

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Can the Lindamood-Bell LiPS reading program be used with a student who has autism and has  
trouble staying on task?

A graduate project submitted in partial fulfillment of the requirements

For the degree of Master of Special Education

In Educational Therapy

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## Abstract

Can the Lindamood-Bell LiPS reading program be used with a student who has autism and has trouble staying on task?

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Maya Lynn Erman

Master in Special Education

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This action research study examined the use of the Lindamood-Bell© LiPS<sup>®</sup> reading program with students with autism spectrum disorder (ASD). Although there is significant evidence that many students with ASD, have a low mental lexicon preventing them from making the transition from oral language into reading, they do make the connection from reading letters and sounds to blending them together to read a word. Research has shown that after when working on phonemic awareness with a student with ASD, a benefit is that he or she has an easier time blending and decoding words in a book. Because the No Child Left Behind Act of 2001 (NCLB ) requires students with ASD to perform at a higher level than previously required, the federal Department of Education (DOE) allows only 1% of students to be exempt from taking standardized tests and the ASD population continues to rise (No Child Left Behind [NCLB], 2002). Therefore, teachers need new strategies to help students with ASD succeed on these tests. Since this is an ongoing problem, educators need to find a different approach to helping students with ASD not only learn to read, but comprehend what they are reading. Using the Lindamood-Bell reading programs may help a student with ASD.

## **Chapter 1:**

### **Introduction**

Today, more students than ever are entering schools with Autism Spectrum Disorder, (ASD), thus forcing educators to better train themselves about the behaviors, symptoms, and language skills of students with ASD (Loiaconoast & Valentiast, 2010). Evidence indicates that five times as many children and youth with ASD were served under the Individuals with Disabilities Education Improvement Act (IDEA, 2004) in the 2006-2007 school year, than had been given services 10 years before (Loiaconoast & Valentiast, 2010). The number of children diagnosed with ASD has grown at a rapid rate within the last 20 years (National Center for Educational Statistics, 2011). In California, Los Angeles Unified School district offers their teacher interns the option to take ASD related classes to ensure the best education for students with ASD (Los Angeles Unified School Disrict, n.d.). The California Teachers Corps announced in February 2010 that they will partner with California school districts to educate 25,000 veteran special education teachers on ASD (Fine, 2010). This is on top of the new California Commission on Teacher Crediting (CCTC) regulation that all teachers who work with students with ASD have appropriate certification to do so (Fine, 2010). Universities have added optional certification programs for students to add to their Bachelors or Masters degrees. This mandate was put in place with the idea that students with ASD are going to be in every classroom, so every teacher needs to have the right skills and strategies. General Education teachers may face difficulties teaching a mainstreamed child with ASD. The Lindamood-Bell© LiPS<sup>®</sup> (1998) program is one program of many that teaches students phonemic awareness (PA) skills. These skills are a necessity for a student with ASD. Can the Lindamood-Bell© LiPS<sup>®</sup> reading program be used with a student who has autism and memorizes his reading? This program is an intensified phonics-based program that teaches each step of reading explicitly.

“Reading is a language skill required for individuals to be fully functional and independent” (Bursuck, Munk, Nelson, & Curran, 2002, 4-9). Students with ASD who are struggling to learn to read may not have the ability to function independently within a general education classroom. This may cause them to have trouble with language acquisition and learning to read (Gabig, 2010). Many students with ASD struggle sounding out words and blend sounds together (Gabig, 2010). If a student with autism has a speech delay or lack of speech, common symptoms of ASD, then he/she may also experience difficulty with decoding and reading comprehension (Gabig, 2010). A student with these symptoms would be a good candidate for one of the Lindamood-Bell© reading programs, in particular LiPS<sup>®</sup> or Talkies<sup>®</sup> (2006).

## Chapter 2:

### Literature Review

#### *The Lindamood Bell Phoneme Sequencing<sup>®</sup> Program for Reading, Spelling and Speech*

*(LiPS)*

LiPS<sup>®</sup> is a supplemental reading program designed to address phonemic awareness (PA), phonemic decoding, orthographic processing, and sight words with an auditory feedback component that enables individuals to identify, sequence, and map letters to phonemes (Arndt, 2006).

The Lindamood-Bell<sup>©</sup> phonetic sequencing program for reading, spelling and speech (LiPS<sup>®</sup>) was developed by Patricia Lindamood and Phyllis Lindamood in the late 1960s, under the name *Auditory Discrimination in Depth (ADD)*, and was renamed LiPS<sup>®</sup> in 1998. The main purpose of this program is to stimulate phonemic awareness (PA). The LiPS<sup>®</sup> program emphasizes explicit instruction in phonemic awareness and phonemic decoding skills (Torgeson, Wagner, & Rashottel, 1997). This awareness is taught through various activities that are meant to enhance auditory discrimination and increase understanding of the mouth actions that produce speech sounds. LiPS<sup>®</sup> focuses on a feedback system that promotes self-correction by emphasizing the tangible differences in the way sounds are formed. The program begins by assisting students in identifying the correct placement of the tongue, lips, and mouth in order to produce certain sounds. Students then work on connecting the phonemes to graphemes, followed by ordering the sounds within words that are decoded (i.e., reading) and encoded (i.e., spelling). Finally, these skills are generalized to word recognition, identifying letter patterns, and reading with context clues.

Students with ASD often have a phonological lexicon that is stronger than that of sight

word decoding and reading comprehension scores (American Psychiatric Association, 2000) but a below average mental lexicon is also a common trait (Gabig, 2010). A mental lexicon contains stored concepts of vocabulary, phonologic structure, spelling patterns, and visual orthographic form and meaning (Gabig, 2010). Although many students with ASD have high functioning decoding skills they often have lower comprehension skills than expected for their reading level (Huemer & Mann, 2010). Weak phonemic awareness (PA) is a common cause of decoding and encoding problems. Ehri et al. (2001) refer to various training studies, which show that children who are taught phoneme segmentation and letter name and sound identification when they begin to learn to read improve more rapidly than children who do not receive this instruction. Learning these skills provides students with access to the alphabetic writing system of the English language. Students with reading disabilities (RD) are at a further disadvantage and often struggle immensely with PA, exacerbated by difficulties with articulation and short-term memory for sounds (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh & Shanahan, 2001). The LiPS<sup>®</sup> program aims to remediate issues with PA by teaching students how to add, omit, substitute, and reverse sounds and letters within words (Arndt, 2006).

Because LiPS<sup>®</sup> requires intense instruction in PA, it can be assumed that many students who would benefit from LiPS<sup>®</sup> need to be explicitly taught PA. This includes sound discrimination and the ability to “play” with phonemes. Many struggling readers require prolonged exposure to these skills. Although the program is useful for older struggling readers, it appears to be most beneficial for younger students, in part due to the fact that older students may not be as willing to spend such a significant amount of time working on sound articulation and identification (Svab, V., Personal Communication, August 8, 2010). Torgesen, et al. (1997) and Worthington, and Jamison (2004) assessed the LiPS<sup>®</sup> programs by



testing students' progress learning PA. Pokorni, Worthington, and Jamison (2004) researched the LiPS<sup>®</sup> program with 9-year old students with reading deficits. They used multivariate analysis of variance (MANOVAs) measures on the pre and post-test scores, which were grouped by PA, language, and reading-related skills. They found that “the significant Group by Time difference for PA was attributable to the LiPS<sup>®</sup> intervention that demonstrated greater effectiveness in teaching blending of phonemes”. In regards to individual intervention results, the LiPS<sup>®</sup> groups “increased significantly” in the areas of phoneme blending and phoneme segmentation, two critical aspects of PA. In a study done by Torgesen, et al. (1997), which looked at LiPS<sup>®</sup> and *Read, Write, and Type*<sup>TM</sup> (1994) the findings were positive. This study included 104 first grade students struggling with reading. The results showed that students made remarkable gains in word attack, word identification, and passage comprehension using either program, with slightly better results achieved using LiPS<sup>®</sup>. The discrepancies in the results found in these two studies may be attributed to the differences in time. Torgesen et al. study utilized the program for less time per day (i.e. 100 minutes versus 180 minutes), but lasted longer (8 to 9 weeks versus 4 weeks). This may have allotted students more time to generalize their skills to reading effectively. Additionally, the students in the Torgesen et al. study worked one to one and the students in the Pokorni et al. (2004) study worked four to one. Numerous studies speak to the increased effectiveness of working with small groups. For example, O'Connor and Bell (2004) note that “little data exists to support teaching reading to students with learning disabilities in groups much larger than three” (p. 491).

Other studies have been conducted exploring the potential of LiPS<sup>®</sup> instruction in beginning readers. McIntyre, Protz, and McQuarrie (2008) wanted to determine if PA skills improved for students classified as at risk in the first grade using the LiPS<sup>®</sup> program. Their

findings showed that all students in the program made gains in PA and letter/sound correspondence, but greater gains were made for students who were classified as at risk and whose teachers used the LiPS<sup>®</sup> program. It is important to note that even though all students in this study were working on PA, the students who made the greatest gains were the ones who used LiPS<sup>®</sup>. The LiPS<sup>®</sup> program has a basis in sensory-cognitive processing and is intended to improve word decoding and encoding efficiently and accurately (Lindamood Bell, 1998).

Although LiPS<sup>®</sup> is no longer used widely by the Lindamood-Bell© Learning Centers, the program has many benefits that help students over time (Svab, V. (Personal communication, August 8, 2010). It is no longer used because of the time commitment required by the students/teachers participating in LiPS. This program will not give results in a week, but needs to be intensified over a long period of time to see the full effect. Even though the Lindamood-Bell© Learning Centers have scaled back their use of the LiPS<sup>®</sup> program and used other Lindamood-Bell© programs instead, such as *Seeing Stars*<sup>®</sup> (Arndt, 2006) or *Visualizing and Verbalizing*<sup>®</sup> (1986), the students who need the intensive PA work do benefit from LiPS<sup>®</sup>. *Seeing Stars* (1997) is a program designed to improve students' PA, fluency, sight word knowledge, and spelling through the development of symbol imagery. Perhaps the Lindamood-Bell© Learning Centers have decided that LiPS<sup>®</sup> is too limited in its application and that a broader program would be more successful. This is a recent change in the Lindamood-Bell© Centers. One great difference between the two programs is that *Seeing Stars*<sup>®</sup> was developed for use with students from kindergarten through adulthood (Arndt, 2006). Additionally, it claims to be appropriate for whole group instruction, as well as small group and one-on-one (Arndt 2006). The Florida Center for Reading Research (2006) reviewed the program, *Seeing Stars* and determined that there has not been sufficient "empirical demonstration of its effectiveness as a complete

program”; more data is needed. The center does list one weakness of the program relating to the manner in which short vowels are introduced and the stage of their introduction into the program. (Arndt, 2006).

As the various program for Lindamood-Bell© were created, the founders conducted research on an individual program basis. Over the years this research has not been updated by Lindamood-Bell©. The most current research has been conducted by Dr. Joseph Torgesen, who conducts research for The Florida Center for Reading and Research.

The Florida Center for Reading and Research (FCRR) has conducted multiple studies on the LiPS<sup>®</sup> program. One article in particular is titled *What is LiPS<sup>®</sup>?* and written by Elissa J. Arndt (2006), an FCRR researcher, presents a thorough review of the LiPS<sup>®</sup> program, including many pros and only one con about the program. The LiPS<sup>®</sup> program is a research based program developed to create fluent readers and competent spellers. Among the pros is that the LiPS<sup>®</sup> program can be used for multiple uses, for example as a preventative tool, to supplement a core reading program, as a standalone program, or as an intensive intervention. When used as an intensive intervention the recommended procedure is to work with the student two to four hours a day, five days a week for six to eight weeks. This presented a challenge in schools due to time constraints and difficulty freeing up faculty to facilitate the program. Because of the intensity of the program the student learns each skill completely. Arndt (2006) comments that, with proper training, the instructional content in the LiPS<sup>®</sup> program is not only simple to administer. The manual provides dialog to help the trained administrator to accurately facilitate each step of the program. The one con that Arndt (2006) mentions are the flexibility of the training. The Lindamood-Bell© LiPS<sup>®</sup> program training is three days long, and is only offered a few times a year in various parts of the country. In order to administer any Lindamood-Bell© program successfully, including LiPS<sup>®</sup>, one must complete all the training requirements.

Lindamood-Bell© conducts its own research every year, especially in the summer when the Learning Centers have an influx of students. This research is not based on each individual program, but rather the students enrolled in the programs at the Learning Centers. The students are each administered a variety of well established, standardized assessments and from this data a summary of the strengths and weaknesses from all students is created. Each summer the Lindamood-Bell© Learning Centers assess each client before they start their planned courses, as well as at the conclusion. This student progress is the data that is collected, analyzed, and posted to their website.

Some techniques or ways of measuring students progress need to be developed to fully grasp how different learners respond not just to the LiPS<sup>®</sup> program, but to the other Lindamood-Bell© programs as well. Students with different attention spans and different learning needs will respond to the format of each program in different ways. Some techniques to help measure a students' progress in each program are games and activities based on the nature of each program. In this action research project, it is important to include information about how students with ASD respond to not only the LiPS<sup>®</sup> program, but also to learning the basics of reading and PA. It is also important to research how the LiPS<sup>®</sup> program is implemented, in the classroom versus a private one-on-one setting.

In the next chapter I will examine some ways to make the LiPS<sup>®</sup> program more engaging to students. When using the LiPS<sup>®</sup> program in a special day kindergarten class, I discovered that the two boys who had ASD struggled with step one of the program, Brother Pairs. Their attention was lost almost instantly and they verbalized not liking the program. I recognized a pattern when another kindergarten boy with ASD struggled learning the Brother Pairs as well. My thesis project developed from these observations and aims to help young

children learn the first step of the LiPS<sup>®</sup> program with added supplements. The games I created are to be used as a supplement to the program.

### **Chapter 3**

These games have been created for students with special needs who do not respond well to the traditional LiPS<sup>®</sup> activities. The card game of War was created for students who need to practice letter and sounds correspondence. Go Fish was created for students who need more practice on determining which letters create Brother Pairs. The board game, Coolie Coller Village is intended for students who need to practice their concept imagery skills. Lindamood-Bell<sup>©</sup> emphasizes concept imagery and using the imagination. These games support the LiPS<sup>®</sup> program by adding repetition to the beginning steps. They give the student a variety of options to learn and practice. By adding different ways to practice the beginning of the LiPS<sup>®</sup> program the program becomes more fun and enjoyable. It also adds fun to the program so the students are able to be more attentive for a longer period of time.

### **The Project**

After completing the Lindamood-Bell<sup>©</sup> LiPS<sup>®</sup> Training and implementing the program with a variety of students I realized what it was lacking to be successful with some students. Using the LiPS<sup>®</sup> program in a one to one setting helped me realize what I could do to help my students become successful. I created these games to enrich the content and make it more engaging to the learners. Each game was created for a different purpose, a learner, and learning style. All three of the games are based on childhood games that children should know about. There is a Go Fish game, a game of War, and an adaption of Candy Land called Coolie Cooler Village. These games were evaluated by two educational professionals to determine how the games might work with students. Both educational professionals either have students with ASD in their classrooms on a day-to-day basis or work with students with ASD in a private

setting. The professional educators had the rules explained to them, played the games, then filled out an evaluation form.

### **The Games**

The card game war is not a game of strategy; it is a game of recognition. When first working with a student to teach them to read the educational therapist needs to assess what the student knows and what the student does not know. This game was created to help assess the necessary information. Each card has an uppercase letter or a lowercase letter written on it. There are four cards per letter, two uppercase and two lowercase. The objective of the game is for the student to correctly identify each letter and each sound. This will tell the educational therapist that the student can correctly identify each letter and knows the sounds each one makes.

War is a two player card game. The academic purpose if the War is to help young learners learn sequencing and swift decision making. There are 104 cards in the deck and the deck is split in half between the two players. Players do not look at their cards but keep them in a pile face down. Both players turn their first cards face up and put it on the center of the table. The card that is higher in the alphabet or an uppercase letter wins. The player that wins the pair takes the cards and adds them to the bottom of their pile. If the cards are the same letter and case there is a war. When war happens both players put three cards face down and the fourth one face up. The higher letter face up wins everything on the table. When a card is put down the players need to say the letter and its sound. The game continues until the players run out of cards or the student has fatigued. A component that can be added as the student is learning the brother pairs (each consonant have a quiet and nosy letter=brother pair) is for the student to say if the sound is a noisy or quiet sound and what the brother pair is.

The game of Go Fish is not a game of strategy like War is. It is a game of chance and

luck designed to increase students' skills in pairs of voiced and unvoiced consonants. Go Fish is to be played with two people (player A and player B). Each player receives seven cards while the rest of the deck is put in the middle, to be used as the "fish". Once the players have their cards they do not show them to anyone. They look at their cards and organize them in order of the alphabet. To start the game the youngest person (Player A) asks player B "Do you have the brother pair to Z", both players need to know what the brother pair to Z is. If player B has the card they must give it up, if they do not they say "Go Fish" and player A takes a card from the center pile. If player A receives the card he/she takes the brother pair and sets it down in front of him. Those two cards are now out of play. Once the deck is finished and both players have counted their brother pairs the player with the highest number of pairs wins.

Go fish is a game that was created to use after the student has done part one of the LiPS<sup>®</sup> program, learning all the brother pairs. This is a game of recognition, memorization and practice. When teaching a student to read the educational therapist has to create ways to help the student put the information into long term memory. This game was created to do just that. Each sound has its own card with a letter written on it. The objective of the game is for the student to correctly identify each pair quickly. This will tell the educational therapist that the student has learned the pairs and are ready to move on to the next step.

In the Lindamood Bell<sup>®</sup> LiPS<sup>®</sup> program tiles and concept imagery play an integral role in the learning process. These concepts have been taken a step further and added in earlier in the game. This is to teach the student earlier on in the learning process how to imagine the letters and how to play with tiles as well as to teach and practice the letter sounds and brother pairs. Each brother pair has a noisy sound, a sound that is noisy when spoken and a quiet sound, one



that is quiet when spoken. For this board game each player has a game piece and a pile of tiles to share. On each tile there is a letter that player 1 shows to Player 2. The object of the game is for the player to get across the board first by knowing the most letters. The player 1 goes first by picking a tile at random and air writing the letter, saying its brother pair, if it is a quiet sound or a noisy sound, if it is a vowel or consonant, and the sound the letter makes. If everything is correct player 1 moves however many spaces on the board the letter is worth. The letters are worth different amounts in relation to their use in the English language.

Letter	Value
A, E, I, O, U, L, N, S, T	1
D, G, B	2
C, M, P	3
F, H, V, W,	4
K, J, Y	5
X, Q, Z	6

The board has obstacles on it, for example, if a player falls on the square that leads them through brother's alley then they get to cross the alley and skip some of the board. If the player lands on Lifter City they go ahead one space on the board. At Tip Tapper Bridge the player goes across the bridge. But a player can land in the Wind Tunnel and have their next turn skipped. At the Light as Air Airport the player skips ahead two spaces. If a player lands on Noisy village they are stuck there until they pick one of the three noses sounds. When landing on tongue scraper field the player has to go back two spaces. The directions for the game are as follows:

### “Coolie Cooler Village” Rules

Grab your bike and take an adventure to Coolie Cooler Village! Be careful not to run in to too many obstacles set out along the way. Brother’s alley lets you skip some of the path. Lifter City allows all of its visitors to go ahead one turn but not all obstacles are as nice as that. Once you get to Tip Tapper Bridge be careful...the bridge is unsteady. Past Tip Tapper Bridge you will hit the Wind Tunnel, hold on to your hat, it may fly away! Here you skip a turn. While biking to tongue scraper field be careful not to land on the tongue scraper, if you do you will have to go back two spaces. As you ride up to Light as Air Airport you get to skip two spaces on an airplane! Your last obstacle, noisy village does not want you to make it to Coolie Cooler Village.....stay here until you pick a nose sound, then move on.

With the letter tiles face down one player picks one at random and shows their opponent. The opponent has to air write the letter, say the brother pair (if it is a consonant), recite if it is a vowel or a consonant and if it is a quiet or noisy sound, and know the sound. Each letter has a number correspondent; if the player says everything correctly they get to move that many spaces on the board.

Letter	Value
A, E, I, O, U, L, N, S, T	1
D, G, B	2
C, M, P	3
F, H, V, W,	4

K, J, Y	5
X, Q, Z	6

Each obstacle on the board is there to help and trick the players. Brothers Alley allows the player to cross the alley, Lifter City allows the player to have two turns. At Tip Tapper Bridge the player crosses the bridge. When a player lands on the Wind Tunnel they skip a turn and Light As Air Airport skips two spaces. Lastly at Noisy Village the player is stuck until a nose letter is chosen.”

## Chapter 4

### Evaluation

One of the most important steps when creating games is to evaluate them by a group of professionals in the field. All three games that were created for the LiPS<sup>®</sup> were evaluated by a group of educational professionals ranging from tutors to high school teachers, all having previously worked with students who would benefit from a program similar to LiPS<sup>®</sup>. Pseudonyms were used. The evaluation questions were as follows:

#### Evaluation Form

Please fill out the form. If you would be detailed with your comments, that would help make it more useful. I will take some quotes from each evaluation for Ch 4, evaluation section. Thank you so much for your help!

Name:

Non educational therapy profession:

Can I include you in my thesis? Yes No

1. Can you see yourself playing any of these games with your students whether it be in a classroom setting or private setting.
2. What are the strengths of the games?
3. What are some things the games lack?
4. What could make the games better?
5. What would you add to the games?
6. What age population do you work with?
7. What age would you recommend I use this with?

8. Do you feel any of your students would benefit from these games?

Jane, an educational therapist in Sherman Oaks, California stated when asked question 1 that she could see herself using these games in a private setting. Kate, a high school English teacher out of Torrance said she also could see herself using these activities in a private setting with the students she tutors, but not in her high school classroom with her students that struggle. When answering question 2, Kate stated that a strength is how “recognizable” the game pieces are and that it “doesn’t seem like learning (more like fun)” and it “targets specific skills” that the student needs to strengthen. Jane liked the fact that the games (all three games) focused on “alphabet awareness and letter-sound correspondence”.

When answering the questions about what the games lacked or both Jane and Kate stated that the games need typed rules and visual cues as a reminder for the players. Another suggestion to make the game better was to have varying direction to make the game adaptable for students of all ages. When answering question 8, “Do you feel any of your students would benefit from these games?” Jane answered “Yes- my students who struggle with reading, remembering, letter-sound correspondence and learning the alphabet. And Kate stated “Not mine in particular-it’s best for those with lower skills.”

## Conclusion

Now more than ever it is not unusual to have a student with ASD in a mainstreamed classroom. Teachers are forced to better educate themselves on the mannerisms, behavior, symptoms, and language skills of students with ASD so they are prepared for any student who walks into their classroom. Students who struggle, whether they are a student with ASD or not can benefit from the Lindamood Bell<sup>®</sup> LiPS<sup>®</sup> program. The Lindamood Bell<sup>®</sup> LiPS<sup>®</sup> program was created to build fluent readers and competent spellers. Today's teachers can become trained in the Lindamood Bell<sup>®</sup> LiPS<sup>®</sup> program and use it in their classrooms. But due to time constraints and lack of resources, teachers do not always use it as in intensive intervention in their classrooms but use the program to aide in teaching reading.

This researcher realized from previous experience that using the LiPS<sup>®</sup> program could be beneficial for young students with ASD but it had a few flaws. The beginning steps for the program are suited for a student who can sit and learn for the length of time necessary to review the sounds that each "brother" or pair makes. The students that the researcher was working with were not able to sit and review the sounds; therefore games were created to help the students learn the necessary steps to read.

Each game is modeled after a popular child's game and uses skills a child needs to learn, work on, or master at a young age. War is a game of strategy and helps develop a child's recognition of the letters and their memory of each sound. The game of Go Fish is one of chance and luck. This game helps students practice what they have learned and store the information into long term memory. Coolie Cooler Village is modeled after Candy Land<sup>®</sup> and was created to help the student in concept imagery. These three games were developed to help the student learn the first steps of the Lindamood Bell<sup>®</sup> LiPS<sup>®</sup> program and to extend the

attention span of a child so they don't forget what they are learning and are having fun in the process.

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