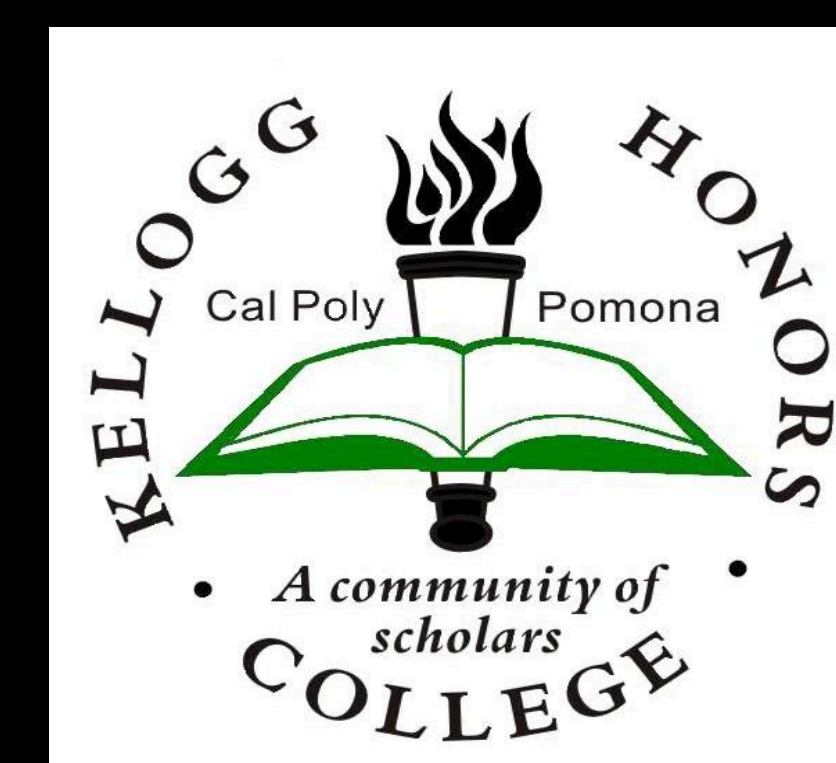
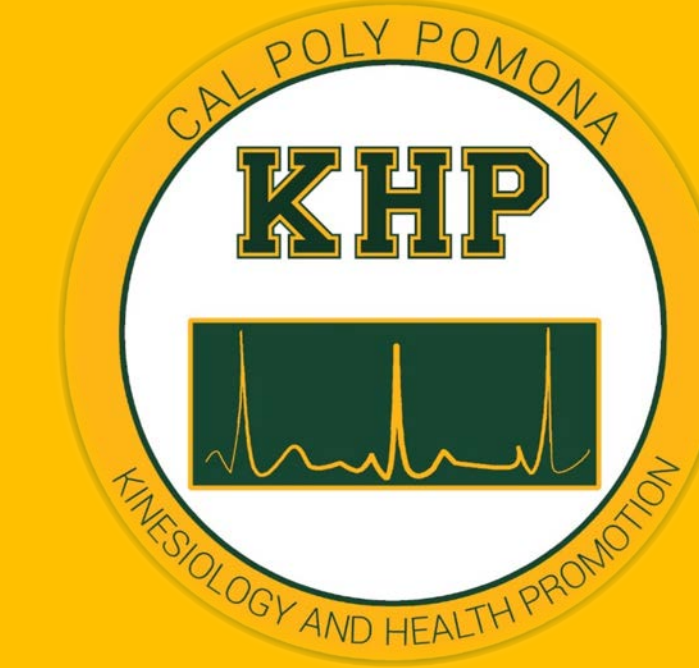
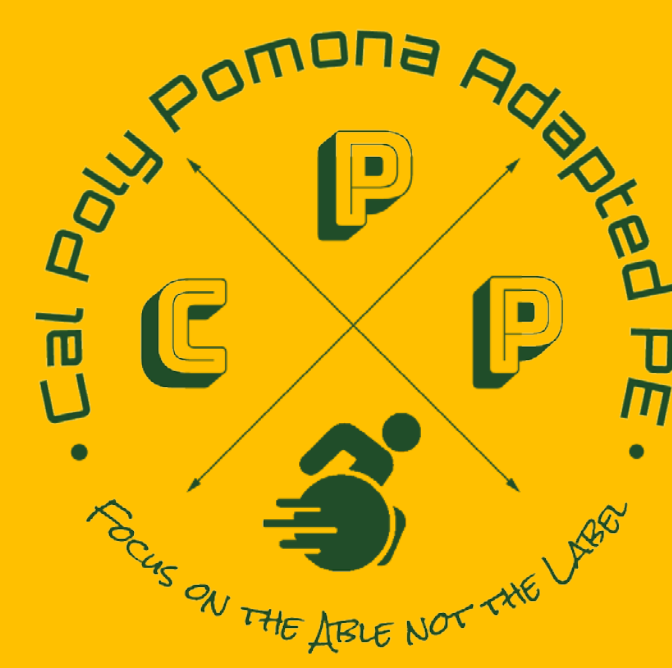


# Motor Development Clinic: An Early Intervention Motor Program

# CAL POLY



Sydney Hoang, Major: Kinesiology & Health Promotion  
Mentor: Dr. Elizabeth Foster  
Kellogg Honors College Capstone Project



## Introduction and Purpose

Early intervention is important for children with disabilities, specifically Autism Spectrum Disorder, in which MacDonald et al. (2013) found “1 in every 88 children are diagnosed with ASD” (p. 271). “Young children with autism who receive the recommended early intervention have a much greater chance, later in life, of living independently, securing employment and developing meaningful and lasting friendships and relationships with long-term research showing benefits for children as they grow and develop” (AEIOU, 2018). If a child with autism is behind in their motor development, they could have access to early intervention programs focused on motor development which, stated by Aparicio et al. (2010), “is a process that is carried out in a child from birth up to approximately six of seven years of age” (p. 523). Aparicio et al. (2010) found that this stage is “the most favorable stage when stimulating each one of the capacities that comprise their fundamental components...these capacities in their entirety allow children to awaken awareness within themselves, of space, and of the people and objects that surround them” (p. 524). This is what every child needs to learn in order to be successful in the classroom and on the playground. MacDonald et al. (2013) states that motor skill deficits “persist in school-aged children with autism spectrum disorder, yet the focus of intervention is on core impairments, which are deficits in social communication skills” (p. 271). MacDonald et al. (2013) continues on to explain the importance for understanding school-aged children, where “social communicative practice might include school-based play or common schoolyard activities; these activities often require relatively proficient motor skills to participate with success,” (p. 272) therefore leading to an increase in social and motor skills. This project examines the impact of an early intervention motor program for children with disabilities. These children are developmentally behind in their motor functions due to their disability. Developmental motor delays can impact a child’s ability to move independently, which then can impact their confidence and self-esteem. Children with disabilities who qualify for early interventions should take advantage of these services in order to reach important developmental milestones and age appropriate motor skills. This project displays the progress of one student that has been instructed and assessed through the past year from January 2017 to January 2018 at the Motor Development Clinic. He had pre-level tests before implementation of the program for each quarter in order to develop an individualized motor program for his specific needs. After eight weeks, post-level assessment tests are done to analyze the progress he has made on his individualized program. This includes four skills he needs instruction and adaptations in order to increase his performance. This cycle repeats for each quarter the child is enrolled in the Clinic. At the end of each quarter, a parent conference is held with the Clinic Director to reexamine the child’s skills, program, and interventions that took place throughout the quarter.

## Method

This investigation involved collecting and analyzing data from the past year of Winter 2017 until Winter 2018 of one particular student from the Motor Development Clinic. The child involved in this project was an 8 year old male who was diagnosed with autism. Through Winter of 2017 to Winter 2018, the participant was measured through pre-test and post-test assessments in order to track progress of motor skill development for specific motor skills assigned to him during each quarter. The motor skills that were assigned to him were in accordance with what was necessary for him to be able to participate safely in activities in school individually and with peers, the interest of the child himself, and the interest of the parents as well. In addition, these motor skills were selected based on being behind developmentally in his performance compared to his peers. The motor skills assigned to the participant while he was participating in the Motor Development Clinic included: dribbling a basketball, catching a tossed ball, jumping a self-turned rope, riding a bicycle independently, wall ball, dynamic balance, push-ups, core strength, shooting a basketball, and jumping forward.

**Instrument and Measures:** Each skill comes with certain prerequisites that need to be done in proper form and timing in order to have the skill be achieved in a mature form. The skills are broken down into simple criteria to increase overall performance. For the skill of dribbling a basketball, for example, there are 13 criteria that need to be achieved in order to perform the skill in a mature form. In order for the participant to move on to another skill, the child must be able to perform all of the criteria in a mature form of each specific skill, 80% of the time during post-testing at the end of each quarter. The results then are presented and discussed with the parent(s). It is then the parent and director’s choice whether to pass the child on that particular skill, and if so, what skills the child will learn next quarter.

### Motor Skills:

**Winter Quarter 2017:** Dribble a basketball, catch a tossed ball, jump a self-turned rope, and ride a bicycle independently.

**Spring Quarter 2017:** Dribble a basketball, catch a tossed ball, wall ball, and ride a bicycle independently.

**Fall Quarter 2017:** Dribble a basketball, dynamic balance, wall ball, and push-ups.

**Winter Quarter 2018:** Shooting a basketball, core strength, push-ups, and jumping forward.

## Results

Table 1 & 2:

*In Winter 2017, dribbling a basketball skills were maintained through the quarter but was completed in mature form in Spring 2017. All other skills continued to improve, and by Spring 2017, dynamic balance and wall ball were done at mature form as well.*

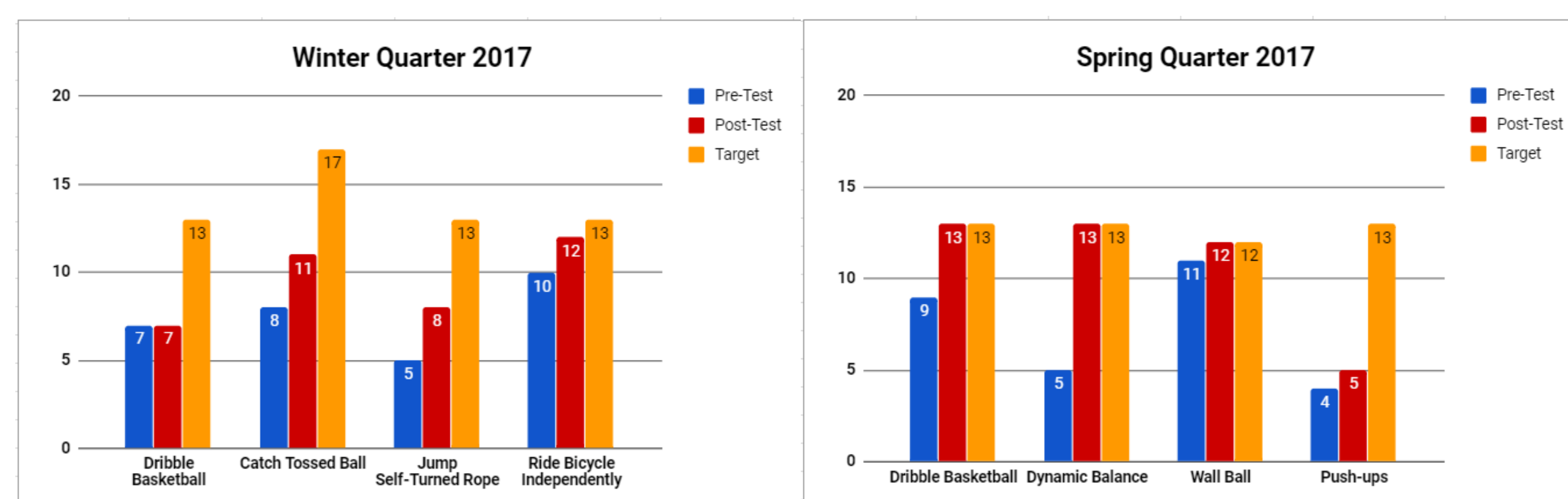
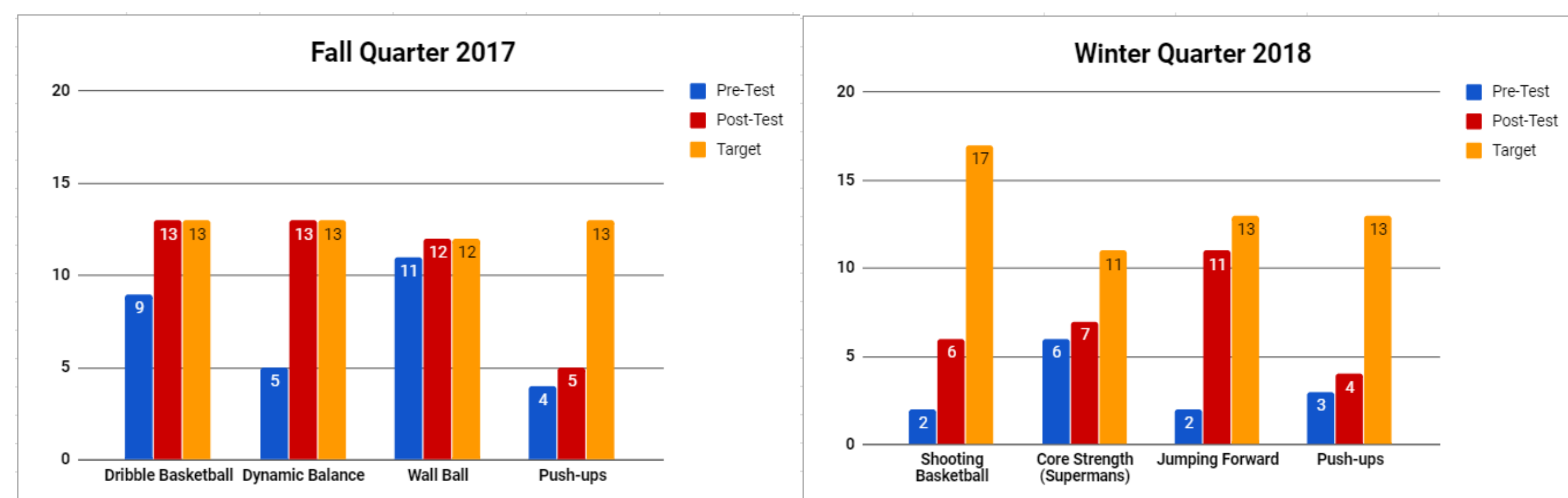


Table 3 & 4:

*Goals have been obtained for dribbling a basketball, dynamic balance, and wall ball in Fall 2017. In Winter 2018, push-ups and three new skills were taught and assessed.*



## Conclusion/Implications

The results show the importance of a motor skill instructional early prevention program to children with disabilities while they are young and developing their motor skills. “Positive early experiences are essential prerequisites for later success in school, the workplace, and the community. Services to young children who have or are at risk for developmental delays have been shown to positively impact outcomes across developmental domains, including health, language and communication, cognitive development, and social/emotional development” (NECTAC, 2011). Not only is this important to the child’s future, it also impacts the family as well. When this participant started the early intervention program at the MDC, his mother had many worries for her child’s well-being in school. She was “very nervous, because [her child] had been dealing with some major issues of anxiety, sensory processing, and OCD.” She “wanted to improve [her child’s] gross and fine motor skills, [and] wanted him to gain self-confidence and learn to socialize.” Her child began the program at the age of 6. The mother believes that “self-confidence is the biggest change. He learned to tie his shoes which in turn increased his independence and self-esteem...[He] can ride a bike, jump rope, and bounce a ball. These are all things that are necessary to make [him] a part of his social world.” His mother concludes with how “[they] began with every therapy we could do to help [our child] feel comfortable in his own skin.” In the end, the program they continued to do at the MDC “gave her son the ability to have the confidence and motor skills to become an equal with his peers.” Of course, the journey continues on, but thanks to the MDC, it “has given us a leveled playing field at this point in [our son’s] life.”

## References

- AEIOU Foundation for Children with Autism. (2018). *Why is Early Intervention so Important?* Retrieved from <https://aeiou.org.au/early-intervention>
- Aparicio, E., Sobrino, J., Rodríguez, E., Torre, J., Mendivil, R. and Muñoz, A. (2018). The Importance of Motor Development in a Child. Guidelines for Working on Development of Motor Skills at School. *EDULEARN10 Proceedings*, 523-528.
- MacDonald, M., Lord, C., & Ulrich, D. A. (2013). The relationship of motor skills and social communicative skills in school-aged children with autism spectrum disorder. *Adapted Physical Activity Quarterly*, 30(3), 271-282, doi:10.1123/apaq.30.3.271
- National Early Childhood Technical Assistance Center. (2011). *The Importance of Early Intervention for Infants and Toddlers with Disabilities and Their Families*. Retrieved from [www.nectac.org/~pdfs/pubs/importanceofearlyintervention.pdf](http://www.nectac.org/~pdfs/pubs/importanceofearlyintervention.pdf).