Barrel Vaulting: An Intervention Supporting Core Learning Skill Development in Children with Dyslexia, Dysgraphia, and ADHD
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INTRODUCTION

Literature Review
- Dyslexia: Reading, spelling, and word pronouncing challenges.
  - Deficits noted in postural stability, motor planning, bilateral integration, and cross lateral integration.

- Dysgraphia: Handwriting and spelling challenges.
  - Deficits noted in postural stability, motor planning, bilateral integration, and cross lateral integration.

- ADHD: Attention, impulsivity, and hyperactivity challenges.
  - Deficits noted in oculomotor control, postural stability, bilateral integration, cross lateral integration (lower extremities), and motor planning (inconclusive).

Needs Assessment
- E. Olson aims to provide unique farm related activities and add adaptive horseback riding and vaulting to FCCT’s services in the near future.
- Parents report that FCCT increases the availability and accessibility of pediatric OT services in the underserved Fall City area.
- Interventions confirmed need to provide core learning skill interventions among children with learning disabilities and ADHD.

METHODS

- The project was guided by two questions: Do children with these developmental conditions have deficits in core learning skills? Further, if deficits are present, what frames of reference in occupational therapy may support interventions that address these deficits?
- An initial review of 15 core learning skills and relationships to these diagnoses was conducted.
- Six core learning skills were identified as having the most evidence in relation to the three diagnoses of interest; therefore, a literature review was conducted on these relationships. These six skills were oculomotor control, balance, postural stability, motor planning, bilateral integration, and cross lateral integration. Due to overlapping definitions, balance was used synonymously with postural stability.
- A needs assessment included interviewing parents and clinicians, and surveying the geographical need for FCCT’s services.
- Based on the literature review and needs assessment, an intervention was chosen, planned, and implemented.
- Frames of reference that support the development of core learning skills in children include those that promote child-centered interventions, incorporate meaningful occupations, and provide a just-right challenge to address deficits limiting a child’s independence and success. These may include Sensory Integration, SCOPE-IT, and Motor Skill Acquisition.

INTERVENTION EVIDENCE

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INTERVENTION PROCESS

Intervention Planning
- Intervention proposals created by the team were narrowed to four choices: vaulting barrel, rock wall, obstacle course, and yogapeutics.
- Final decision was based on: number of core learning skills addressed, cost ($500 budget), labor, ease of use, set up/tear down needs, and agreement with E. Olson’s vision for FCCT.

Intervention Development
- A pre-made vaulting barrel was purchased and assessed for repair needs.
- The barrel was repaired, painted, padded, and outfitted with a custom sewn barrel cover.
- A customized intervention guide was created to introduce the barrel into practice at FCCT and address the core learning skills researched.

BARREL AND INTERVENTION GUIDE

- The guide includes: 18 poses, mounting and dismounting instructions, ways to grade each pose, barrel activity ideas, and definitions of core learning skills.
- Each pose has a description and picture to guide participants.
- The guide was printed on heavy weight paper, laminated, and organized into a booklet for durability of the finished product.

DISCUSSION

- Core learning skill deficits overlap with functional impairments seen in children with ADHD and learning disabilities.
- Barrel vaulting may be used to target deficits in core learning skills and improve occupational functioning among children with ADHD and/or learning disabilities.
- Frames of reference and a client-centered approach should be used to guide and grade the use of the vaulting barrel as an occupation-based intervention and maximize outcomes.
- Barrel vaulting is an engaging and meaningful activity for children that will facilitate the use of therapeutic equestrian vaulting as a future intervention.

REFERENCES