


8-6-2023

Accommodated Gymnastics Program for Atypically Developing Children

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NSUWorks Citation

Ashtin Callahan. 2023. *Accommodated Gymnastics Program for Atypically Developing Children*. Capstone. Nova Southeastern University. Retrieved from NSUWorks, . (112) https://nsuworks.nova.edu/hpd_ot_capstone/112.

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Accommodated Gymnastics Program for Atypically Developing Children

Ashtin Callahan, OTD-S

Kaley LaFleur, LaFleur's Gymnastics Club

Gustavo Reinoso, Ph.D., OTR/L & Christina Kane, Ed.D., M.S., OTR/L



Figure 1: Picture from the recreational gymnasts' awards day at LaFleur's Gymnastics Club

Introduction

Children learn and develop vital skills for life through play. Atypically developing children face various challenges. Difficulties with motor skills, sensory processing, cognition, and social skills have the potential to limit a child's physical, social, and emotional functioning throughout life. Atypically developing children may have difficulties keeping up with typically developing children when playing sports or participating in physical activities. Gymnastics can help address the concerns of a child with atypical development as it incorporates skills that are crucial for a child's development.

Site Description

LaFleur's gymnastics club:

- Located in Largo, Florida
- Events included:
 - Trampoline, bars, vault, floor drills and exercises, beam
- Target population for the accommodated gymnastics program: children ages 5 – 10 years old with various diagnosis and conditions
 - Recommended diagnosis and conditions: Sensory processing disorder, developmental coordination disorder, autism spectrum disorder, down syndrome, cerebral palsy, and neurodevelopmental disorder.



Figure 2: Recreational side of the gym layout and some of the equipment used during the 8-week program (left entrance view)

Summary of Needs Assessment

Two identified needs:

- Previous studies focus on motor gains, no literature combined gymnastics with an occupational therapy framework (PEOP model) to analyze improvements in overall health and quality of life for children with disabilities
- Closest accommodative gymnastics program is in Lakeland, Florida (approximately 40 miles away)

Literature Review Summary

- Children with disabilities are 4.5 times less likely to participate in sports/physical activity than typically developing children for various reasons (Johnson et al., 2021). Some reasons are the scarcity of adapted sports programs, lack of supportive environments, and not understanding the child's potential.
- Gymnastics can improve range of motion (ROM), functional motor performance, coordination, sensory-motor, executive and cognitive function, and psychosocial abilities in children with disabilities (Akyol & Pektaş, 2018; Ambrose, 2021; Cook et al., 2015; Gitimoghaddam et al., 2019; Hessel et al., 2010; Huseyin, 2019; Jam et al., 2018; Kalkhoran et al., 2018).
- Gymnastics is a highly customizable sport; it allows a child to progress at their own rate in comparison to team sports (Kalkhoran et al., 2018). One-way gymnastics can be customized for a child is through grading the skills. Gymnastics skills can be graded up or down to meet the child's needs, increasing their ability to gain new skills (Leichtenberger, 2018).

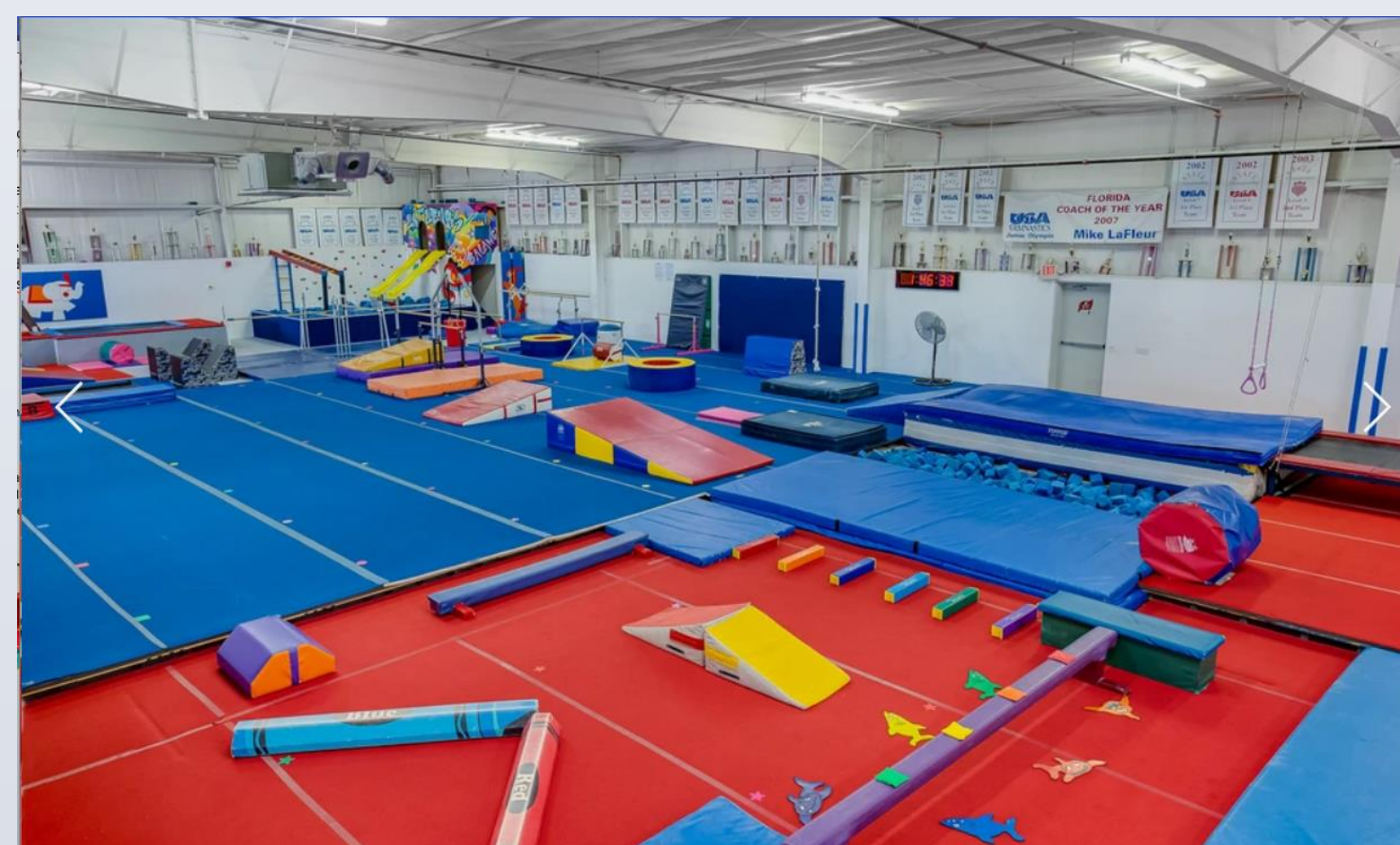


Figure 3: Recreational side of the gym layout and some of the equipment used during the 8-week program (right entrance view)

Capstone Project Description

This capstone experience was based on an 8-week accommodated gymnastics program filled with gymnastics skills that incorporate an occupational therapy framework.

Program Goals:

1. Develop a child-centered gymnastics program to meet the needs of children with disabilities within the Tampa Bay area.
2. Discover if an accommodated gymnastics program would increase a child's overall health and quality of life, in addition to motor and sensory-motor skills.
3. Discover if caregivers believe an accommodated gymnastics program has increased the family's quality of life.

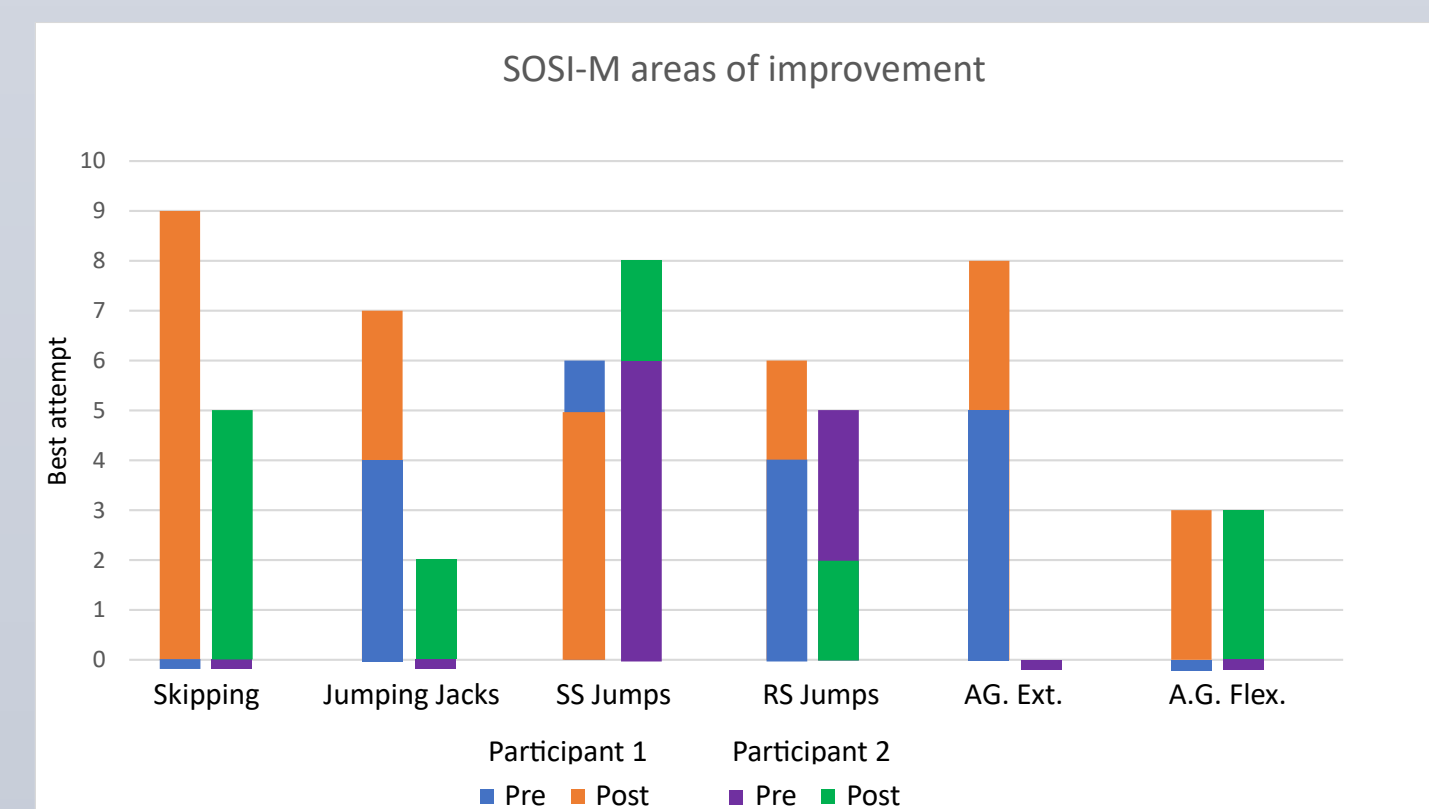


Figure 4: Graph illustrating the pre- and post- test measurements on the SOSI-M for 2 out of the 3 participants

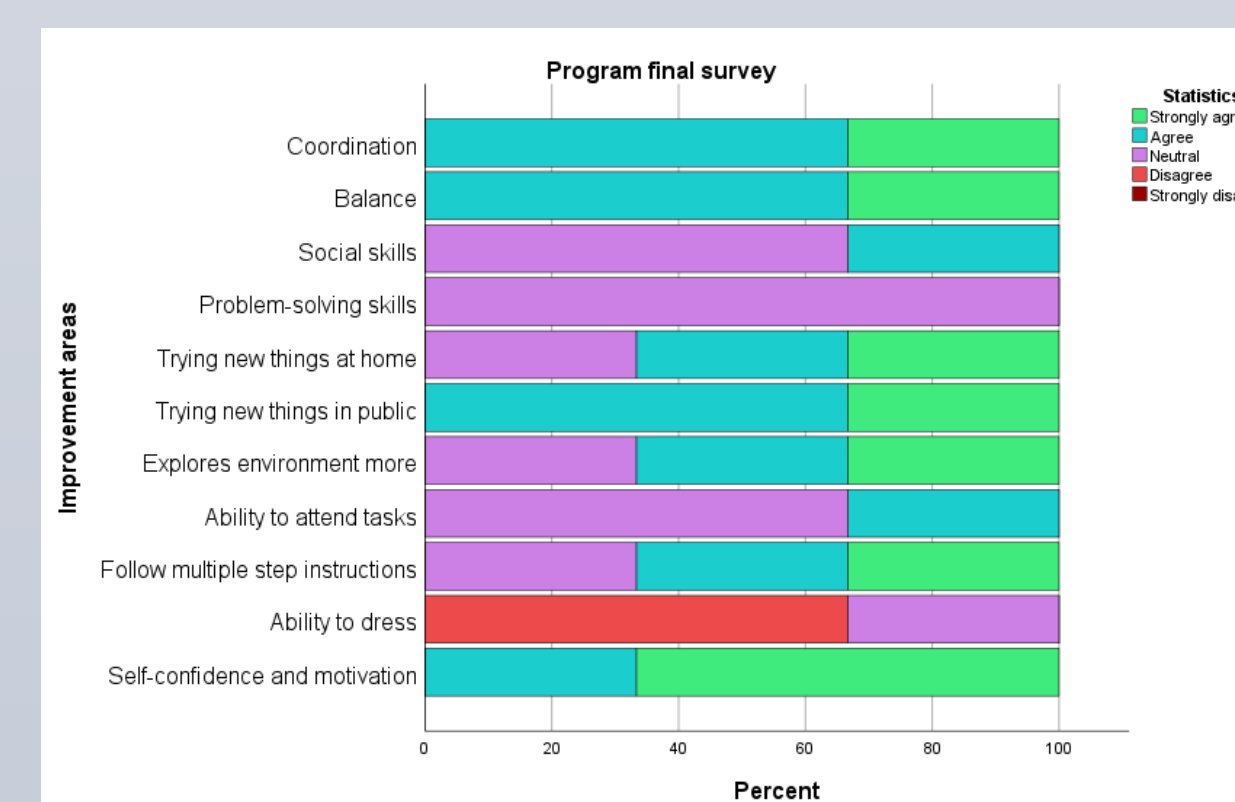


Figure 6: Graph illustrating the outcomes of the final program survey

| ID # | Name | Responses |
|------|-----------|--|
| 1 | anonymous | My biggest take away is that my child got to see she can do harder skills. |
| 2 | anonymous | Watching the joy it brought to my son. |
| 3 | anonymous | It helped me to realize there's many options of varied, high interest activities we can do to help his developmental delays beyond OT/PT. He really liked gymnastics and the way it held his attention is significant. |

Figure 5: Table indicating improvements in caregiver's perspective on family's quality of life

Program Outcomes:

The pre- and post-test results of the SOSI-M demonstrated an increase in motor planning, bilateral motor coordination, and postural control. Final program survey indicated an improvement in the child's overall health and quality of life after completing the 8-week accommodated gymnastics program. Parent's also reported that the accommodated gymnastics program increased their family's quality of life. Due to program's success, LaFleur's gymnastics will continue to offer an accommodated gymnastics class. All participants are enrolled to continue.

- Limitations included:
 - Gym layout
 - Not having more assistant coaches for the program
 - Small sample size

Learning Objectives Achieved

- Developed and implemented an 8-week accommodated gymnastics program.
- Exercised knowledge of pediatric occupational therapy interventions and tying them to gymnastics exercises.
- Informally administered standardized pediatric occupational therapy assessments.
- Developing an accommodated gymnastics program proposal for gymnastics facilities interested in starting their own accommodated program.



Figure 6: Advertisement image of program used for social media

Implications for OT Practice

- Children with disabilities benefit from participating in an accommodated gymnastics program to increase gross motor skills, sensory processing, cognitive, and child's quality of life.
- Creating a supportive environment increases a child's participation in occupations.
- Simplified gymnastics exercises and games can be utilized in pediatric occupational therapy interventions.
- It is recommended that future accommodated gymnastics programs continue for more than 12-weeks to demonstrate further improvements in child's overall health and quality of life.

References & Acknowledgments

Thank you Kaley LaFleur and all at LaFleur's gymnastics for your support and allowing me to work with you all. Special thank you to Dr. Reinoso, OTD, OTR/L and Dr. Kane for their expertise, guidance, and support during the capstone experience.



References