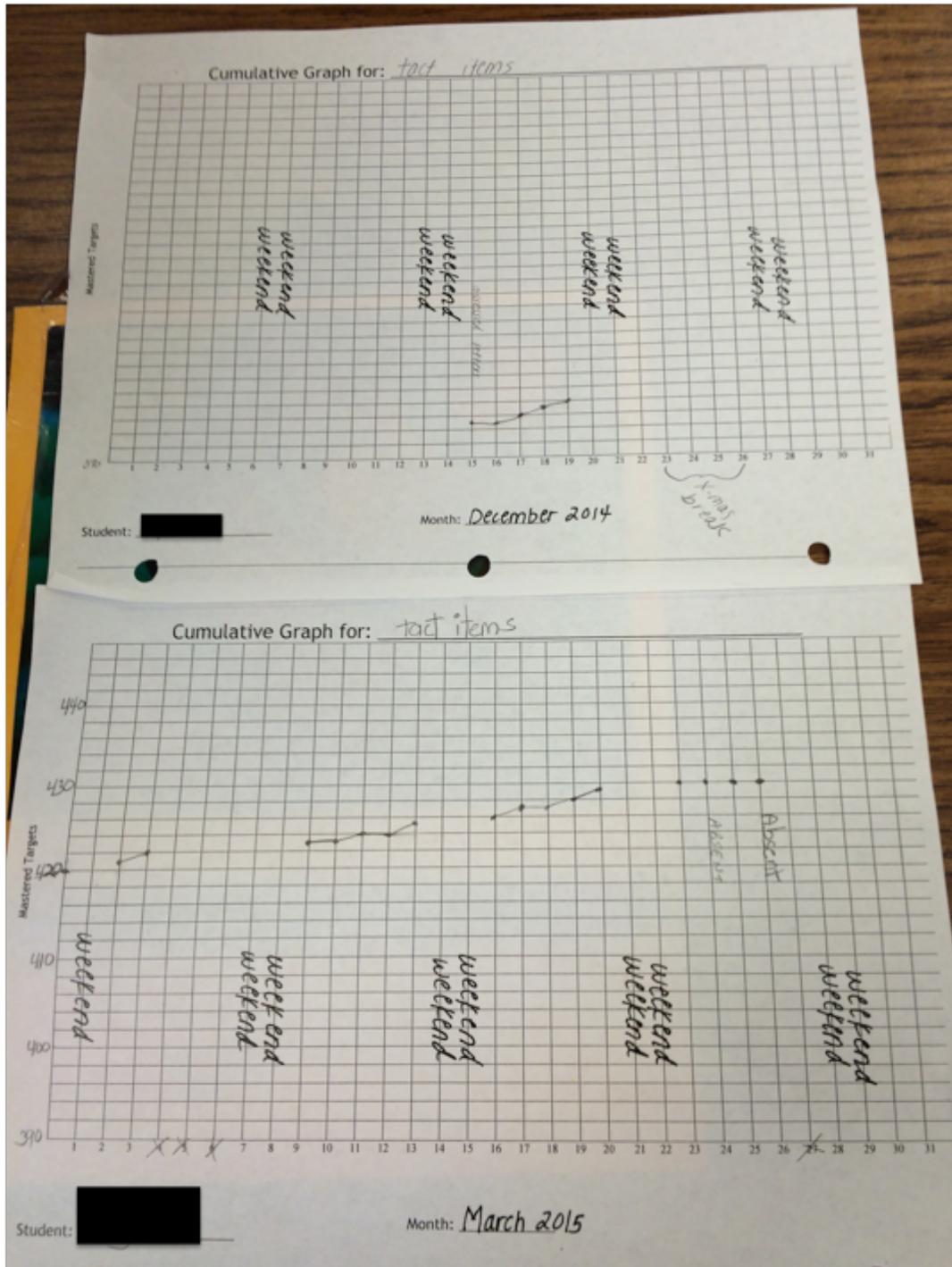
In analyzing my data, and looking further into my research, I came across more questions that would help me with my findings. First, as part of this action research of analyzing the data and the students, I found myself analyzing the program itself and how it develops the students across domains, not just linguistically. I would say that I found the Verbal Behavior program to be successful for most of my students. Because every child is different, it helped others more than some but for the most part, I would say that I saw all the good it did for my students.

Another observation that I made while conducting my research is the concept of generalization and the lack of spontaneous language that my students possess. Throughout my four years of studying and researching about children with autism, I knew that these were some of the characteristics that these students have. In analyzing it, I realized that this is one of the biggest barriers for my students. They are all pretty high functioning, so their language was a huge need for them, and they seem to gain language skills rather quickly in this program. The problem was their use of it outside the teaching sessions, and how they spontaneously used it throughout the day. In further research, I would love to see how the further development of spontaneous language and generalization in these students could benefit their language skills even further. Based on the data taken, I found that the Verbal Behavior therapy consisting of the different operants show significant development of language in my students with low cognitive and low language function.

Appendix:

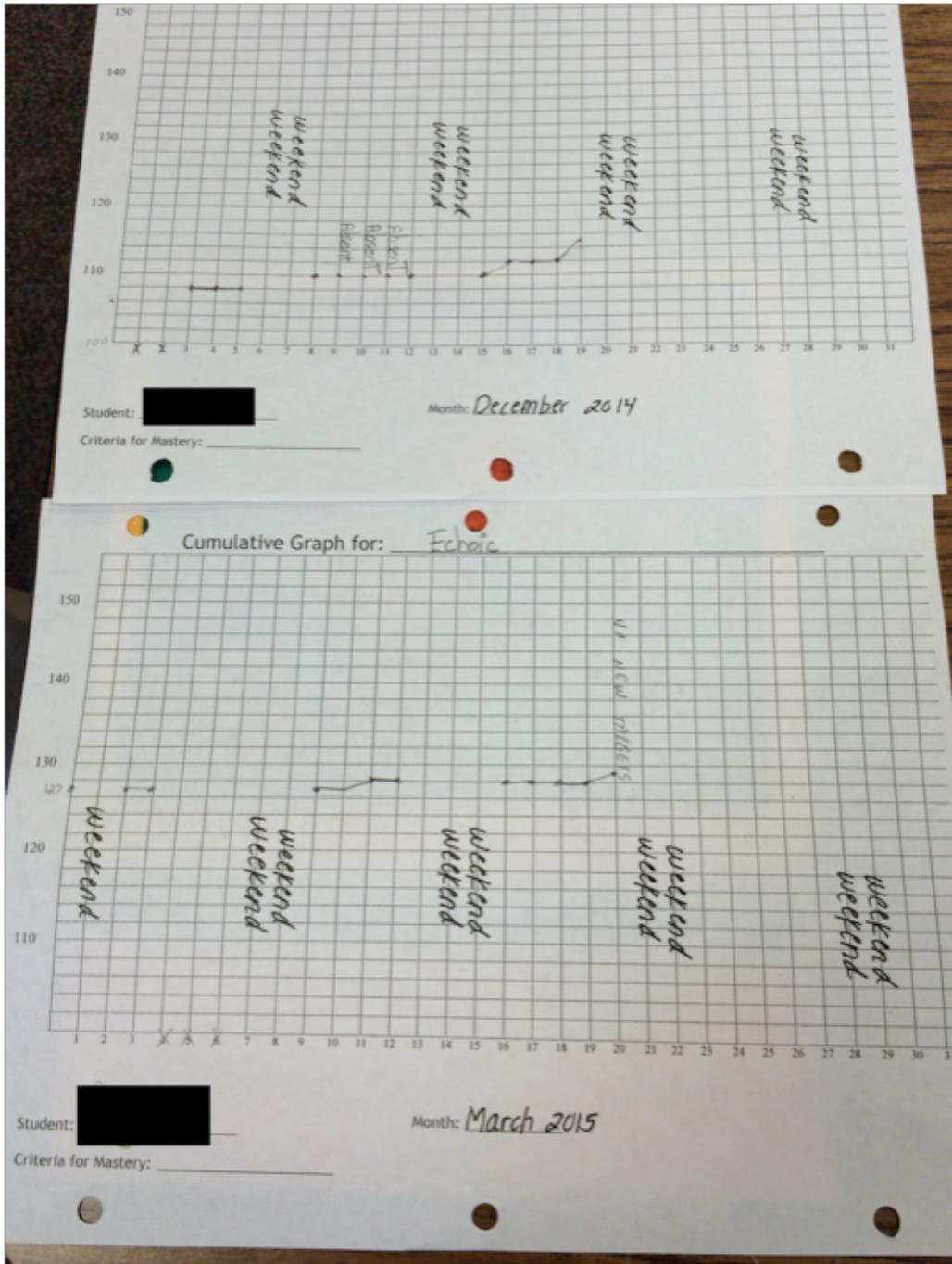
Appendix A:

This is Ryan's Tact graphs. The top graph is from December 2014 and the bottom one is from March 2015.



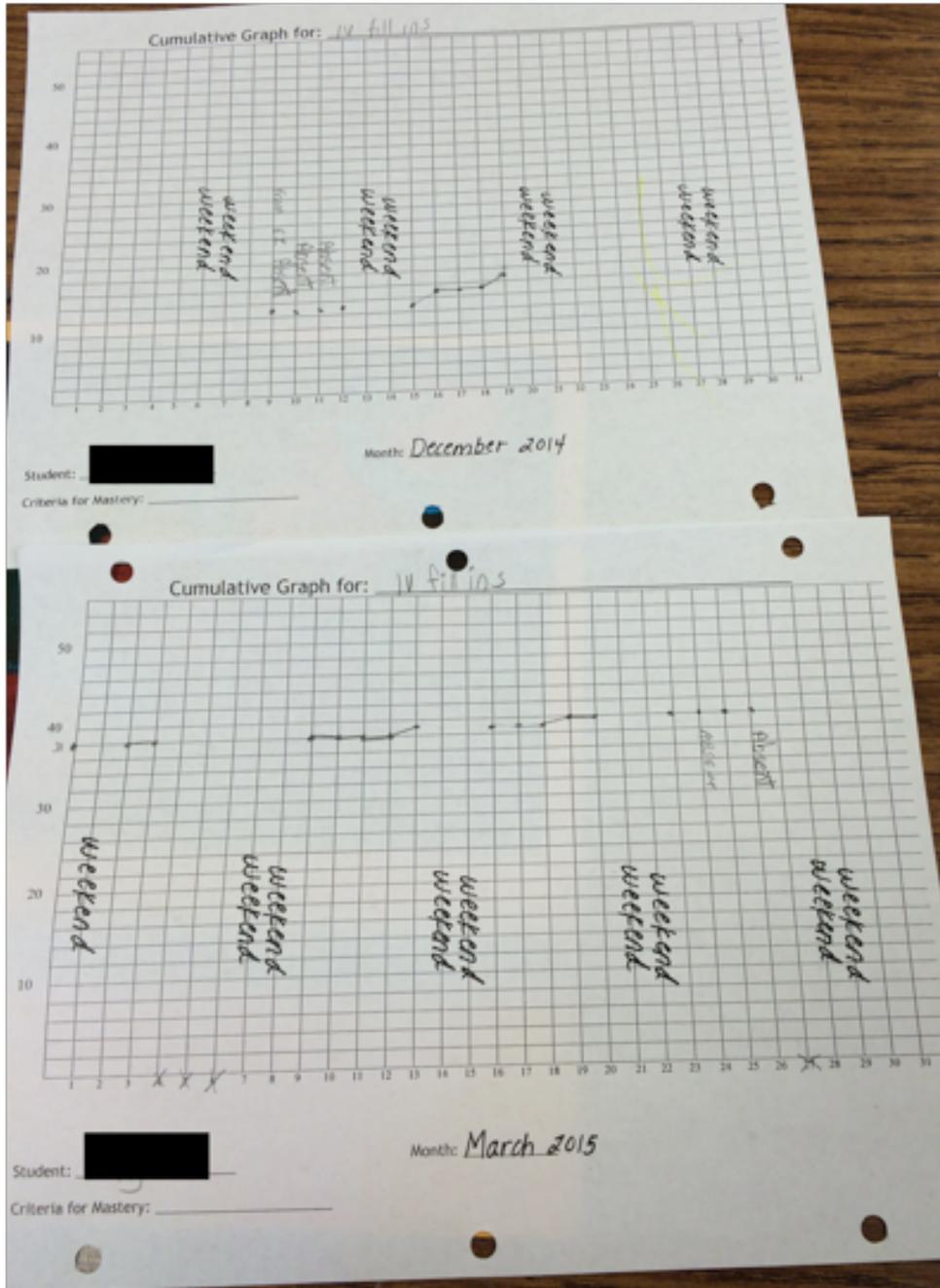
Appendix B:

This is Ryan's graph for Echoic. The top graph shows his master from December 2014 and the bottom one is from March 2015.



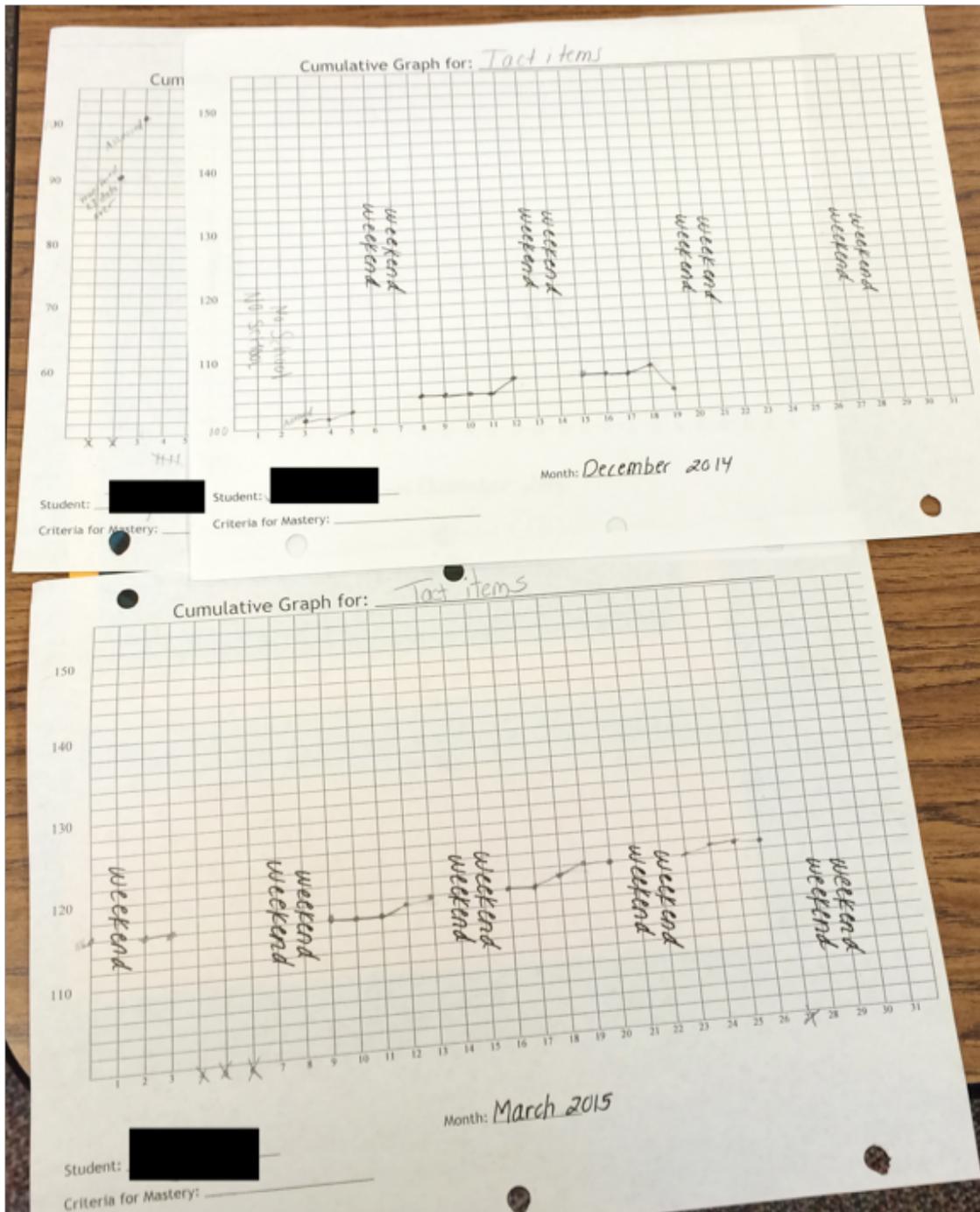
Appendix C:

This is Ryan's Interverbal graph. The top graph shows his mastery from December 2014 and the bottom one is from March 2015.



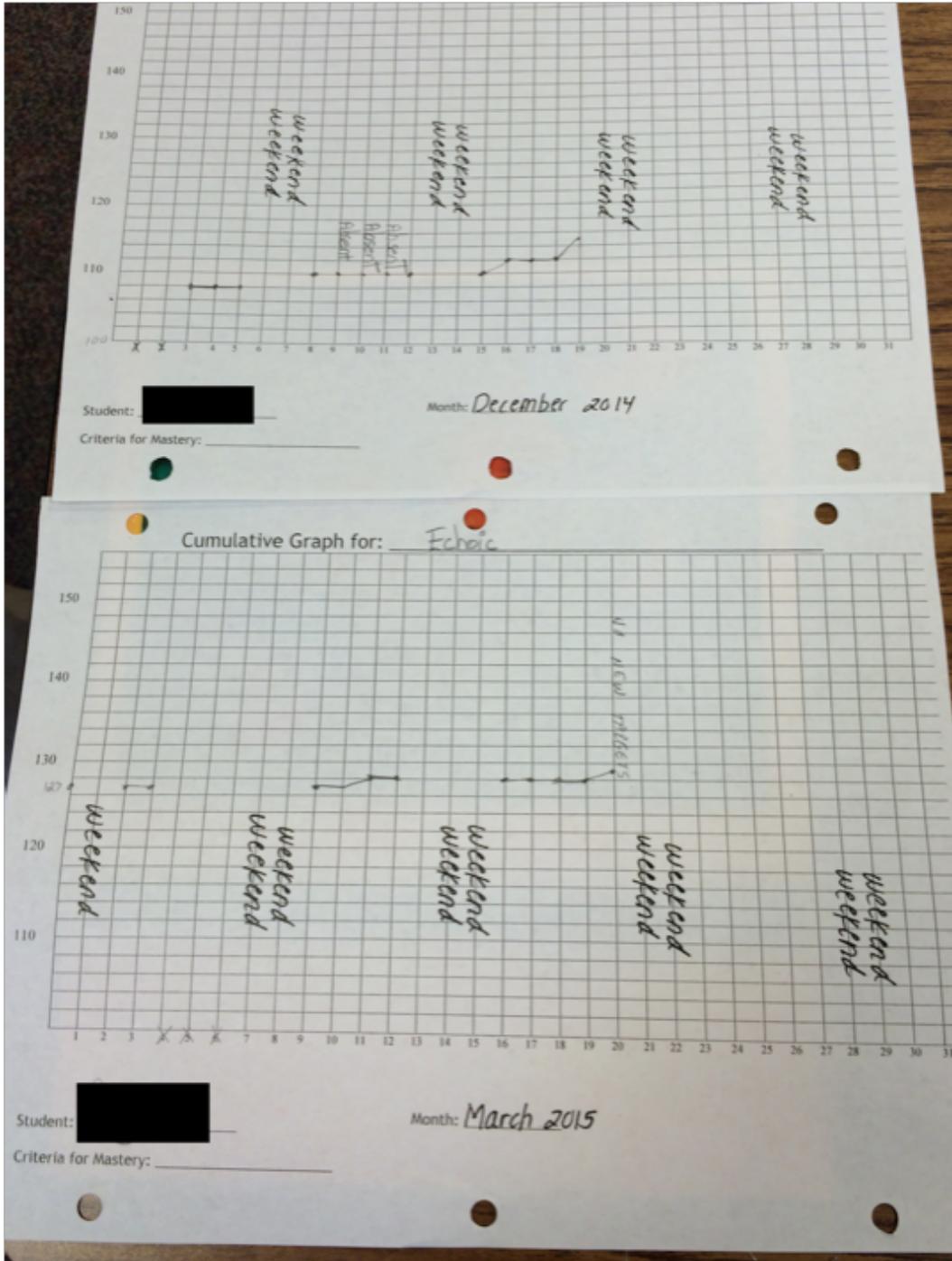
Appendix D:

This is James' Tact graph. The top graph shows his mastery from December 2014 and the bottom one is from March 2015.



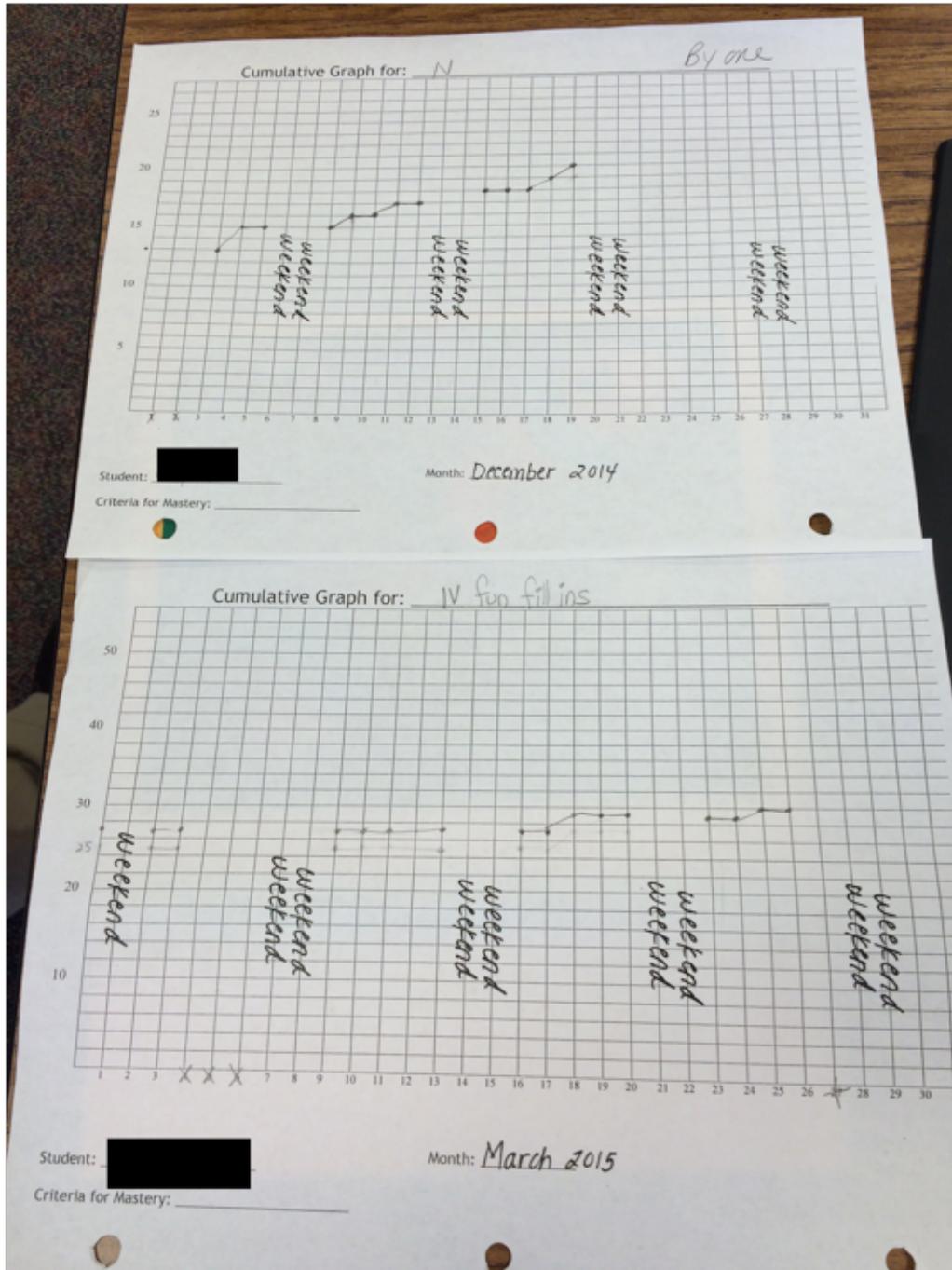
Appendix E:

This is James' Echoic graph. The top graph shows his mastery from December 2014 and the bottom one is from March 2015.



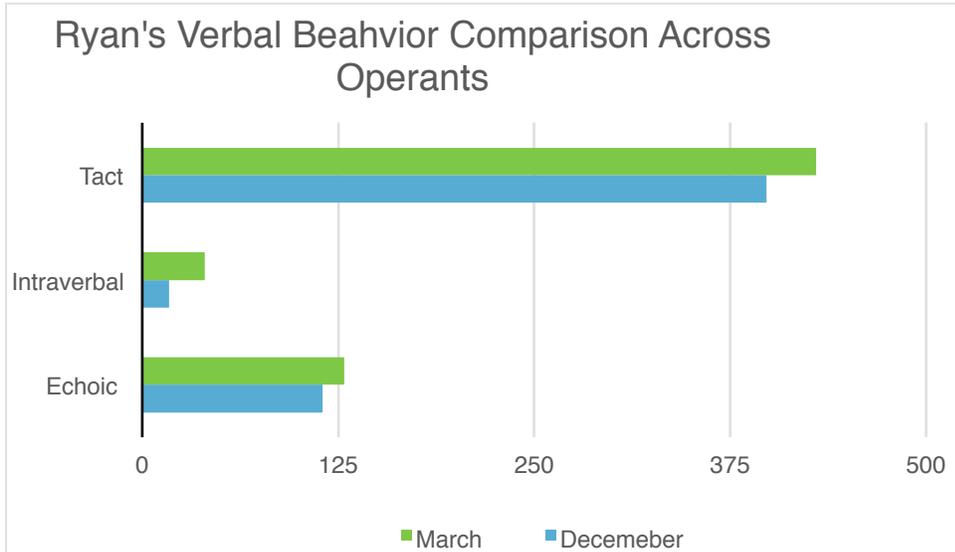
Appendix F:

This is James' Intraverbal graph. The top graph shows his mastery from December 2014 and the bottom one is from March 2015.



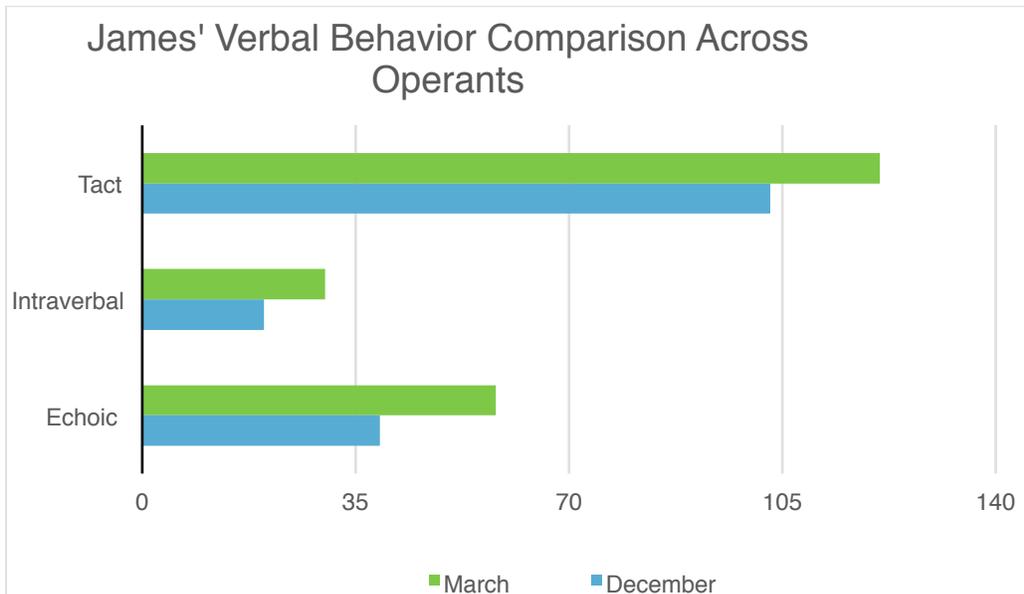
Appendix G:

This is a chart representing the comparable growth of Ryan's linguistic development across the operants.



Appendix H:

This is a chart representing the comparable growth of James' linguistic development across the operants.



Appendix I:

This is an example of the data collection that I used in the NET sessions with my students.

Previous Yes	Unprompted/ Prompted Responses	Targets	Date: 4/6/15	Date: 4/14/15	De
	UP: P:	mand: open	Y N/A	Y @ crab D W N book	Y N
	UP: P:	T duck	(Y) N	(Y) N book	Y N
	UP: P:	T umbrella	(Y) N	(Y) N	Y N
	UP: P:	LR duck	(Y) N	(Y) N book	Y N
	UP: P:	LR umbrella	(Y) N	(Y) N	Y N
	UP: P:	T closing	Y (N)	(Y) N book	Y N
	UP: P:	T opening	Y (N)	(Y) N book	Y N

References:

Data and Statistics. (2008, January 1). Retrieved April 15, 2015, from http://www.portal.state.pa.us/portal/server.pt/community/data_and_statistics/7202

Verbal Behavior Therapy. (n.d.). Retrieved April 15, 2015, from <https://www.autismspeaks.org/what-autism/treatment/verbal-behavior-therapy>