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# Is the competent learner model effective for students with autism?

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**IS THE COMPETENT LEARNER MODEL EFFECTIVE FOR STUDENTS WITH  
AUTISM?**

by

Christopher O'Brien

A Thesis

Submitted to the  
Department of Interdisciplinary and Inclusive Education

College of Education

In partial fulfillment of the requirement

For the degree of

Master of Arts in Special Education

at

Rowan University

May 1, 2016

Thesis Chair: S. Jay Kuder, Ed.D.

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## **Dedication**

I would like to dedicate this manuscript to my special needs students who have shown me that education needs to be individualized for true understanding.

## **Acknowledgements**

I would like to express my appreciations to two outstanding and dedicated professors who have been strong supports and advisors throughout this educational endeavor, Dr. Joy Xin and Dr. S. Jay Kuder. The knowledge and skills that have been bestowed onto me have been and will continue to guide me as I continue on my career in education.

## **Abstract**

Christopher O'Brien  
IS THE COMPETENT LEARNER MODEL EFFECTIVE FOR STUDENTS WITH  
AUTISM?  
2015-2016  
S. Jay Kuder, Ed.D.  
Master of Arts in Special Education

This study examined the effectiveness of an alternative instructional strategy (Competent Learner Model) for enhancing the social interactions of a student with autism. One eight-year old student with autism participated in this study. He was assessed for initial levels of functioning in each of the five repertoires using the Competent Learner Repertoire Assessments of the Competent Learner Model. Following the initial results, varied generalized instruction in each of these domains began. Methods of instruction utilized direct teaching (DT) as well as peer-teaching as part of the generalized concept. The results showed impressive improvement for four out of the five repertoires being addressed by this study. Overall results of this study indicated 80% growth of a single numerical rise in competency levels while he showed greater growth in two specific domains of social interactions. Additionally, 40% growth of the social domains being studied showed a rise in competent levels of two numerical rises.

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## **Chapter 1**

### **Introduction**

If there is one argument that can be made time and time again, it is that students with an ASD disorder, like typically developing students need to be actively engaged in the world around them. History tells us egocentric traits exist in a student with Autism, or so it is often seen by others. If you let the child do that they are not going to develop (Grandin, as cited in Edelson, 1996, p. 1). Children with autism often are not truly engaged in academic or social tasks (Ochs et al, as cited in Koegel, Singh, & Koegel, 2010). When exposed to uninteresting tasks/ situations, these children can often have mild to moderate disruptive behaviors for various functions, avoidance or escape being the more prevalent reasons (Ochs et al, as cited in Koegel, Singh, & Koegel, 2010). When the maladaptive behaviors occur, the children miss key learning and social opportunities presented to them.

#### **Statement of Problem(s)**

Active or engaged participation is essential to children with autism as it is for their respective counter-parts; they are expected to engage in these skills both in and outside the classroom. Without participation skills, children are at a disadvantage when it comes to school and other settings, such as extracurricular activities and the workforce. Social skills are abilities that are particularly problematic for children with autism. Participation is one such social skill that can be especially difficult for children with autism. It is also receives little attention in terms of interventions in the school systems. Often students with this kind of delay are treated privately outside the school district as most schools are

focused on academics and this leaves little time to teach social skills. With the rates of autism climbing to 1 out of every 86 children, 1 In 45 in my home state of New Jersey alone (CDC 2015), it is even more imperative that the social needs of these children be addressed in the schools. There are recent research that has shown that positive interventions available that aim to improve the social skills of children in the home and in the school. These interventions can be delivered in varying forms such as the primary caregiver as the interventionist, the specialist as the interventionist, and naturalistic interventions. A significant portion of those intervention support programs exist in specialized or private districts with few in existence in public schools. Research has also demonstrated that when primary caregivers were the interventionists there has been increased generalization and the maintenance of skills overtime (Leach & LaRocque, 2011).

### **Significance of the Study**

In addition, increases in the functional developmental level of their children have also been shown. In a joint-attention study conducted by Kasari, Gulsrud, Wong, Kwon, and Locke (2010), it was found that caregivers could help their children improve in their responding to joint attention and in the diversity of their play. Kasari et al. (2010) study found that children in the immediate treatment (IT) group engaged in significantly less object-focused play, showed greater responsiveness to joint attention, and displayed significantly more types of functional play acts compared to the waitlist control (WL) group (Kasari et al., 2010). Although intervention programs where the primary caregiver is the interventionist have been shown to have their benefits, there are also disadvantages. In order to be effective, primary caregivers need to be provided with structured and

consistent support, guidance, and 3 explicit instructions on the interventions to be used (Leach & LaRocque, 2011). They also need to be properly implementing the intervention (Kasari et al., 2010). When the specialist serves as the interventionist, intensity is the key. The intensity of these interventions usually involves 30-40 hours of week (Weiss, 2001).

### **Problem(s)**

Approaches that involve specialists, guiding Applied Behavior Analysis (ABA), are the most cited autism interventions, the most requested and implemented in public schools, and have some of the highest social validity (Callahan, Shukla-Mehta, Magee, & Wie, 2010). ABA is one of the most well-known and studied approaches to helping children with autism learn. ABA has had several decades of development and use with students with autism. It is scientific approach to understanding behavior and how the behavior is affected by the environment (Autism Speaks, 2010). The core principle of instruction within ABA is Discrete Trial Training (DTT). DTT is a method that individualizes and simplifies instructions in order to enhance children's learning. DTT as well as other types of ABA interventions may not be practical in classrooms with a larger teacher-to-student ratio because they are labor intensive. As with any labor intensive program, cost per student, or overall cost billed to schools/ insurance companies skyrocket. These therapies can cost \$25,000 to \$60,000 per year (Solomon et al., 2007). These types of treatments can become very expensive, since it is recommended that their duration be over a few year period. Creating an environment that is rich with opportunities to apply social skills is exceptionally important for acquisition of new skills and generalization (Sperry, Neitzel, & Englehardt-Wells, 2010). Such supports only bolsters the claim that

naturalistic environments or appropriate play theory an important role for in the treatment of children with autism.

### **Purpose of Study**

Specifically examining the natural environment, the capacity of family, caregivers, and teachers are supported and enhanced. The Competent Learner Model (CLM), developed by Vicci Tucci, is an intervention that utilizes the natural environment of the school and rearranges it in order to increase social skills. The CLM addresses similarly appropriate goals of ABA, such as increasing attention, play, social, self-help, academic, and language skills; however it addresses these goals through teaching children with autism “learning to learn” competencies (Tucci et al., 2005). The CLM teaches learners to become competent observers, listeners, talkers, problem-solvers, participators, readers, and writers. The current study examined the Competent Learner Model (CLM) and its effects on three students’ participation skills in an autistic support classroom. This study focused on the participation skills of children with autism in the structured setting of the classroom. The participation curriculum was comprised of tasks that required the learners to be teacher-directed, self-directed, peer-directed, and non-directed in his or her interactions, all of which were examined in this study.

The participation skills of three middle school-aged boys who were diagnosed with autism and were receiving support in an autistic support classroom were studied over a six month period. These children with selected due to their current diagnosis of autism and their placement in an autistic support classroom. The classroom teacher and 5 paraprofessionals delivered the CLM intervention after being trained by the CLM internal

coach. The internal coach was the school psychologist utilized for the school district. The data was collected using the Competent Learner Repertoire Assessment (Tucci, 2005). The Competent Learner Repertoire Assessment (CLRA) (Tucci, 2005) monitors the progress of each student as he or she progress through each participation task. The CLM Performance Assessments, also known as the Competent Learner Repertoire Assessments (CLRAs) provide a profile of the student's strengths and weaknesses across the CLRs. A CLRA is an instructional-based assessment tool that is used to determine if a learner has mastered the repertoires in CLM to the desired level of proficiency (Tucci & Hursh, 2004).

Base-line participation levels are established for each child based on the CLRA. The CLRA was completed again at the end of the study. In addition to the CLRAs, adaptive measures were also completed. Either the Vineland-II or the ABAS-II was used to assess the area of social skills/socialization of the students at the end of the study. Each student was considered separately and not compared to the other students in the study. The purpose of this is to see the child as a whole and the progress each made throughout the study. Background information, baseline as well as post test were evaluated, teacher information and present levels were provided for each child. This study was an investigation of whether the Competent Learner Model's (Tucci, 2005) method of teaching participation skills to students when provided by the classroom teachers and autism support aides in the classroom could result in increased participation of students with autism within their classrooms. It was hypothesized that the CLM would increase the participation levels of students with autism.

## **Chapter 2**

### **Literature Review**

When children participate and are actively involved in school and in their interactions with others they gain information about the world, learn the roles of society and the culture, and learn skills to evaluate situations (Zingerecich & LaVesser, 2009). We must take a moment and examine what social cognition is exactly. It is a child's ability to spontaneously read and correctly interpret verbal and nonverbal social and emotional cues; the ability to recognize central and peripheral social and emotional information; the knowledge of different social behaviors and their consequences in diverse social tasks and the ability to make an adequate attribution about another person's mental state (i.e., "theory of mind" abilities)" (p. 283). Bauminger (2002) Given the information thus far, we can surmise that children with autism also potentially will display difficulty with the Theory of Mind concept as well as with the application of such concept(s).

This is the ability to think about what another person what might be thinking (Bauminger, 2002). Because of their difficulties with social cognition, they also face difficulties when it comes to social interactions. Social interactions are defined as "a reciprocal process in which children effectively initiate and respond to social stimuli presented by their peers" (Shores, as cited in Bauminger, 2002, p. 284). It has been recognized that children with autism often have a low frequency of peer interaction and poor quality in the interactions that they do have (Bauminger, 2002). Without participation skills, children are at a disadvantage when it comes to school and other settings, such as extracurricular activities and the workforce. Unfortunately, participation

is often difficult for children diagnosed with autism spectrum disorders (ASD) yet it is a task that is required in many areas.

The difficulties children with autism experience with expectations to participate can be seen in the home, school, and community setting. Since this study focused on the participation skills of children with autism in the structured setting of the classroom, this literature review includes the characteristics of autism, how autism affects social skills, with an emphasis on the social skill of participation, and research interventions that have been shown to increase social skills in children with autism. Behavioral Characteristics of Autism The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-V, 2013) discusses pervasive developmental disorders, which include autism. According to the DSM-V, pervasive developmental disorders are “characterized by severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests, and activities” (DSM-V, 2013). The impairment in the area of reciprocal social skills includes difficulties in interpreting what other people are feeling or thinking, recognizing social cues, avoidance of eye contact, and difficulties understanding tone of voice and facial expressions (National Institute of Neurological Disorders and Stroke, 2010).

Children with autism often are unsuccessful at building developmentally appropriate relationships with their peers. This results in part from a perceived indifference to the interests of others which is often demonstrated. Children with autism will often respond to communication attempts by their peers by talking about something of interest to themselves rather than engaging in a reciprocal interaction. Children with



autism cannot carry on a conversational interchange of thoughts and information about the same topic with another person (National Institute on Deafness and Other Communication Disorders, 2010). According to the DSM-V, children with autism have deficits when it comes to spontaneously seeking to share enjoyment, interests, or achievements with others.

They may have delayed or a total lack of spoken language. They may exhibit social impairments that can be seen in the lack of spontaneous make-believe play or imitative play that is appropriate to their developmental level. Their ability to focus on one topic to the exclusion of other topics is one way in which children with autism persevere. Perseveration, or the uncontrollable repetition of a particular response, can take on different forms depending on the child. Some forms include, repetitious vocalizing, hand-flicking or wrist-turning, and reenactments (Siegel, 2003). Children who are perseverating often are not receiving new stimulation (Siegel, 2003). When children are not receiving new stimulation, they are not learning how to habituate to new activities, people, and situations. This can then lead to difficulty with classroom tasks and transitions. Social interaction and communication are usually the areas that are most severely affected in children with autism (Bauminger, 2002).

A child with autism has a difficult time understanding what other's expectations are, particularly when it comes to the social behaviors of initiating conversations, negotiating needs, and understanding consequences (Bauminger, 2002). They do not understand what composes an appropriate social interaction. This is where the application of DTT or a CLM method would be applied to the IT groups. The parents of a child with autism usually begin to recognize some developmental delays or problems during their

child's first three years of life. Autism is congenital, therefore present at birth, but the signs are difficult to identify in infancy (Siegel, 2003). Some of the early indicators of autism are a lack of big smiles or joyful expressions by six months or thereafter, a lack of back-and-forth sharing of sounds, a lack of smiles or other facial expressions by nine months or thereafter, a lack of babbling by 12 months, a lack of back-and-forth gestures such as pointing, showing, reaching or waving by 12 11 months, no words by 16 months, no two-word meaningful phrases (without imitating) by 24 months, or any loss of speech or babbling or social skills at any age (Autism Speaks, 2010). In addition to these deficits as early indicators, children with autism may respond inappropriately to auditory, olfactory, tactile or visual stimuli (Kelly, Garnett, Attwood, & Peterson, 2010).

Prevalence According to recent studies, autism is said to affect 1 out of every 110 children, including 1 out of every 70 boys (Center for Disease Control [CDC], 2010). This is over a 600% increase in the past 20 years.

The improvement in diagnosing autism as well as discovering it earlier in children has accounted for some of the increase, but not all of it. Most parents express concerns about the development of their children before the age of 36 months, but the average diagnosis is made around the time the child is 53 months. This diagnosis is earlier than it had been in previous years. However, in 2007, the same methodology that was used in 2010 was used to assess the prevalence of autism, which at that time was 1 in 150 (Autism Speaks, 2010) Compare that to the current national statistics 1 in 86, we can plainly see a severe increase. Although nothing had changed in regards to the method of assessment of autism between the years 2007 and 2015, the increased rates were still seen. The CDC published the following statement: While it is clear that more children

than ever before are diagnosed as having an ASD, it is unclear how much of this increase is due to changes in how we identify/ diagnose ASDs, or whether this is due to a true increase in prevalence. A real increase in prevalence would mean that there are actually more individuals per capita who are being affected by autism (Oller & Oller, 2010, p. 18).

The recent changing diagnostic criteria for autism in addition to the influx of ASD cases to a particular region have also had an impact on its prevalence estimates. Each time that the Diagnostic and Statistical Manual has been revised there have been more diagnostic categories, such as Asperger's disorder and Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS), added as part of the autistic spectrum, including the newly created High Functioning Autism (replacing/ co-existing with Asperger's). It is noted that each time the Diagnostic and Statistical Manual has been updated there have been increases in autism diagnoses. Children who might have been previously diagnosed as having mental retardation but had autistic features may have received new diagnoses of autism, as might children who had normal intellectual abilities with autistic features. In addition children who may have been diagnosed as having schizoid or schizotypal personalities, language disorders, and social awkwardness were often re-diagnosed as having autism spectrum disorders, most of these children being given the diagnosis of Asperger's Disorder (Siegel, 2003).

Although there has been an increase in the diagnosis of autism spectrum disorders, this shift may have provided children with better access to specifically designed services in the educational setting that might better address their needs. It is important to note that autism is viewed differently depending on the model from which

one is working. Although there are many theories on the causes of autism, there is no single cause that has been pinpointed. According to the National Institute of Child Health and Human Development (2010), autism is likely the result of multiple factors. These factors can be genetic, infectious, neurologic, metabolic, immunologic, and environmental. Early theories of the causes of autism centered on the concept of emotional deprivation. It was believed that autism was caused by a lack of maternal warmth (Kanner, as cited in Waterhouse, 2000, p. 27). Leo Kanner diagnosed the first cases of autism in 1943 and set the first known criteria (Oller & Oller, 2010). It was Kanner who stated that “emotional refrigeration has been the common lot of autistic children” (Waterhouse, 2010, p. 27).

This statement caused unnecessary stress on the parents and has never been substantiated. Immunizations during childhood have also been in the public eye as a potential cause of the increasing rate of autism. In 1988, it is reported that there was a possible association between autistic symptoms and the vaccine for measles, mumps, and rubella (MMR) (Lewis, 2010). Additional studies by a Dr. Wakefield had a sample size of 12 and seemed to confuse association with causation when talking about his results that found that nine of his participants had a diagnosis of autism. In 2006, Canadian researchers found that the vast majority of studies regarding autism and vaccinations showed no causal association between the MMR vaccine and autism (Doja & Roberts, as cited in Lewis, 2010). In early 2010, the editors who published Wakefield’s article retracted it. In 14 early 2011, the British Medical Journal demonstrated through interviews and medical records, that Wakefield falsified data deliberately (Washington Post, 2011). Currently, studies are being conducted to determine the role that gene and

protein abnormalities may play as a causal factor of autism. Although genes and proteins have been implicated, too little is known about their functions and role in brain development to make any hypotheses as to how they affect the brain dysfunctions associated with autism (Muhle, Trentacoste, & Rapin, 2004). It is clear that genetics do play some role in autism spectrum disorders. Twin studies have indicated a 2-6% concordance rate with dizygotic twins and a 66% concordance rate in monozygotic twins (London & Etzel, 2000). The 2- 6% rate is also the rate estimated for family reoccurrence, while the general population rate is 0.01%-0.15%.

Although some children may be predisposed to autism they may not ever inherit autism. This seems to indicate that there are environmental factors that may play a significant role in the expression of features associated with autism in addition to genetics. The environment has long been pinpointed as a potential cause of autism, since the environment can have an effect on genetics. Environmental toxins such as lead and mercury, as well as contaminated water and pesticides have been blamed for some of the increase in the rates of autism (Altevogt, Hanson, & Leshner, 2008). Chemicals and toxins have been shown to interrupt the normal development of the brain during fetal development and early childhood (Altevogt, Hanson, & Leshner, 2008). Environmental toxins are usually blamed for this interruption. Toxins can be triggers which cause 15 genes to act, therefore can disrupt fetal /child development (Altevogt, Hanson, & Leshner, 2008).

## **Chapter 3**

### **Methodology**

This study investigated the effects of the Competent Learner Model (CLM) as a means of instruction for the improvement of classroom participation of students with autism within the school setting. The participation curriculum is comprised of tasks that require the learner to be teacher-directed, self-directed, peer-directed, and non-directed in their academic interactions. The Competent Learner Repertoire Assessment (CLRA) monitors the progress of each student as they progress through each participation task. It is theorized that through the CLM model, the student should show greater results of student attainment rates when instructed in the CLM and methodology with results are compared to the non-CLM method.

The school district, located in an urban setting in southern New Jersey contains eleven schools, ten elementary/ middle schools and one high-school in addition to the site of the administration offices. It currently has five special education programs, housed in various locations throughout. Of the programs, the Autism program is currently comprised of two formal self-contained classrooms, a kindergarten through second grade and a third through fifth grade with the older students transitioning to an inclusive environment. Within the target classroom, there are seven students. Of the students, six have been receiving highly structured instruction within the Autism Spectrum Disorders (ASD) program for at least three years. The one new student in the classroom is the target for the study. All students in the program have an IEP, receive or at least offered the related services as part of the weekly instruction. The school day runs a length of 6.5

hours a day, with 5 hours of that being spent in the classroom for instruction in all areas. Concentrated academic lessons account for 90 minutes (in rotations and scheduling) a day or 450 minutes per week. The remaining time within the classroom is spent learning social skills, computer skills, communication trials/ sessions, in addition to math and science lessons modified to IEP goals.

### **Participant**

Student A is an eight years old African-American, male student who is currently enrolled in a special education program which is specialized for asd students. The child has an individual education plan (IEP) with a diagnosis of Autism. Student A is eligible for special education based on the diagnosis provided after his recent psychological exam following concerns noted by previous teacher and parents. This is the child's first exposure to a self-contained classroom coming from a second grade inclusion class. Student A receives all subject-based instruction with exceptions noted in his IEP, spending a significant percentage of the day receiving modifications and supports. Concerning academics, student A is delayed in reading, writing, and speaking with the associated social issues found in students with asd disorders.

The participant for this study was chosen under nonrandom selection because he has had limited exposure to the subject instructional design that is currently in practice in the classroom. The autistic support classroom is a highly structured classroom that is designed to meet the needs of students with autism spectrum disorders.

## **Procedure**

A letter was sent home to the parents of the student who met the inclusion criteria for the study. Permission to participate was given by the parents child was also asked to give a written consent to be a part of the study. The subject of the study was taught with the CLM curriculum for four weeks. The CLM program provides detailed instructional formats designed to support seven Competent Learner Repertoires (CLRs) (Tucci, 2005). The CLRs consist of observing, listening, talking, reading, and writing, problem solving, and participating. The CLR focus for this study was participating. Participating is defined as taking part in something, such as interacting with peers and teachers, as well as sharing in something, such as in socialization with peers or adults. Participation according to the CLM can be teacher-directed, semi-directed, peer-directed, and non-directed. Teacher-directed instruction consists of instructional approaches that are structured, sequenced, and led by teachers. An end goal of non-directed instruction, in which the student demonstrates the task as taught on their own or with minimal assistance from staff. The primary use of teacher directed was utilized more as the academic sessions were in the one to one setting format as outlined by both CLM and ABA behavioral and instructional guidelines.

Teacher-directed participation is when the teacher is facilitating the interaction or engagement in a task. Semi-directed participation is when the teacher asks the learner to perform a task, the teacher remains in close proximity, but there are no additional prompts given to the learner. Peer-directed participation is when a peer or the learner initiates interaction with the other. This could consist of the learner giving or receiving something from a peer. Non-directed participation is participation that is done on the



learner's free time and involves the learner using objects or doing an activity for a certain amount of time. It does not have to involve another person.

Following the determination of the direction of instruction, engagement of academic instruction is determined through the ABA method of preferred activity/reinforcement and heavily utilized in the day to day academic and behavioral instruction utilized by teacher and support staff. Use of reinforcing objects around the classroom helps the learner select activities they can complete once the trial(s) are completed. Activities are selected using the preferred activity assessment (PAA); a task that involves the use of a known object, desirable to student, and two non-desirable objects. Those objects can hold meaning/ value to the child; however, once they choose their desired object or task then the session can begin. The learner is to select objects and use the object for 3-4 minutes and put the object away within 5 minutes but may have some annoying behaviors. The teacher knows to pace instruction allowing 3-4 minutes once the task(s) are completed. The staff knows from previous repertoires of their student's level of mastery how often to give time reminders for transitioning.

### **Instruction**

Before instruction in the area(s) begins the Competent Learner Repertoire Assessment (CLRA) was administered by the instructor, myself, and reviewed baseline data assessment results so that the teacher can effectively plan instruction for the participant. The development of the socialization/ academics and the subcomponents of such are outlined and designed for discrete trial (DT) instruction to be done at a later date. The CLM Performance Assessments, also known as the Competent Learner Repertoire Assessments (CLRAs) provide a profile of the student's strengths and

weaknesses across the CLRs. CLRA, an instructional-based assessment that determines if a learner has mastered the repertoires in CLM to the desired level of proficiency. It is important to note this is not a standardized test. Formal assessment rules do not apply and you may provide reinforcements for correct responses. The CLRAs assess the CLM level the learner is at and how he or she is performing at that level. The CLRAs were completed prior to the beginning of the study and at the end of the study. The CLRAs state what repertoire is being assessed, how the teacher interacts with the learner, what the learners' behavior should consist of, the materials that are needed, and what the mastery criteria.

The trial for the terms of goals/objectives is determined off the baseline information gathered from the assessment done using the appropriate and procedural guidelines in relation to the DT rate of progression or attainment of skill. Specifically 3 to 5 consecutive trials of mastery completion with a score of 80% or better on each consecutive trial. This criterion is currently used for the single subject instructional method, none—CLM format, so it should be used in this format to keep consistency and the reporting of data/ validity of results.

Upon successful completion of the trial(s) and the post assessment, CLRA, is performed to test the validation of the proposed hypothesis by the evaluator/ teacher working with the child in question. It is crucial to note that making sure the participant is active is in this trial, therefore the implementation of the PAA Results are given to the investigator, myself and looking at the comparable data from the pretest as well as post test to determine if and what method works best. Any findings and reports will be

documented within the analysis part of this investigational study in addition to the determination of its validity as a means of secondary or primary instruction.

The CLRA was administered to subject A with the pre-intervention results indicating less than typical results in the first two repertoires as student A does not like to hang out around adults and only one student in the classroom. The first two repertoires require verbal responses to the teachers' directions and questions and such responses were very minimal. The participant was scored with one's on these two repertoires, meaning there was little opportunity for the staff to observe these behaviors. On the third participator repertoire, Student A was successful at completing a task of up to 5 repetitions without prompts and with the teacher near, while also accepting assistance from a teacher or aide.

The fourth participator repertoire required Student A to accept an item from a peer or give an item to a peer within five seconds when directed by the teacher or a classroom aide. Student A was successful on this repertoire, but like the third repertoire this skill was not yet generalized across people, places, or items. The fifth participator repertoire of the Component Learner Repertoire Assessment required the student to select a variety of objects, use each object for one or two minutes for a total of ten minutes and put them away within two minutes of being told to clean up.

## **Chapter 4**

### **Results**

The purpose of this study was to examine the effectiveness of an alternative instructional strategy, specifically the CLM method as developed by Tucci (2005) for children with autism. The research question being was: Is the CLM effective for improving the participation skills of students with autism? The participant in this study was diagnosed with autism and placed in a self-contained ASD classroom.

The participation assessment utilized was the Competent Learner Repertoire Assessment (CLRA). It monitors the progress of the subject as they progress through each participation task in addition to providing a set of baseline data derived from the pre-testing to the final week/ results. Data collection was continued throughout the investigational study alongside the post assessment data be taken on the final and fourth week. The results are presented below, complete with each repertoire's results being displayed and briefly analyzed.

In figure 1, the initial preliminary assessment at the start of week one shows is shown in dark blue with each corresponding week thus in a different color for each repertoire. Results in each repertoire are different with growth in all repertoires except for the third (repetition of behaviors). The repertoires that showed overall growth were the first (responses to teacher questions), second (responses to teacher directives), and fourth repertoires (accepting items from a peer) and fifth (timed trials of play) were reported.

Similar lack of growth is seen in the third repertoire with specific analysis of the repertoires following.

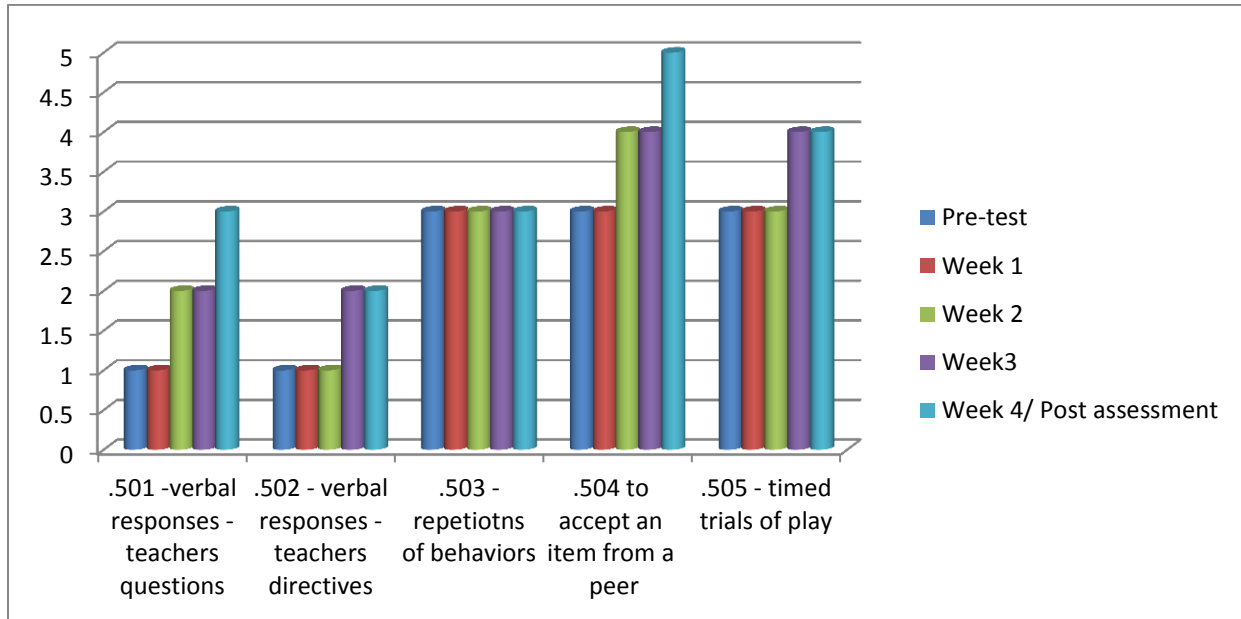


Figure 1. Results in each repertoire.

While each repertoire showed different findings, each shown below; there is one relationship that could be established. Repertoire 1 and 4 (responses to teacher questions and accepting items from a peer) showed the highest rise in scores throughout the CLM study. Figure 1, as shown above, not only speaks to this but also shows the static consistency during the first two weeks of the study throughout all repertoires. However with instruction in the field of autism, growth of any skill set is often slow and steady, often with much repetition being required for mastery/ generalization.

On repertoire one (verbal responses to teacher questions), the subject initially scored a 1 on the pre assessment administration of the CLRA and the subsequent data from the data collected shows the same score for a period of an additional week. That

plateau was followed by a growth in responses for an increased score of 2. Similar to the first two weeks, the score remains the same going into the fourth week of the investigation. See figure 2 below for results.

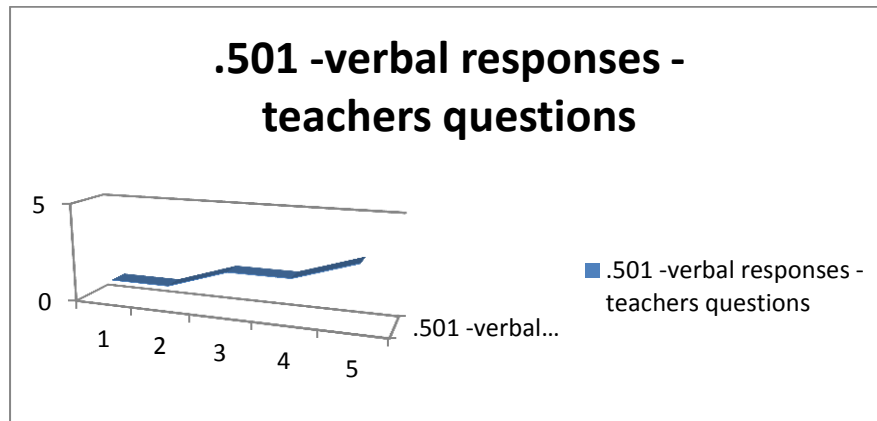


Figure 2. Results for repertoire 1

For repertoire two (verbal responses to teacher directives), the subject initially scored a 1 on the pre assessment administration of the CLRA and the subsequent data collected shows the same score for a period of two additional weeks before showing growth in week four. That plateau was followed by an increased score of 2. Similar to the first two weeks, the score remains the same going into the fourth week of the investigation. See figure 3below for results.

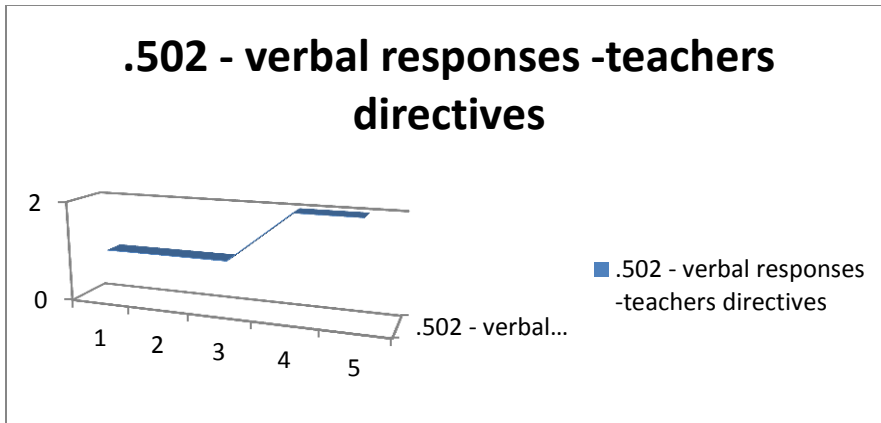


Figure 3. Results for repertoire 2

On repertoire three (repetition of behaviors), the subject initially scored a 3 on the pre assessment administration of the CLRA that focused on the repeated occurrences of a given tasks. The subject was asked to complete a daily living activity multiple times. The subsequent data collected shows the same score throughout the length of the study. That plateau indicated no increase in the number of tasks completed. Such a failure to produce an increased repetition yielded no successful rise in score. See figure 4 below for results.

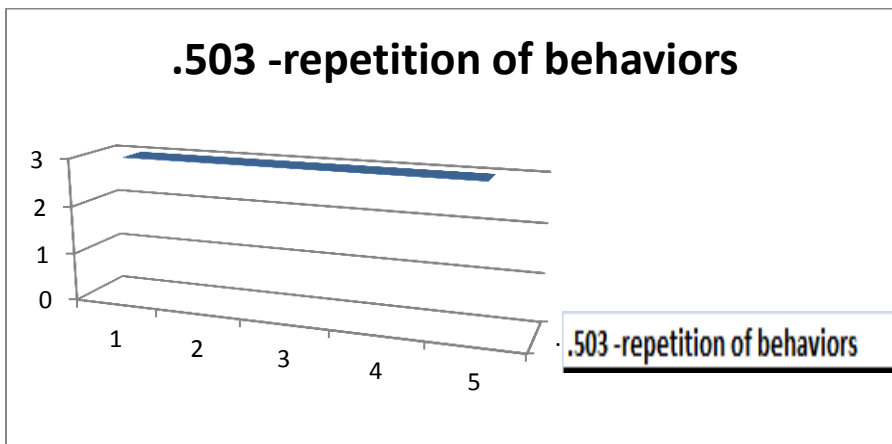
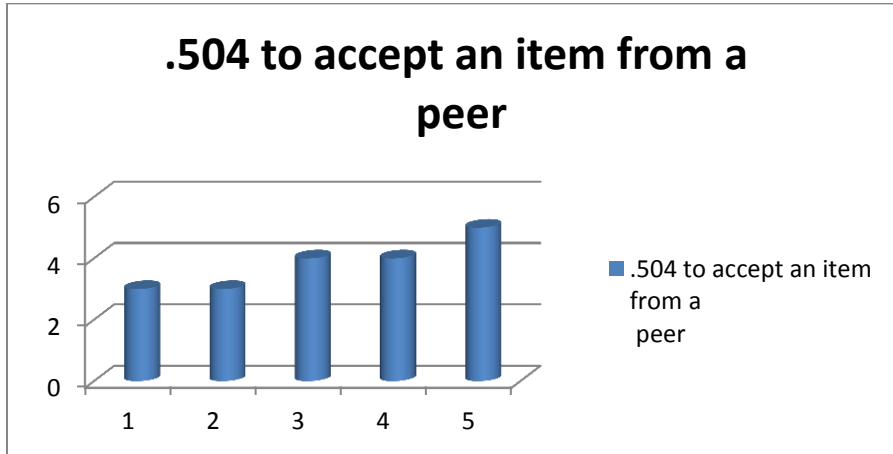


Figure 4. Results for repertoire 3

On repertoire four (accepting an item from a peer), the subject initially scored a 3 on the pre assessment administration of the CLRA and the subsequent data from the data collected shows the same score for a period of one more additional week. That two week plateau was followed by a small growth in responses in which allowed for an increased score of 4. Similar to the first two weeks, the score remains the same going into the fourth week of the investigation. In the fourth participator repertoire, The subject required to accept an item from a peer or give an item to a peer within five seconds when directed by the teacher or a classroom aide, an initial score of 4 was given. A score of 5 was given due to his increased response to peer-contact; figure 4, above shows the results for this repertoire.



*Figure 5.* Results for repertoire 4.

In the fifth repertoire (timed trials of play), the subject was required to be select a variety of objects, use each object for a fixed amount of number of minutes for a total of



ten minutes and put them away within two minutes of being told to clean up. Initially, the subject demonstrated positive responsive actions when time had elapsed, with a score of three being marked. These results were consistent for a period of a couple weeks prior to a significant improvement in response to time elapsing, for this a score of 4 was indicated. Figure 6 below shows the weekly data collections.

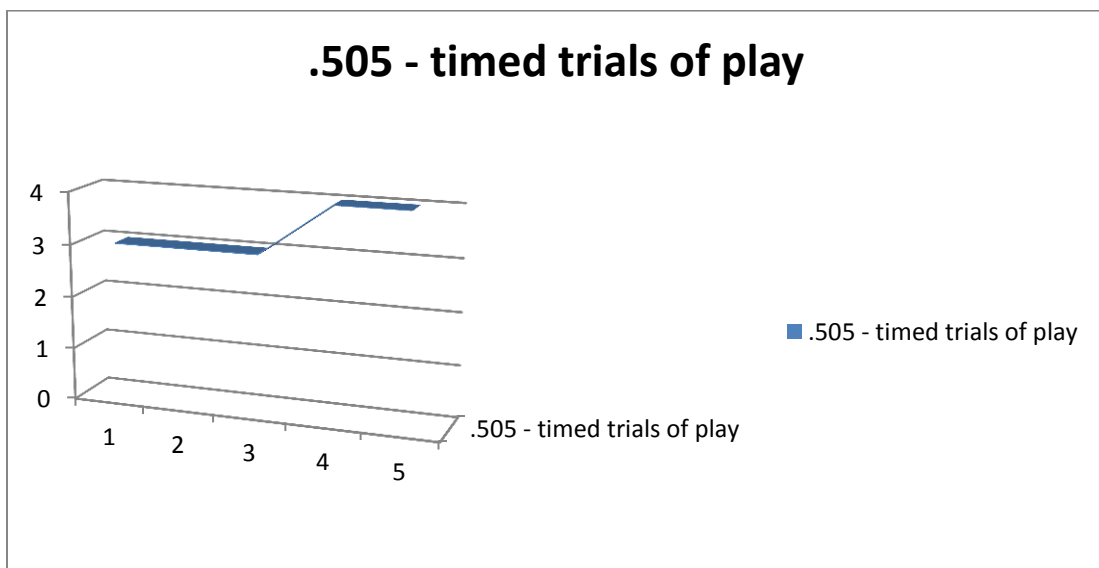


Figure 6. Results for repertoire 5.

After four weeks of instruction, the scores, as indicated in figure 7, show favorable growth in repertoires one and four (teacher direction and accepting of peer engagement) in addition to no growth in repertoire 3 (repetition of behavior). The results for pre and post assessment data are also shown in figure 7. In repertoire 1, the students' verbal responses were observed and documented, the subject rose in score from 1 to 3. This is indeed quite the favorable growth. In Repertoire 2, in which student response to

directives were being addressed, there was a positive rise from 1 to 2 over the length of the investigation; such a increase suggests the subject demonstrated greater application of responding to a directive while not obtaining mastery skill.

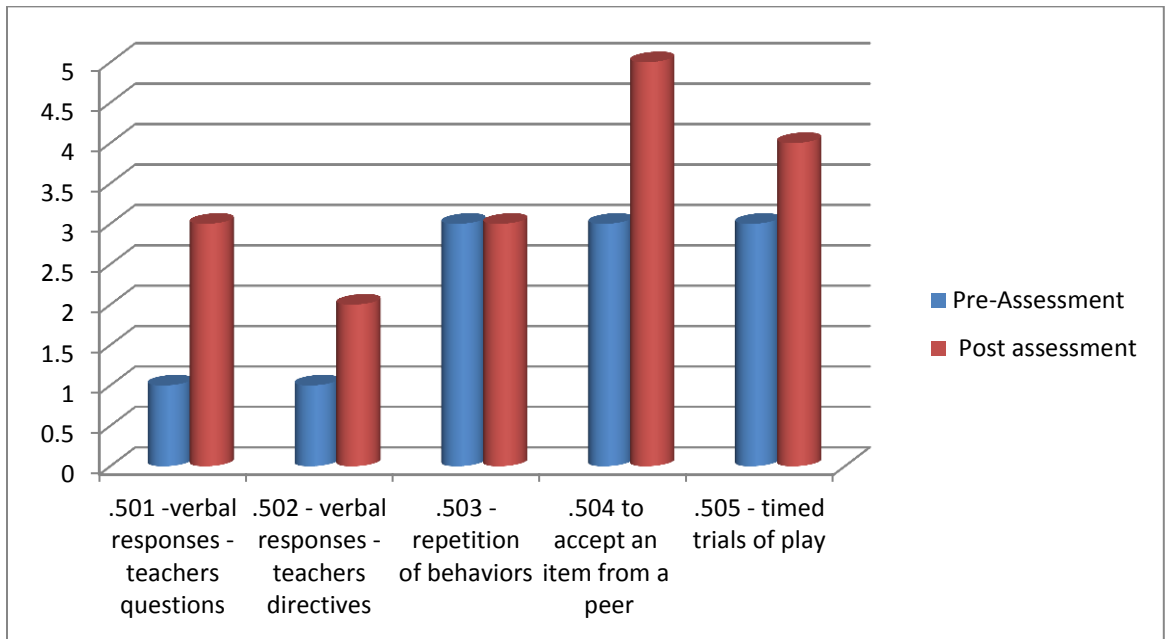


Figure 7. Results following intervention.

As seen in the third repertoire, as shown above in figure 7, the subject showed proficiency in the skill of completing repetitive actions. A score of 3 was documented throughout the length of the instructional investigation. In repertoire 4, growth was evident in the task of accepting an item(s) from a peer. Results as shown in figure 7 show some exchange and interaction by a score of 3 for the first two weeks. An increase occurred resulting in a 4 being documented, noting the increase of peer acceptance. By the end of the study, the subject demonstrated growth in this area as so indicated by the

score of a 5. Repertoire 5, as seen in figure 6 above, in which student engagement in timed play was being addressed, there was a positive rise from 1 to 2 over the length of the investigation; such an increase suggests the subject demonstrated greater application of effective time management strategies and/or response to timed play and mastery of this particular however the skill was not met.

## Chapter 5

### Discussion, Conclusions, and Recommendations

**Discussion** The purpose of this study was to examine the effects of the Competent Learner Model (CLM) on the participation and social skills of an eight-year-old student with autism. The research sought to determine if the student would make gains in the area of participation as a result of the CLM intervention. It was hypothesized that gains would be made in social skills because the participator repertoires address appropriate ways to participate within the classroom but with teacher-led as well as peer-led classroom sessions. Some of the skills that are taught in the Participator Repertoires are learning to use classroom objects with the teacher's help, completing tasks with limited or no teacher assistance.

The subject in this study experienced interventional strategies in all five social repertoires (responses to teacher questions, responses to teacher directives, repetition of behaviors, accepting objects from peers, and timed trials of play) as part of classroom instruction as it was integrated where possible thus creating a more generalized approach.

The subject experienced some success with 80% of repertoires with a single score (or greater) rise in score along with a 40% rise in 2 points or more rise in score, repertoires one and four (teacher questions and accepting objects from peers). Although this intervention was carried out in one-on-one sessions with the teacher or peer, the effect was carried over to other social settings within school, specifically lunch/ recess, fine motor time (puzzles/legos, etc.). The subject became more aware of actions required when answering questions or engaging with a peer. They were able to answer what happened when they played, who they played with, how you asked to play/join, etc.

Single word/ simple phrases “I want play please” or “may I have legos with you please” were utilized. These phrases indicated to social intrigue and joining an activity as was taught. The empowerment that the use of these skills gives the subject bolsters his self-esteem and ability to engage with others. As noted earlier, the skill demonstrated was also applied to inappropriate desires such as touching a persons’ eyes and gaining access to the I-pad(s). This is where the modeling was implemented and redirection was employed.

The following of directions and instructions of the teacher, as indicated in repertoires one and two demonstrated the growth that the subject experienced within this narrow study window. The accepting and giving objects to peers, and taking turns with peers as indicated in repertoires three through five demonstrate the subjects’ ability to increase productive responses and the static growth of their repetitive behavior. All these social skills and can be utilized and applied outside of the classroom setting with heavily utilization in social skills groups, if available. The Competent Learner Model CLM improvement of at least one numerical score in four out of the five repertoire, that’s an 80% growth in social skills participation, with a 40% growth of two numerical points after the study window. Those repertoires are repertoire 1 (teacher directions) and repertoire 4(accepting an item from a peer).

Concerning repertoire one, the student started out in the CLM curriculum at a basic and introductory level and had multiple diagnoses. The subject made progress in some of the participator repertoires on which he was assessed. As the subject seldom followed/follows instructions and does not enjoy interactions with other students, he was rated with a numerical score of 1 initially. This type of progress may be more difficult to make over the study period, especially for those who have more deficits at the offset but

with a longer study window or additional opportunities to apply these skills, profound growth is possible. The subject had to learn new skills and how to generalize these skills with fellow classmates and was able to affectively demonstrate this skill 40% better. After four weeks, the subject was demonstrating a “friendship” as defined by most social guidelines with another student.

In repertoire two where the subject was to respond to teacher directives/statements, results were static for three of the four week period with. Given the concerns of inability to follow instructions and the initial unwillingness to interact with peers, this took some time to face and conquer. The explicit use of social stories and modeling (teacher and video) were used and ample practice was allowed through the school day/settings. The subject utilized the new skills taught through the methods stated above and actively used them with his peers. The general application of it was present but complete mastery did not result as of yet. In this repertoire, the subject rose one numeric score and is calculated as part of the overall 80% growth. Continuation of CLM practices is a worth-while measure both in and out of the school setting as some growth was seen in school so logic suggests similar growth might occur if training is continued.

In repertoire three in which the repetition of behaviors learned, as taught, are examined no growth had occurred. The subject began the study with a numerical score of 3 which was encouraging. It suggested strong prior knowledge of following directions/directives as provided over a long period of time. As each week’s instruction and skill application was completed, there was no increase of the skill/ duplication being taught. At the end of the study, the subject’s results demonstrated static growth in this skill set. The reasons for this are varied with strong beliefs that the study period was limited

suggesting more time allotted and practice would result in higher scores/ increase in numeric score. This will be further discussed in limitations and future studies. Additionally, the ability of the subject to increase the skill set could be do the other unknown factors.

In repertoire four, the statement that individuals with prior knowledge of a topic understand and remember more than those with limited prior knowledge he ability to join an established social interaction is an important social skill that appears to have learned previously. The subject had an initial score of 3, suggesting such a rationale for the results initially shown. The belief that students with autism often have difficulty integrating language, social understanding, and the emotional intent of messages in the social world (Quill, as cited in Gately, 2008) holds merit as the static growth in weeks one and two speaks to exactly such difficulty in accepting objects from peers. It is further evident by the non-presence of growth in weeks three and four following the slight improvement from 3 to 4 in week 2. The single numerical rise in score in week two and four suggest proficient acquisition of skill. The two week repetition of application as represented by the plateaus is a positive sign that suggests processing time was needed in order to properly grasp the skill.

In repertoire five in which timed social situations were investigated, it is important to be able to understand and interpret the various cues given. Initially, the subject demonstrated positive responsive actions when time had elapsed, with a score of three being marked and remaining persistent for three weeks of the study. The repetition of actions and responding to an audible time management system was pleasant to see. Prior knowledge and skill acquisition is evident by review of the data as with other

repertoires with static growth at proficient rates, growth is possible with processing time allotted for. As it will be discussed in greater detail in limitations and future studies, continuation of these skills is something more exploring.

This study is not the first of its kind to research the Competent Learner Model (CLM) as devised by Tucci (2005) and its effect on children diagnosed with autism. The use of the CLM has been a theoretical practice for many years. The information that exists is provided by the authors of the CLM. Interestingly, the CLM is now being implemented in many school districts. successful in the school, home, and community setting (Tucci, 2011). In the video, the students are shown when they began in a CLM classroom and where they were after having been exposed to the CLM curriculum. However, these case studies did not provide empirically-based, objective evidence, such as data collection of pre-intervention baseline levels and post-intervention levels of academics and behaviors. Rather the video provided testimonials of the CLM. There also was not a control group for comparison. The findings of the current study show that over a month period, there proficient growth. The CLM may be a successful intervention for those who do not have more severe limitations.

**Limitations.** This research has some limitations which should be noted. Results were based on a very small sample size in one self-contained classroom in a singular school with no control group so no comparisons could be made between those who received the Competent Learner Model (CLM) and those who did not. Additionally, the window for this study was only four weeks, compared to other studies of this nature that utilized longer periods of instruction and observation. However, the percentage of growth within this narrow window is indeed itself quite positive. To this researcher, the results



from repertoire 3, repetition of behavior, might have produced better results if a larger observational period was afforded. I cite the static growth/ plateau of skill acquisition throughout the study as my rationale for the extension.

It was hypothesized that the CLM would have helped participation repertoires, but that was not the case. The present study lasted a total of six months. It is possible that naturalistic studies, such as this one, may take a longer period of time in order to capture measurable progress. The social validity of the CLM, the social importance needs to be considered when consideration of an instructional tool is being evaluated. Although the CLM appears to be valid with an 80% overall rise of at least one numerical score, it does not seem to be improving all participation skills, at least in the short-term participation window. The use of naturalistic settings which do rely on ecological validity, approximate real-life situation in which behaviors can occur is something that is heavily suggested. The CLM has both ecological and social validity, based on the definitions provided previously. However, despite the fact that the CLM is designed to be used in a naturalistic setting and was conducted in such an academic setting familiar to the subject, it resulted in very little improvement for all participation skill sets.

**Practical Implications.** Teachers can apply the CLM methodology to show naturalistic teaching strategies that accompany the discrete trial or traditional format(s) utilized. Given the success that was witnessed doing this for a week study, a teacher or a show for us girls presenter might get more favorable results over a six week or longer program. If the focus is clearly indicated, I.e. Social skills, one could expect a variety of results as not all students in such a program might be not totally familiar with the DT strategies as was the subject in this current study. Results will vary as results are based on

how well subject(s) respond to a generalized naturalistic model of instruction in addition to how much exposure one might have in a another instructional format.

**Future Studies** Future studies for this precise study should be over a longer period and host a larger sample in terms of skill level is needed. The subject was a part of an isolated participation field due to the all students with an asd disorder was located in a single classroom. Further studies should include other classrooms or schools that house students with an asd disorder or a severe disability. Additional research using samples of students with autism from a variety of classrooms, ages and genders is warranted to more definitively determine whether CLM is an appropriate intervention for all children diagnosed in the autism spectrum. It is recommended that future studies further investigate the relationship between the CLM and participation and social skills of students with autism as this is an area that continues to be a vital part of instruction and is still one the chief characteristics outlined by the DSM –V as part of the definition of autism

**Conclusion** Given the 80% single numerical rise in score of the repertoires, 40% growth of two numerical scores throughout the five repertoires indicated great response to naturalistic teaching methods. They occurred in skills that involved teacher-responses and accepting objects from peers. Generalized CLM methods utilized were proven quite effective for this particular subject. One possible theory for the significant with results could be that the subject was not pre-disposed to any concrete ASD instructional model for social skills development. Another possible theory could be the subjects' willingness to respond to teacher lead and peer-direction. Whatever the true cause for success was,

further application of the CLM methodology is advisable as a definite secondary method and perhaps the sole method if ABA method is not available.

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