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PALAESTRA

Adapted Sport, Physical Education, and Recreational Therapy

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2018 Jr. Nationals

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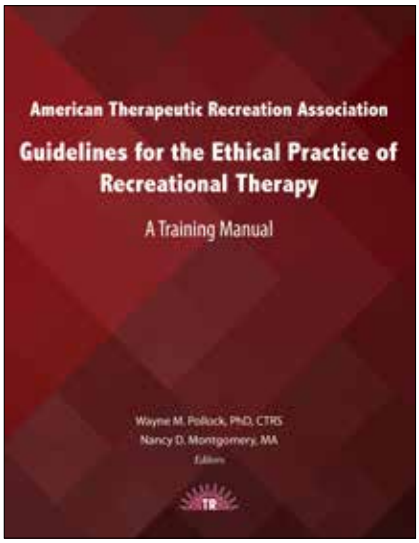

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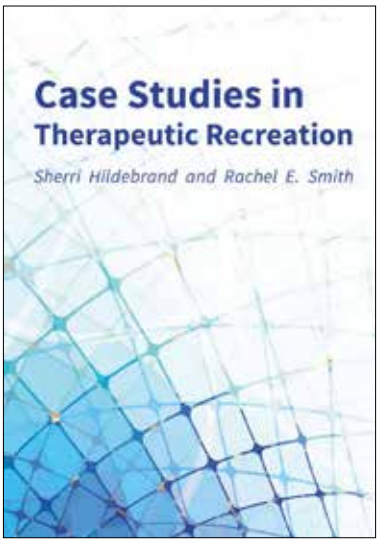

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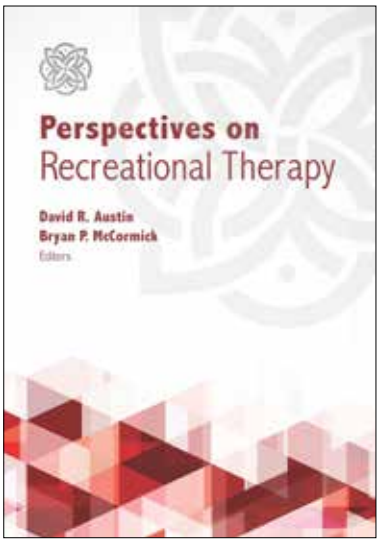

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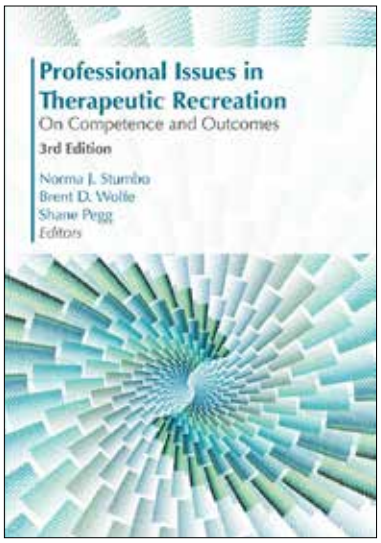

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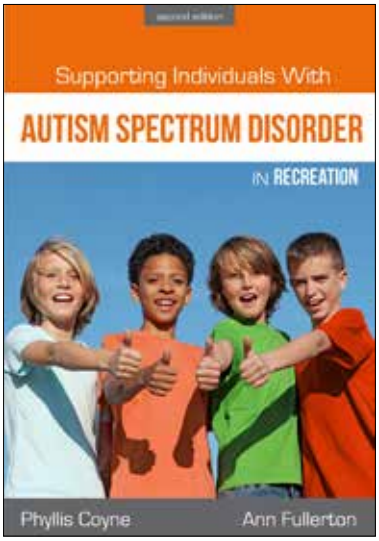

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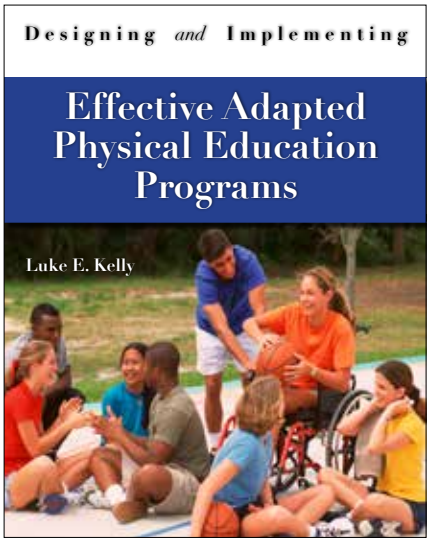

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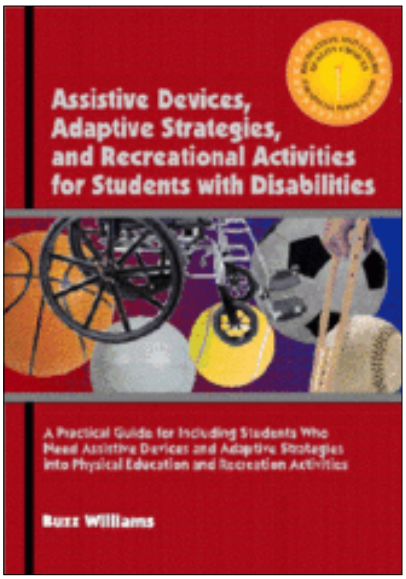

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CONTENT

Terminology:

Palaestra **(pronounced \pə-les'-trə\) is a Greek word meaning sport school or gymnasium. The publisher of *PALAESTRA* strives to use terminology that conforms with current accepted usage. Focus is on people, not disabilities—that is, students who are blind, athletes with spinal cord injuries, participants who are intellectually disabled. Reference is to individuals with disabilities, not handicaps or impairments.**

A Tribute to Dr. David A. Auxter

Those of you who met David once, twice, or 100 times always saw the same David and his unique personality, humor, and exceptional and keen mind. For those you who never met or know him only through his professional writings, he was a driving force in the development of Adapted Physical Education and later Adapted Physical Activity throughout his professional career and then throughout his personal career. David passed at the age of 91 years while maintaining oversight of Congress' decisions on the health and welfare of individuals with disabilities and developing a series of 20 research projects to investigate the environmental impact of pollution on his property in northwestern Pennsylvania. We had the opportunity to work with David over the past 34 years. He was a professor of Adapted Physical Activity at Slippery Rock University of PA in the 1970s and '80s then subsequently while he lived and worked in Washington, DC with Special Olympics International, the Kennedy Foundation, and the Consortium for Citizens with Disabilities. David is the author of many of the Special Olympic Coaching Manuals that you have probably used and was instrumental in the development of the renewed Camp Shriver Program in 2007 in conjunction with Ms. Eunice Kennedy Shriver and Slippery Rock University's Adapted Physical Activity faculty and students. It is safe to say from both of us that Dr. Auxter was our most influential mentor who crafted our professional careers, and we are indebted to him forever.

Bev Martin
Robert Arnold
Former Colleagues

During my junior year at Slippery Rock State College, I enrolled in Developmental Physical Education, a mandatory course required for health and physical education majors taught by Dr. David Auxter. In this course he covered a vast amount of material related to motor development and adapted physical education. Students in the course were required to demonstrate knowledge they learned through skills tests. Most students will recall Dr. Auxter's signature "ready-go" signal to begin the testing. I was successful in this course and graduated a year later.

After graduation, at my surprise, Dr. Auxter offered me a graduate assistantship at SRSC. He had obtained a grant from the U.S. Department of Education for training and research in a teaching method known as Individually Prescribed Instruction (IPI). This came soon after the passing of PL 94-142, the Education for All Handicapped Children Act of 1975.

In addition to the graduate coursework, Dr. Auxter provided his graduate assistants with many hands-on experiences in adapted physical education/activities. These experiences drew us closer as a team and we carried on the tradition of calling Dr. Auxter "Doc." The experiences also had a significant impact of how we would carry out duties in our professional lives.

Doc encouraged me to pursue dual certification in special education. The combination of adding special education teaching certification to health and physical education teaching certification was something never done before at SRSC and there were some barriers to overcome. Doc supported me throughout this process and I am grateful for the extra opportunities the special education teaching certification has provided for me.

My professional life led me to Washington D.C. a few times a year. Although Doc was "retired" at this time, he still took the time to meet with me to discuss issues in physical education. He continued to impress upon me the importance of following regulation, legislation and policy and how they affect services to individuals with disabilities. Doc modeled a work ethic like no other professional with whom I have worked. His knowledge, intensity, passion, and perseverance are matched by none. He always stood up for what he believed in regardless of the level of support for his position. He motivated me to perform at my highest potential. His longstanding dedication to adapted physical education/activity was phenomenal. If he could tell us something today it would be to continue serving our profession, or in his words, "stick with the program." He will be dearly missed.

Bev Martin, Itinerant Physical Educator, Retired
Midwestern Intermediate Unit IV

I first "met" David through my undergraduate class while attending Temple University and used his textbook *Adapted Physical Education* (Arnheim, Auxter, & Crowe, 1973). I met David personally in my first year as assistant professor at Slippery Rock University. Like Bev years before, David encouraged me to follow legislation and policy, saying that "funding follows policy." Following his retirement, we worked together for many years as department editors of the "Legislative Update" for *PALAESTRA*, and spoke and wrote often about the value of physical activity and health for persons with disabilities. With Tom Songster, Special Olympics International and Ms. Eunice Kennedy Shriver's "right-hand man," David brought Ms. Shriver's passion for reinvigorating Camp Shriver and asked Slippery Rock University to assist. David and Tom travelled several times to the "Rock" where we developed extensive training programs for 28 programs across the country that were interested in conducting Camp Shriver on their campus/community. In fact, two undergraduates spent that summer at Ms. Shriver's home conducting her own Camp Shriver in her backyard. Looking back, the highlights of my career and the most influential moments always came late at night as we developed the next edition of "Legislative Update." He was fascinating to listen to. Few professionals were as committed and passionate about our profession as Dave was. He mentored me throughout my professional career and was instinctive in current issues and topics regarding federal disability policy and legislation. May he rest in peace.

Robert Arnhold, PhD, Professor
Adapted Physical Activity
Slippery Rock University

Sensory Strategies Outside of School

Marissa Hunter, MEd, COTA/L
Cornerstone Therapy Associates, Ashland, VA

Winter break is coming for most children in public and private schools. Below are generalized sensory ideas for both children with sensory challenges, and information for their family members who are interested in facilitating opportunities for input. The fun part is realizing how much sensory opportunity there is in a child's everyday environment! These opportunities are important during the long winter break (and certainly during the even longer summer break) when there is a period of time that can lack routine and structure. However, these activities also can and should be important to incorporate year round.

First, what is "home" for you and your family where you can add in some sensory strategies outside of school?

Think about the environment that your kids spend time in when not in school. Is it mostly in the house? In the backyard? At a local playground or park? Next, consider that sensory opportunities at home may be most beneficial if you follow your child's lead. For example, is he/she constantly bumping and crashing into furniture or crawling on all fours? Is he/she the first to find a way to climb a playground set or swing so intensely that your heart skips a beat? Is he/she constantly mouthing on items (even non-food items like shirt collars, pencils, etc)? Perhaps your kid won't eat certain tastes or textures, or adversely they can't get enough?

Maybe you have answered "yes" to a few of these, or maybe none of the above mentioned sound relevant.

Why should I care about sensory opportunities?

We all have different sensory systems that we depend on to take in information, sight (vision), hearing (audition), taste (gustatory), smell (olfactory), touch (tactile), joint position (proprioception) and balance and movement (vestibular). Cool fact: There's actually an eighth sense, but we can touch on that in a future post (so check back!). Regardless of our age, we all have different occupations or roles,that require us to take in, modulate, and discriminate a variety of sensations. Whether your role or occupation is being a CEO in a fast paced office environment, or a pre-k aged student prepping for transitioning to school, or even a student working to be available and attend to academics.... we all have sensory needs.

**For more information, refer to American Occupational Therapy Association (AOTA)'s Frequently Asked Questions document regarding Ayres Sensory Integration.

https://www.aota.org/-/media/Corporate/Files/Practice/Children/Resources/FAQs/SI%20Fact%20Sheet%202.pdf

All right, give me some great sensory ideas!

Think about what your environment is and use the following ideas to further develop whether you're at your house, or out in a public location like a pool, playground, or yard:

Sensory activities that can have an "organizing" impact (improving attention, focus, engagement)

- Jumping: On the bed, or couch, or trampoline
- Climbing: rock wall, jungle gym, monkey bars, ropes, slides, trees (safely!)
- Swinging: outdoor swings, indoor swings, porch swings, in a blanket

- Riding: scooter board, bike, skateboard, roller blades, see saw, stroller
- Pushing/Pulling heavy objects: carrying groceries, pulling weeds, vacuuming, pushing grocery cart, carrying laundry basket (or push), tug of war, digging
- Chewing: crunchy, gum, salty/spicy, "Chewelry," Cold/Thick via straw
- Short bursts of vibration for calming: back massager, pillow massage, teethers
- Playing active games: creating an obstacle course that encourages wheelbarrow walking, animal walking, running/jumping
- Blowing: whistles, noise makers, pin wheels, bubbles
- Rolling on large ball or sitting: Burrito rolling in a blanket, rolling over yoga ball, sitting on it at meal times or while sitting at the computer
- Texture Play: finger paints, shaving cream, sand (kinetic or regular), ice cubes (different sizes), play dough, water beads

Give me some examples of how to apply these ideas!

Jumping:

Read a story, or listen to a song relating to the story "Eight Little Monkeys" while letting your kids jump on a designated area.

Play a game of Popcorn on the trampoline (curling up into a ball, and let peers jump to get the person to pop up)

Active Games:

Use cards (a regular deck of cards, or Uno cards, etc.) and attach a gross motor movement with each color; every time you draw a color you have to complete that movement!

Have an indoor snowball fight with (soft and safe) snowballs. This can promote proprioceptive input and visual perceptual skill development, and could be a lot of indoor fun!

Create an obstacle course with available items that involve changing directions, rolling, jumping, climbing, etc. Provide a visual timer to see how many times the course can be completed in 2 minutes, or how fast it takes you to do one cycle. Make your obstacle course themed by animal movements, or superhero actions! Incorporate some of the items that you can ride with the obstacle course like a scooter board, balance bike, etc.

Get help from your kids with your everyday tasks such as moving laundry around the house or using a grocery cart for groceries. Depending on how you think your family dog may react, engage in a game of tug of war with the family canine.

Chewing:

Prepare your car or baby bag or purse with crunchy snacks, gum, or straws. The biting/sucking action through the jaw delivers proprioceptive input quickly.

Messy play:

Create a work space outside that can get muddy, dirty, find (safe) extra tools that your kids can use for imaginative play. Google search "mud kitchen ideas" for example. Do some gardening, provide a watering can requires a little extra effort for your kids to pick up and use to water the plants.

The take-away of this post is that there are sensory opportunities wherever you may be, and providing this input that can help your kids and family members feel calmer or more attentive does not have to feel like it's an extra chore!

These are general suggestions with ideas and items that can be readily available. For specific, client-centered sensory diet suggestions, check with your occupational therapist!

Marissa Hunter, MEd, COTA/L, is a Certified Occupational Therapy Assistant with Cornerstone Therapy Associates in Ashland, VA. Marissa graduated from Lynchburg College in 2011 with a BS in Exercise Physiology, and she earned her MEd in Kinesiology with an emphasis in Adapted Physical Education from the University of Virginia in 2012. Her graduate studies focused on including children with disabilities with general education physical education classes. Marissa currently works in a variety of settings including public school systems, adult day support programs, and in patients' homes. She particularly enjoys educating families and support staff on sensory integration, in addition to applying sensory approaches with clients.

Adaptive Sports USA 2018 Junior Nationals

Ronald Davis
Texas Woman's University

The Adaptive Sport USA 2018 Junior Nationals (hereafter referred to as Jr. Nationals) was held in Fort Wayne, Indiana from July 22–27. This year's Jr. Nationals competition featured 220 athletes with a disability, from youth through 22 years of age, who represented over 50% of the states in the United States. Owned and operated by the organization Adaptive Sports USA and locally hosted by Turnstone, this competition gave everyone a glimpse of the past, a picture of the present, and look into the future of adaptive sport. The Jr. Nationals competition is the longest standing multi-sport event for youth with a physical disability and/or visual impairment in the United States. These competitions provide an opportunity for young athletes to showcase their talent, compete with the very best, and for some, serve as a platform to international competition (i.e., Paralympic Games). Since 1984, the Jr. Nationals have provided athletic competition for wheelchair athletes ages 7 to 19, and have expanded to include youth and young adults with cerebral palsy, visual impairment, amputations, dwarfism, limb deficiencies, and other abnormalities considered congenital or acquired. Youth with intellectual disabilities also compete in certain events. Adaptive Sports USA reports serving over 5,000 youth since it was first established and this year's Jr. National's competition continued to bring exciting, competitive, and educational experiences for athletes, parents, and spectators.

Adaptive Sports USA

The organization entitled Adaptive Sports USA is a non-profit organization that was founded in 1956. This organization is recognized by United States Olympic Committee (USOC) as a multisport organization that supports local, national, and international collaboration of sport engagement. Adaptive Sports USA promotes sports such as archery, powerlifting, shooting, swimming, table tennis, and track and field for those with a disability. Parents of non-athletes sought information on how to get their own children with a disability involved.

Susan Rossi, executive director of Adaptive Sports USA offered these suggestions: parents should take a purposeful, determined approach to learning more about the opportunities for involvement in adaptive sport. She recommends contacting Adaptive Sports USA and reviewing the free material available from this organization (see www.adaptivesports.org). But more than that, Ms. Rossi wants to encourage parents to ask questions about opportunities for adaptive sport at their children's schools. Conversations with the schools' general physical education teachers or adapted physical education teachers will certainly move these parents in the right direction. Rossi's overall suggestions were to try not to rush for information but to take time and be purposeful. Other sources mentioned were to consider community recreation/activity programs such as Turnstone or have conversations with high school coaches of athletes without disabilities who should include athletes with disabilities on their sport teams. Adaptive Sports USA is a member of the Athletic For All Task Force whose mission is to inform and provide the tools and guidelines by which coaches, athletic directors and school administrators can include students with a disability in interscholastic sports. Additional information can be found online at www.athleticsforall.net.

Turnstone the Local Organizer

Turnstone is a facility in Fort Wayne, Indiana, that hosts amazing programs with outstanding amenities. After a successful bid process led by Chief Executive Officer Mike Mushett, Turnstone was selected to be the host site for the 2018 Jr. Nationals Competition. This is a truly amazing facility, well appointed, completely accessible, professionally staffed, and established to empower people with disabilities to reach their full potential. The organization's tagline is "Creating Possibilities." There is more than 190,000 square feet of facility space. The most recent addition to Turnstone is the Plassman Athletic Center (PAC). The PAC includes a six-lane competition indoor running track, four collegiate-size basketball courts, four conference rooms, two warm-water therapeutic pools, bleacher seating for over 400 people, and a well-appointed fitness and cardio center (retrieved from www.turnstone.org/fitness). In addition, Turnstone has an outdoor activity area hosting the organization's inclusive early learning childcare, with additional conference rooms for group sessions for adults with dementia and other memory loss conditions.

The PAC was the site for Jr. Nationals Opening Ceremony, which started with the Parade of Athletes. Teams from 31 States, plus more than 40 athletes, who were independent of teams, marched into the PAC carrying their State/Team flags amidst the backdrop of banners dedicated to the States of the Union and our United States military service branches. The spectator bleachers were full to capacity as the athletes moved around the indoor track and then took their places in a special seating area reserved on the track infield.

Competition Venues and Format of Delivery

The competition venues for archery, track and field, swimming, and shooting were off-site from the Turnstone facility, which provided a great opportunity for the general public to attend. Archery and track and field were hosted at a local high school, swimming occurred at the city natatorium, and a private indoor shooting range was utilized for air rifle competition. The sports of powerlifting and goalball were presented in a clinic format within the PAC, which allowed spectators, coaches, and first-time athletes to experience these sports under the supervision of a trained coach. The PAC also hosted clinics for table tennis and powerlifting. Turnstone recently became a U.S. Paralympic Training site for U.S.A. Goalball, which is quite an honor and a testament to the quality of the facility, staff, and programming provided.

Instructional clinics preceded competition events each day before a competition (i.e., if track and field competition was scheduled for Wednesday; clinics for many of these sports were presented on Tuesday). By utilizing this format of clinics a day in advance of competition, athletes had additional time to learn coaching tips, complete further skill assessments, and in general be offered additional learning opportunities. The clinics were delivered by coaches and Paralympians for the field events of shot put, discus, and long jump. Many of the younger athletes had minimal training in skill performance for some of these events and providing this educational opportunity for these athletes was very beneficial. The instructional clinics allowed parents of first time athletes to ask questions of the coaches and learn more about the event. One issue in adaptive sport to comprehend as an athlete, parent, or spectator is the process of athlete classification and how it can impact competition.

Fortunately, the 2018 Jr. Nationals had a group of classifiers who were well trained and experienced to implement this important process.

Athlete Classification

The 2018 Jr. Nationals competition follows the athlete classification system, established by the International Sport Federations in agreement with the International Paralympic Committee (IPC) under the guidance of the U.S. Paralympics. The process of athlete classification provides the structure and foundation for all competition. The classification system for Paralympic sport was created to minimize a competitive advantage based on the impact of the athletes' impairment on the sport performance. At its basic level, athlete classification is an assessment/evaluation process of the athlete's ability to perform the skills associated with their sport (i.e., elbow extension during wheelchair racing; or seated balance during a field throwing event). This classification process occurs before, during, and in some cases following competition; it is ongoing. The task is to assess the impact of the impairment on the sport performance to ensure the success of the performance is attributed to skill, fitness, power, endurance, tactical ability and mental focus (Explanatory guide to Paralympic classification retrieved from www.paralympic.org).

Trained professionals implement the classification process. These professionals have backgrounds in adapted physical activity, athletic training, medical doctors,

occupational and physical therapy, and recreational therapy. The classification process, based on the IPC guidelines, is meant to answer three questions: a) is there an eligible impairment for the sport of choice?, b) does the athlete's impairment meet the minimum disability criteria of the sport?, and, c) which sport class describes the athlete's activity limitation most accurately? Given the variety of sports, different sports require performance of different activities (e.g., ambulatory sprinting compared to wheelchair sprinting, standing throwing compared to seated throwing, water entry at the start in swimming). The classification process is meant to be sport-specific; therefore it evaluates the impact of the impairment on the sport performance.

Meeting Eligible Impairment

There are 10 eligible impairment types identified in Paralympic sport and adopted by the World Health Organization (2001, retrieved from www.who.org). Because of the length of the list and the descriptions of each disability, only the names of the impairments will be identified in this article. Please take time to review the detailed information at www.who.org or www.paralympic.org. The 10 eligible impairment types are: impaired muscle power, impaired passive range of movement, limb deficiency, leg length difference, short stature, hypertonia, ataxia, athetosis, visual impairment and intellectual impairment.

Meeting Minimum Disability

Meeting minimum disability is a sport-specific criterion. Remember, the classification process is also sport specific so it is possible for an athlete to meet minimal disability criteria for one sport, but not for another. Examples of minimum disability may be standing height for an athlete considered short stature, or length of an amputation with limb deficiency or neurological integrity of muscle groups below a particular spinal cord level resulting in higher or lower functional performance allowed for a declared competition class.

Determining Sport Class

Once the athlete has been considered eligible for a sport, the classifiers will determine the sport class for competition. A sport class is a group of athletes with similar limitations impacted by the impairment; it is not a group of athletes grouped by similar disabilities. The only exception to grouping by disability is classification for athletes who are blind or visually impaired. This group of athletes is the only group considered to utilize a medical classification (e.g., field of vision and visual acuity). Generally, classifiers for athletes with visual impairments have backgrounds in the areas of ophthalmology or optometry. Athletes with intellectual disabilities may also be grouped by disability. These athletes are classified according to their IQ and will be evaluated by those professionals with a psychological background.

If an athlete meets eligibility the classifiers will assign a "sport class." A sport class is an arrangement of athletes with similar performance impairments/limitations organized together for competition. Sport classes are then considered different by sport which may allow for different types of disabilities caused by similar limitations to compete in the same competition. It is possible, but not very likely, that a high functioning wheelchair athlete with cerebral palsy (C 34) would compete in the same race as an athlete with a high level spinal cord injury (classification T 51 described as having mild weakness in shoulders, limited ability in straightening elbows and wrist function and little to no finger, trunk or leg function) (retrieved from www.usatf.org). Remember it is about the impact of the impairment on the athletic

performance. Some local competitions may allow this cross-disability format to occur in order to offer the competition event and not scratch the race due to minimal competitors in the race.

The purpose of this next section is to demonstrate the detail and complexity of conducting sporting events following Paralympic sport. These Jr. Nationals were well organized, delivered, and results reported in an efficient manner. Thanks to those officials and classifiers who worked very hard to help this sport competition move along smoothly.

Order of Competition and Posting of Results

Competition for Paralympic sport is organized according to classification by sport groups. There are three variables to clearly understand when following an order of events or results. The athlete will be identified by a Letter, a Number, and a second Number for many of the sports within Paralympic sport. Table 1 will use Track and Field as an example for a global overview of sport grouping. This table identifies which disability groups are associated by the numbering systems from Paralympic classification. All sports follow a similar system of using a letter, first number and second number. Please review www.paralympic.org for the most current rules for classification.

In the example provided in Table 2, and continuing to use Track and Field as an example, the "T" in the first column represents the sport of Track and the "F" is for Field. Since this disability group is in the 10s, the first number "1" indicates the blind or visually impaired group. The second number indicates the functional level of the athlete in the visually impaired group. These second numbers range from 1 to 3 indicating most to least visual impairment. So a T11 athlete has less functional vision than a T12 and the T13 has the highest visual function.

Table 1
Overview of Numbering System by Group Using Track and Field

Group Number	Impairments	Functional Performance Low to High matches increases in function
10s group Range 11 - 13	Athletes with visual impairments; poor field of vision and/or visual acuity	Athletes 11, 12, 13
20s group	Athletes with Intellectual Disability have difficulty with pattern recognition, sequencing, memory, or reaction time	All athletes 20
30s group Range 31-38	Athletes with athetosis, ataxia, hypertonia or other conditions associated with cerebral palsy or traumatic brain injury	Athletes 31–34 use wheelchairs Athletes 35-38 compete standing
40s group Range 40-41 and 42-47	Athletes considered Short Stature with limb deficiencies (amputations or dysmelia)	Athletes 40–41 depends on body height Athletes 42-44 lower limbs affected Athletes 45-47 upper limbs affected (i.e., above or below elbow)
50s group Range 51-54 and 51-57	Athletes considered to have impaired muscle power or impaired range of motion	Athletes 51-54 limited shoulder, arm, and hand function and no trunk or leg function Athletes 55-57 trunk and leg function increases; athletes 57 may be able to stand

Table 2
Arrangement of Competition and Results Using Track and Field as an example

Group Letter	Group Number	First Number for Sport Group	Second Number for Functional Performance
T = track	Athletes in the 10s group	Generally indicates visual impairment	T 11 T = Track 1 = visual impairment 1 – lowest functional vision
F = field	Same group	Same functional level	F 11 F = Track 1 = visual impairment 1 – lowest functional vision
Follow the same system for T 12, T13 or F12, F13*an increase in function identified by a higher number; complete functional description is not included in this article.			

Final impressions

The 2018 Jr. Nationals Competition was a showcase of excellence demonstrated by well planned, well thought out and well delivered professionals dedicated to making this a top-notch sporting event. The coordination, preparation, and delivery by the Turnstone staff and representatives from Adaptive Sport USA went far beyond expectations. There was a family atmosphere throughout the week of competition. Adaptive sport clubs from around the country journeyed by car, truck, or van to reach Fort Wayne, Indiana, for seven days of competition, camaraderie, and sportsmanship. The Turnstone center opened its doors to host an amazing event and never missed a beat. The city of Fort Wayne also supported these games by providing sponsorships for venues, transportation, and awards in true Hoosier hospitality.

Athlete registration and sign-in went smoothly, planned meals were plentiful, and parent groups shared with others from around the country the excitement of the competition. As part of the Opening Ceremony, food trucks helped create a relaxed atmosphere as teams and family members built new and kindled old experiences. Especially exciting was the opportunity to watch the younger athletes compete and set a course for future sport engagement. Much of this action was coordinated by Mr. Jaime Garzon, event director. Mr. Garzon did an outstanding job keeping the momentum moving forward prior to, during, and following each day of competition. He helped coordinate athlete and family check-in/registration, lodging requests, and transportation needs as they arose.

Now What about You

To the Adapted Physical Education and Physical Activity professionals, please consider doing what you can to contribute to the development of sporting opportunities for students with a disability. Consider looking into working with students in your schools to become active in adapted sport. Learn more about Junior Nationals and all that is involved by becoming active with this event. For some, Jr. Nationals may not be the ideal starting point, as athletes must meet qualifying times to participate, but other opportunities exist to help get a young athlete with a disability started in local adapted sport.

Consider learning more about how adapted sport is more alike than different from able-bodied sport. Consider contacting Adaptive Sport USA and/or the Athletics For All Task Force as well as the nationwide network of chapters and discussing new ideas for a program in your area. The following States brought teams to this competition: Alabama, Arizona, California, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Minnesota, Missouri, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Tennessee, Texas, and Wisconsin; is your State represented? If so, great, if not consider investigating how to get involved and start a program in your area. There were an additional 41 athletes that participated unattached to a team which could be an opportunity for some of you to take action; the Adaptive Sport USA organization is available to help. The 2018 Jr. Nationals Competition was inspirational, educational, and competitive; do what you can as Adapted Physical Educators and Activity Specialist to get involved.

Summary

The Adaptive Sports USA 2018 Junior Nationals included 220 athletes (ages 6-22) with 64 coaches from 31 states, including 85 first time competitors. Athletes competed in seven sports including archery (23 athletes), paratriathlon (14 athletes), powerlifting (10 athletes), shooting (7 athletes), swimming (71 athletes), table tennis (8 athletes), and track and field (158 athletes). Additionally, educational clinics to advance the skill development of both athletes and coaches were offered in field, goalball, powerlifting, shooting, and swimming.

* Special Note: results will not be included in the paper; please go to the following link for complete results http://juniornationals.adaptivesportsusa.org/awards-results/.

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Design Thinking as a Strategic Planning Tool for Adapted Physical Activity Programs within a University Setting

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Abstract

As a community-campus partnership, the adapted physical activity programs at Indiana University-Purdue University, Indianapolis used design thinking as a method for strategic planning to assist in expanding and developing community-based programming. In partnering with the Design thinking graduate program at Herron School of Art and Design, the Adapted Physical Activity Clinics collaborated on the participatory research project using the design thinking process framework over 16 weeks. By the end of the strategic planning process, the programs determined a sustainable mission and vision. Design thinking also revealed the benefits that the programs and their future opportunities hold, not only to the families served, but also to undergraduate students participating in service learning.

Keywords: *Adapted physical activity, community programming, planning*

Introduction

Service learning is a structured learning experience that blends community service with preparation and reflection to gain further understanding of course content, a larger appreciation for a particular area of study, and enhancement in students overall personal values and civic obligations (Andrew, Richards, Wilson, & Eubank, 2012; Roper & Santiago, 2014). What makes service learning more appealing than traditional teaching and learning styles, such as instructor centered teaching, is its "counter normative" pedagogy approach. That is, students, instructors, and community partners co-create learning and teaching-learning processes become a collective effort (Clayton & Ash, 2004).

According to Roper and Santiago (2014), students develop a sense of civic responsibility when service learning is incorporated into the undergraduate curriculum. Students learn about instruction and implement instruction through integration and application of the knowledge that they received in the classroom (Weber, 2008). By experiencing the art of instruction in a safe and structured environment, students make realistic connections to what they will be experiencing later in their individual professions (Weber, 2008).

The adapted physical activity clinics (henceforth referred to as "clinics") at Indiana University-Purdue University Indianapolis (IUPUI) are community-based physical activity programs for people with disabilities designed to increase physical activity opportunities and provide service learning experiences for students. From the onset, clinics were designed to be family centered and community based. Several professionals were involved in the initial program design and considerable effort was made to co-create programs with families and service professionals. Additionally, clinics serve as service learning and community engagement opportunities for undergraduates pursuing a Kinesiology degree in Exercise Science or Teacher Education (PETE). As with many university settings, these programs are one of few opportunities for students to work with individuals with disabilities in a physical activity setting.

To enhance co-collaborative nature of clinics, an advisory board was established with the purpose of defining the future possibilities of the programs. The looming question was, "What can we build moving forward to enhance service delivery and promote increased adapted physical activity?" In collaboration with the Herron School of Art at IUPUI, the clinic advisory board worked to build steps for service delivery expansion using design thinking as a strategy. What we learned was how collaboration between professionals, students, community, and participants resulted in a thoughtful plan to expand programming. The purpose of this article is to describe the process of design thinking and discuss the importance of design thinking as a method to create a strategic plan for adapted physical activity community based programming.

Program Descriptions

The clinics at IUPUI represent five individual programs catering to specific demographics within the disability community. Three of the five programs run one day a week for six weeks each fall and spring semester, while the other program runs one day a week for six to eight weeks over the course of the summer (Table 1). Each program pairs an Exercise Science or PETE student with a participant. Students' transition in-class learning to a community-based setting including but not limited to: assessment, planning skill-based activities and reflecting upon their weekly experiences.

The two foundational programs are Motor Activity Clinic (MAC) and Ability Fitness Clinic (AFC). Motor Activity Clinic

Table 1
Program Description

Program	Focus	Duration	Participant Age Range
Motor Activity Clinic (MAC)	Gross and fine motor skill development Aquatic skill development Developmental activities	Once a week Two hours Six weeks during semester	Three to sixteen
Ability Fitness Clinic	Physical activity and fitness	Once a week for two hours Six weeks during semester	Eighteen year of age and up
Advanced Motor Activity Clinic (AMAC)	Transitional physical skills which may include sports, fitness or advanced aquatic skill training	Once a week for two hours Six weeks during semester	Sixteen to eighteen years of age
Promoting Adapted Sport Skills (PASS)	Individually chosen sport skill development (group or individual)	Once a week for 90 minutes Six weeks during the summer	Nine and up
Live*Laugh*Dance	Adapted dance program focused on motor coordination and group dance skills	Once a week for two hours Eight weeks during the summer	Fifteen and up

serves families who have children with disabilities aged three to 15 focusing primarily on gross motor movements and aquatic skills whereas the Ability Fitness program focuses on increasing independence and quality of life for young and older adults with disabilities. Live*Laugh*Dance is a program developed specifically for individuals with Down syndrome focusing on dance (balance and coordination) and socialization. The PASS Clinic (Promoting Adapted Sport Skills) was developed to allow families and participants self-select sport skills that are then the primary focus of programming. Finally, as a means to bridge the gap between age groups in MAC and AFC, an Advanced Motor Activity Clinic (AMAC) was designed for participants who aged out of MAC, but were not yet ready to progress to AFC by blending the aquatic aspects of MAC with the physical fitness and independence aspects of AFC.

For 20 years the programs offered continued to grow in participants. There has been an ever present and growing desire from families and other community members to expand programs offered by frequency, additional locations and facilities closer to suburban and rural areas of Indiana, and more staff specifically trained to work in adapted physical activity. Program expansion would require significant investment from the university, in-kind staff, graduate students, and undergraduate scholars. Collectively, council members elected to pursue a unique type of strategic planning called design thinking. Using the knowledge and expertise of the design thinking graduate students and their director at Herron School of Art and Design at IUPUI, we developed a series of emphases that will lead our mission forward and expand our programming to the community.

Design Thinking

The graduate program in the Visual Communication Department at Herron School of Art and Design at IUPUI focuses on design thinking as a core curriculum framework. Design thinking methodology utilizes an innovative, people-centered approach to solving problems, which focuses on exploring and then identifying opportunities before generating possible solutions (Hong et al., 2016). The program approaches design as a basic human capacity, focuses on forms of inquiry and actions involved in designing, and aims to empower people to be a creative change agent. This ambiguous and abstract quality of organization provided the powerful pedagogical context for the students to apply the inquiry process of designing.

Among many definitions of design thinking, the graduate program at Herron School of Art and Design approaches "design" as a form of inquiry involved in problem solving. This approach takes a broader view referred to as "abductive reasoning". Abductive reasoning seeks an explanation based on relevant evidence that is already well known and widely accepted (Leavey, 2010; Orthel, 2015). The process is about discovering problems or opportunities based on pertinent information from stakeholder interviews and qualitative observation.

This methodical approach with participatory and co-creative aspects was well aligned with the clinic's mission and vision and was very appealing to the clinic advisory council. The advisory council worked with Herron's first year graduate course, "The Collaborative Action Research in Design," which is an integrator course in which Herron graduate students apply theoretical and methodical understanding of design thinking to real-world problem solving. What we learned was how collaboration between professionals, IUPUI undergraduate students, community, and participants resulted in a thoughtful plan to expand programming.

Design Thinking Methodology for Strategic Planning

Design thinking method considers every possible facet and every affected constituency when crafting a possible solution by using a holistic research approach. The most appealing characteristic of design thinking is the underlying ability to make the researcher understand the human experience and the patterns that emerge through acquired qualitative data. Tactical exploration of community needs, environmental and social factors (such as facility accessibility, facility proximity, and social interactions with other individuals with and without disabilities), competitor identification, and current or emerging trends are fully examined (Holloway, 2009). As a strategy, it provides a collaborative method to "messy" organizations (e.g., multiple programs, several constituents) and has been studied across several different fields including engineering and architecture (Kimbell, 2011).

The course "Collaborative Action Research in Design" taken by the design thinking graduate students at Herron School of Art and Design introduced the Simplex Process as an alternative design thinking process model. The Simplex

Process allowed the work to be done within a 16-week time frame. The student research team applied this process model to seek solutions to the question, "what can we build moving forward to enhance service delivery and promote increased adapted physical activity?"

The Simplex process uses both divergent and convergent thinking. Divergent thinking is an exploratory, generative side of cognitive approach while convergent thinking is analytical and evaluative to bring closure to each stage of the design process (Hong et al., 2016). While design thinking has order and structure as a methodology, it should not be seen as a concrete or inflexible approach to design. Often faced with "ill-defined" problems, using the simplex process one does not have to follow any specific order and stages can often occur in parallel or be repeated. As such, the stages should be understood as different modes that contribute to a project, rather than sequential steps to be followed. Ability to move back and forth between stages of the Simplex process was fundamentally important to our organization and multiple stakeholders (see Figure 1b).

The clinics advisory board at IUPUI collaborated with the Herron design thinking graduate students to use the Simplex process as a co-collaborative strategic planning process. Through their initial interaction with the advisory board, the Herron student research team was able to identify the key stakeholders for the organization including clinic family members, clinic participants, student's enrolled in the course, advisory board members and other community members. Using a content co-creation approach as well as participatory action research together with key stakeholders, the design thinking team collected data regarding the benefits (met needs) and opportunities

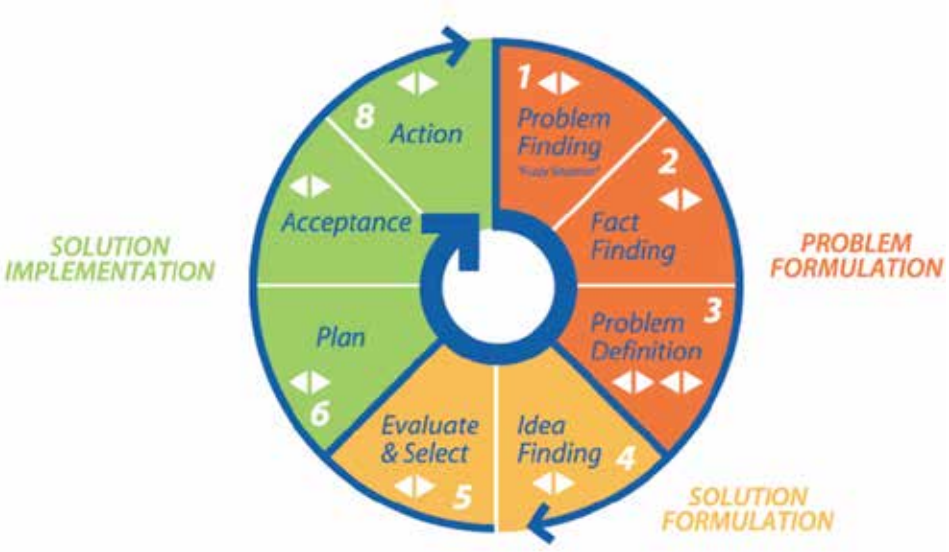

Figure 1a. The Simplex Process' visual depiction

The eight steps of the Simplex Process can be divided into three subcategories: Problem Formulation (green), Solution Formulation (blue) and Solution Implementation (purple). The steps within each individual subcategory can be defined in the following way:

Step 1: Problem Finding- Identifying all fathomable problems or opportunities that an organization may face that hinders the ability for the party to improve upon or strengthen the current standing of the organization.

Step 2: Fact Finding- While deferring convergence and actively assembling information that relates to a specific situation causing an organization difficulty, the evaluation and selection of facts that will be the most beneficial in developing a set of problem definitions for the next step are outlined.

Step 3: Problem Definition- Using divergence, the facts outlined in Step 2 are converted into a variety of "how might we?" statements or challenges and one (or a few) of these challenges are chosen to be the most beneficial to solve. For this step, it is crucial to ask the right questions and determine the best problem definitions in order to truly assist the organization.

Step 4: Idea Finding- Using the target problem definitions determined in Step 3, Idea Finding consists of deferring convergence while generating a large number of prospective solutions to the problem. This step may also consist of the converging of a smaller, but equally possible, number of solutions for consideration.

Step 5: Evaluation and Selection- In order to determine an unbiased and accurate evaluation of potential solutions, a wide variety of open-minded criteria is necessary so that the selection and application of the best possible solutions to the problem continues to move forward toward implementation. It is important to remember in this step that problem solving does not always end with the development of a good solution, preparation for implementation and actual implementation play a factor in the overall solution as well.

Step 6: Action Planning- Taking specific steps of action that leads to an effective installation of the evaluated and selected solution.

Step 7: Gathering Acceptance- As a way to overcome resistance to change within an organization, this step focuses on ways to increase the feeling of ownership for a new solution by showing those within the party that these solutions benefit the whole organization and can minimize potential problems in the future.

Step 8: Action- Implementing the solution is key to decision making and problem solving, and no matter how carefully specific steps of the action plan are laid out, the solution cannot move forward until the plan is actually put into motion. Reevaluation of the solution after action is taken depicts the cyclical design of the Simplex Process.

Figure 1b. Eight-step Simplex Process

(unmet needs) of the organization (see Appendix B). The following outlines how moving through specific steps of the Simplex Process assisted our board's future direction planning.

Phase One: Problem Formulation

Utilizing the Simplex process, the Herron team started with problem formation. After informal conversations with the advisory board and clinic director, we were able to identify key issues facing the growth and sustainability of clinics. Problem formulation includes three separate steps: problem finding, fact-finding, and problem definition. An analogy would be identifying our strengths and weakness surrounding our central question of how to grow and maintain quality. The following describes how we utilized each step to frame current challenges facing our advisory council.

Step 1: Problem Finding. The purpose of this step is to identify all fathomable problems or opportunities that an organization may face hindering the ability for organizational improvement. Within this step, key organization stakeholders were identified and introductory research was performed at each program site. This included observing participants, students, and the overall clinic environment. While observational research was being conducted, individuals were being identified to conduct more formal interviews for fact finding.

Step 2: Fact Finding. With the simplex process, fact-finding follows problem finding. This step is concerned with actively collecting information that causes an organization difficulty (i.e., problem finding). To gather more information on the existing experience and the people clinics serve, the design research team conducted interviews with stakeholders and observed the clinic process. While gathering information related to the perceived opportunities (i.e., facts), the design team also evaluated and selected facts that helped define the problems within clinic programming. The redundancy between problem and fact-finding was crucial to narrow in on solvable problems but also identify future issues that could be addressed.

Step 3: Problem Definition. In problem definition the facts outlined in Step 2 are converted into a variety of "how might we" statements or challenges and one (or a few) of these challenges are chosen to be the most beneficial to solve. For this step, it is crucial to ask the right questions and determine the best problem definitions in order to truly assist the organization. The design team diverged and converged "How might we?" opportunity statements to turn identified problems into opportunities for action. After determining which opportunities are strategically appropriate and relevant, the design team began framing the problems in an intentional and tactical point of view (see Appendix B). It was determined that our overall strategic problem statement was defined as, *"How might our programs become sustainable and expand while maintaining quality?"*

The next phase of problem definition was planning, the overall objective was to generate a road map that the advisory board could utilize as a strategic planning tool to attain the identified objectives noted above. During this process, the Design thinking team met with stakeholders to gain insight into what beliefs were around sustainability, quality and growth. The council struggled with addressing two primary questions: Would growth sacrifice quality? If we do not grow, can the programs become sustainable? The identified problems were then prioritized based on the discussed criteria such as urgency and resources. Moving forward, the advisory council needed to find a solution to become sustainable and expand programming.

Figure 2. "How might we" statements created to determine unmet needs of clinic.

Figure 3. "How might we" statements and what they uncovered in the process.

Figure 4. Planning Sessions led to the formation of program "roadmaps" to assist in growth and expansion.

Phase Two: Solution Formulation

In phase two, the design thinking team and stakeholders explored possible opportunities through the use of "how might we" statements. Four potential opportunities were examined in the solutions phase including: 1) How might we transform clinic's spirit into an organizational identity? 2) How might we retain the social benefits of the program? 3) How might we secure organizational resources? and 4) How might we foster a relationship between clinics and the community?

Step 4: Idea Finding. The advisory board decided organizational identity, reflecting the current and future vision and mission, was the most prioritized task. In defining organizational identity, the design team conducted multiple ideation sessions with key stakeholders including families, advisory board, graduate students, student assistants, and professor. Stakeholders were asked to envision current state of clinic programs and what the overall impact of the programs meant for them as a community (e.g., students, families, etc.). Common themes were identified then categorized (see Figure 5). These categories were used to shape our mission and vision but also to formulate an action plan.

Steps 5, 6, and 7: Evaluation and Selection, Planning, and Acceptance Gathering. From step four, the research team could identify the qualifiers or key aspects in composing a new vision and mission statement for the clinics. However, the course structure, which was 16 weeks long, did not provide enough time for the team to produce the final mission and vision statement (vision and mission were developed soon after strategic planning sessions ended). These steps mainly focus on building a consensus on the proposed design solution by examining criteria for implementation. For example, although the Advisory council did not develop a specific vision or mission statement, we had clear elements in place. Through the processes of identifying key elements, we were able to move forward and develop a 12-month road map to strategically move forward.

Step 8: Action. The major output from this collaboration was a road map for strategic planning which is based on the consensus among the stakeholders and the needs of the clinics. This road map, as a critical decision aid tool, would serve the Advisory council well moving forward (see Figure 5). This roadmap became our strategic plan. It focuses the Advisory council and sets a path for objective and purposeful community engaged planning. The following will address how usage of design thinking as model of strategic planning was both useful and innovative for community-based adapted physical activity programs.

Results of Design Thinking on an APA Program

The six-month strategic planning process assisted the council in the creation of a sustainable mission and vision for our programs but it also elucidated how our families and students see the benefits of our programs and future possibilities. Following a path through the problem formulation phase, fact finding revealed key stakeholder values about clinic. During interviews families reported on how the environment was conducive to learning and instruction and that planned activities were fun, engaging, and age-appropriate emphasizing the benefit of students' experience, hands-on learning, and professional attainment of skills. Significant to the fact-finding step was how the "facts" lead to the development of vision and mission statements inclusive of family, community, and student education.

Ideation sessions lead to action solutions. For example, families reported that clinic's low-cost ($35 per program) as well as its convenient and regularly scheduled programming allowed for high member participation. Additionally, the emotional environment fostered through clinics allowed for a safe and familiar setting for families and children. Students reported a strong desire to have additional discussions regarding their anxiety and worry going into clinic. Also important to students were more opportunities for hands-on work and concentrated time with staff during clinic. These ideas shaped how we train and debrief students during clinic and also resulted in developing a new program to increase our year-around programming for families.

Opportunities for growth were also identified and were scalable in nature. Some opportunities were infrastructure (e.g., online registration, parking, program waitlist) while others were related to program administration (e.g., student training, equipment used). Opportunity-focused feedback was critical to advisory council and aided in significant planning measures. Feedback also positively changed infrastructure investment. For example, by the end of the strategic planning process, a new program coordinator was hired to specifically address clinic growth opportunities and logistics. In conclusion, the benefits of substantial stakeholder discussion, reduction of interview data, challenging

ADVISORY COUNCIL ENVISIONING SESSION

Reflecting upon the Mission & Vision of APAC

How might we transform APAC's

What does APAC mean to me?

- Family & Friends: APAC is a place for family to come together and a place to make friends.
- Ability: APAC focuses on ability, not disability.
- Opportunities: It is a win-win opportunity for learning and research.
- Exercise: People at APAC engage in motor skill development, sports, and fitness in a fun and relaxed setting.
- Positive emotions: People at APAC feel confident, happy, creative, empathetic, joyful, and passionate.

Who are APAC's community?

- Participants & Families: People with disabilities, parents, caregivers, grandparents, extended family, and friends all care about APAC.
- IUPUI: The people of IUPUI are students, teachers, educators, alumni, faculty, and staff.
- Community: The community at-large, donors, and resource organizations are part of the APAC community.

What does APAC mean to the community?

- Education: It is a learning environment that focuses on individuality and positivity.
- Acceptance: People feel welcome, included, supported, and that they belong.
- Excercise: APAC provides access to excercise and fosters a healthy lifestyle.
- Relationships: It is a unique environment where people thrive and build genuine relationships.

Why does APAC exist?

- Education: APAC provides a hands-on, mutually beneficial teaching and learning experience for participants and students.
- Need: A core group of people had a vision to fill the need to better serve the community of people with
- disabilities.
- Change: APAC is a catalyst for acceptance, inclusion, and positive change.

Figure 5. Idea Finding

understanding of opportunities, and formulating and action plan substantially changed our movement towards goals and comfort in having obtainable goals.

Discussion

Design thinking is a systematic and people centered approach to research that uses divergent and convergent thought processes to formulate opportunities for change within an organization. Why is the process of design thinking so valuable? Adapted physical activity programs whether at the undergraduate or masters level, will use community-based programs to train students in teaching and supervision. Training programs provide a valuable base of skills for students and future professionals but, with strategic thinking, these programs can also be a valuable resource to the community in a much more enriched fashion. The idea of co-creating strategy to institutionalize programs, fund programs, and create unique learning situations for students can be the outcome of design thinking.

The use of design thinking, specifically "how might we" statements allowed for our council to think not only about programs and students, but how to facilitate community development, program expansion, and educational opportunities. Strategic planning also facilitated our communication avenues specifically to University administration, granting and foundation agencies and future community partners. As community-based programs continue to grow and thrive in the adapted physical activity community, methods such as design thinking can greatly enhance quality service delivery and student educational experience.

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Drums Alive®: A Research-Based, Multi-Disciplinary Drumming Fitness Approach to Brain and Body Health and Wellness

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Introduction

Drums Alive® is the original and only research-based, comprehensive, all-inclusive program in the world that applies drumming fitness protocols in a multi-disciplinary way through physical education, fitness, dance, music education, mindfulness, relaxation and inclusion strategies for the improvement of brain and body health and wellness. The key to the success of this approach is the implementation of its multiple programs and modules that use music, movement, rhythm and drumming to improve all aspects of life throughout the physiological, psychological, neurological, educational, rhythmical, and socioemotional spectrum in all individuals, regardless of age or socioemotional ability. Its fully active participatory elements are designed to strengthen critical thinking abilities through timely, scientifically based executive functional activities that meet national fitness and general educational requirements.

Drums Alive originated out of necessity when, Carrie Ekins, the creator and founder, suffered a devastating hip injury in 2001 that resulted in extremely limited movement and exercise opportunities. Since Carrie was a competitive collegiate athlete and fitness professional, she wanted to expedite the long healing process while going through the normal medically directed recovery protocols. During her rehabilitation, Carrie found a few cardboard boxes in her room and a set of drumsticks and simply decided to begin drumming on those boxes to obtain some form of exercise. To her surprise, she unexpectedly experienced an overwhelming sense of euphoria, with additional physical benefits, that lifted her mood and increased her heart rate to a target zone for improved conditioning like those she experienced through years of teaching aerobic dance, yoga, tai chi, and qigong.

This experience led Carrie to study the attributes of drumming exercise, vis-á-vis the impact it had on health and wellness. Through her research and direct practical application, she discovered that, in addition to improved cardiovascular health, muscular strength and endurance, there were measurable and significant evidence supported improvements to brain efficiency, neurotransmitter messaging and endorphin release that resulted from the synchronization of the two hemispheres of the brain and its associated improvements to physical and cognitive health, as well as to healing, learning, and creative capability. Her research led to the founding of the Drums Alive program in 2001. For the past 17 years, the protocols she created and espoused by thousands around the world have been used for research interventions by several universities to obtain data and establish research-based strategies to improve overall brain and body wellness in all population groups, including those with diverse abilities.

What is Drums Alive Drumming Fitness for Health and Wellness?

For the purpose of establishing a common understanding and providing an appropriate backdrop for discussion, Drumming Fitness is defined by Drums Alive as an "aerobically centric, cerebrally focused, multi-disciplinary, polyrhythmical, kinesthetic musical expression of communication." The protocols require the use of various drumming exercises performed in an enriched environment with the purpose of improving cardiovascular health, motor skills, concentration, learning, memory, cognitive functioning, academic performance, and social-emotional development. All necessary resources (i.e., music, CDs, DVDs, choreography, and research) are provided to each instructor by Drums Alive at www.drums-alive.com or www.drumsalive.eu.

Equipment

The Drums Alive basic equipment consists of a stability ball, a ball holder and drumsticks. In addition, we utilize a variety of other equipment throughout the Drums Alive

Drums Alive Stability Ball

Drums Alive Bucket Base

Drums Alive Drumsticks

program that are listed in the curriculum, lesson plans and class designs.

Why Drum?

To fully understand the comprehensive utility, power and influence of drumming, Remo Belli, Founder and CEO of Remo, Inc, and arguably one of the world´s experts on drumming, said, "It's time to stop thinking of the drum as just a musical instrument. Start thinking of it as a unifying tool for every family, a wellness tool for every retiree, and an educational tool for every classroom." He added the following comment: "The rhythm of life is a symphony and expression of our soul. When we drum, our inner voice resounds. Our energy raises, vitality improves, and our emotions are exhilarated. Group drumming opens the doors of communication and allows us to speak where words often do not pass. Music, rhythm, and dance enhance self-esteem, ensure a healthy workout, stimulate our minds, boost our creative potential, make us laugh, and connect us on many levels" (Remo, 2003).

In addition, William Two Feathers, a notable Native American Spiritual leader said, "The drum is one of the most ancient instruments, dating back tens of thousands of years. It has been used for festivals, celebrations, healings, and rituals in the most diverse cultural areas. The sound of the drum, and its simple, strong rhythms allow humans to experience a connection with the earth and its natural flow. Drumming awakens a noticeable energy, a vitality in us, which lets us know intuitively that rhythm is good medicine. The beating of the drum is an intimate dialogue that shifts us into another world, where spirit, bodies, soul and nature can dance together as one. Drumming has been used for generations. Drumming is good medicine. It captures our innermost senses and provides us with the gift of rhythm and personal expression. Drumming connects our mind, body, and soul with the deeper rhythms of life. Rhythm and music allow us to share our intimate dialogue and speak with a common tongue. Drumming is a powerful experience and simply put, it is FUN! It reminds us of the experiences of our childhood and allows us to view the world in a new light, with opportunities for growth" (William Two Feathers, 2004).

Drumming Exercise Protocols Supported by Scientific Research

In 2009, the Drums Alive Program, with its multidisciplinary drumming approach to fitness, health, and wellness, was selected by Chemnitz University of Technology for their protocols to conduct an extensive and comprehensive scientific study called, "THE DRUM BEAT Chemnitz Drumming Project." The research members consisted of an interdisciplinary team of scientists, musicians, teachers, physicians, therapists, and communal authorities that investigated the broader application of drumming, movement, and exercise. The results and findings provided research-based evidence that the Drums Alive Intervention, with all its drumming fitness methodology that combined endurance, strength training, cognitive exercises and highly coordinated movements, and emotional elements in an enriched environment, provided cognitive, physical and behavioral improvements for a majority of the participants.

We all experience the world through our senses (sight, touch, sound, smell, and taste). There is a continual flow of information sent to the brain from these sensory organs which is then filtered, analyzed and stored for current or future use, or ignored if the information is deemed irrelevant. This is important because we interpret and react to our surroundings based on this information the brain receives and processes from these senses; and those with learning disabilities find that the difficulty is not with one specific sense, but with how multiple senses are experienced all at once. Homo sapiens are the only species that can follow complex rhythmic patterns that afford synchronized group behaviors, such as singing, drumming, and dancing (Brown, 2011). In addition, they are also the only species that forms cooperative alliances between groups that extend beyond consanguineal ties (Hagen, 2004). One way to form and strengthen these social bonds may be through music, specifically the kind of temporal and affective entrainment that music evokes from infancy (Phillips, Keller, 2012). In turn, these musical entrainment-based bonds may be the basis for Homo Sapiens' uniquely flexible sociality (Janata, 2003). If this is the case, then our evolutionary understanding of music is not simply reducible

Pictures courtesy of Chemnitz University using Drums Alive Protocols to conduct their research

to the capacity for entrainment; but, rather music is the arena in which this and other capacities participate in determining evolutionary fitness. Music stimulates the brain's reward centers and as a result releases certain levels of dopamine, a neurotransmitter, which mediates pleasure and is released during pleasurable situations and stimulates one to seek out those pleasurable activities (Diamond, 1964).

Our brain has the ability to associate an event to a certain influence, and many times music is that stimulus. Those influences are converted to memories and stored in dormancy until retrieved by a repeat of the stimuli that produced that particular association. The multi-sensory nature of music taps upon many regions of the brain simultaneously and engages and delights multiple sensory systems (i.e., tactile, kinesthetic, auditory, and visual). Music also stimulates unique changes and improvements in the brain; and, capacities unrelated to music, such as learning new sensory and motor skills. It also transfers to other domains including speech, language, emotions and general auditory processes.

According to British psychologist Cariona Morrison, music is a powerful cue for storing and retrieving data. You can use music to process new information more deeply. Our brain has the ability to associate an event to a certain influence and many times music is that stimulus. Those influences are converted to memories and stored in dormancy until retrieved by a repeat of the stimuli that produced that particular association. The multi-sensory nature of music taps upon many regions of the brain simultaneously and engages and delights multiple sensory systems, i.e. tactile, kinaesthetic, auditory, and visual. Music also stimulates unique changes and improvements in the brain; and, capacities unrelated to music, such as learning new sensory and motor skills. It also transfers to other domains including speech, language, emotions and general auditory processes.

In addition, music uses both the right and left hemispheres of the brain and coordination between these two hemispheres is highly stimulated by using rhythm and music —like drumming for example! Music influences every cell of our body and evokes emotions and lifts our spirits! Recent studies show that this phenomenon can be directly related to a person's IQ level. Cognitive Neuroscience of Music demonstrates that when hearing and reacting to music, the sensory cortex, auditory cortex, hippocampus, visual cortex, cerebellum, amygdala, prefrontal cortex, and motor cortex are all firing together and awakens our cerebral processing capability.

Drums Alive and Diverse Abilities

Working with individuals who require adaptations is a challenging but very rewarding experience. Drumming is an activity that most will be able to enjoy regardless of ability. The following are adaptations that will help design a class that provides the opportunity for everyone to participate in a safe and enriched environment. Participants with learning disabilities and/or cognitive delays may need extra instructional tools to assist in learning. The use of visual schedules, Drums Alive Rhythm Cards, Number Cards, Feeling and Emotion Cards, and any other form of modified instructions to ensure their understanding of the lesson may be helpful and necessary. Some may have physical challenges with the equipment; so, consider making adjustments to the pieces you are using to accommodate for ease of use and adherence to safety rules. Be aware of any allergies to ingredients such as latex, different fabrics, or dyes before handing out equipment. Remember to teach each lesson in layers and monitor the growth in learning to determine how quickly to add additional layers to challenge cognitive skills. In general, many simple and easy modifications can be made to help students enjoy the fun in each lesson, embrace the social interaction and the community of the group; and, still benefit from the physical and cognitive exercises. Positive encouragement and eye contact when speaking is always the best method to keep all students engaged; and, matching "exceptional" students with typical peer models has proven successful in many cases. Inclusion strategies ideas and techniques include the following:

- Use poly spots or masking tape for anchor spots to show where to stand
- Mark directions for movement of routines, choreography, entrance and exit points
- Place masking tape or markers on the ball showing where they are to hit
- Place masking tape or markers on the drumsticks to show where to grasp
- Use colored markers or colored wrist bands on hands and feet to mark left and right Red for right; Lime, Lemon, Lavender for left. (Note: Hair bows work well for this)
- Use slower, simple, and repetitive movements when trenching new routines
- Select proper tempo of music for choreography; slow at first then faster when able

- When performing specific locomotor skills, allow those with diverse abilities to move according to ability (e.g., jump vs hop; gallop vs skip; walk vs run, etc.)
- Encourage teachers and parents to allow time to practice skills at home or in class
- Consider placing individuals with disabilities closer to the end of parallel lines when doing partner activities for ease of monitoring and assisting if needed
- Use adult or peers as mentors to provide extra verbal or physical cues

Neurophysiologist Dr. Carla Hannaford states that, "Movement is an indispensable part of learning and thinking. Children need to move and physically reinforce the content they learn in school in order to make it more comprehensible." (Hannaford, 1997). Teachers need to understand each individual's routine and help him or her follow their patterns to prevent anxiety, anger, injury and a possible meltdown or tantrum. If children have obsessions, use it in a positive way to help them learn new material. Drumming, rhythm, music and movement are multi-sensory experiences that provide powerful tools to address an array of physical, mental, and emotional needs. The combination of motor movement, blended with auditory and visual feedback, facilitates greater engagement, encourages learning, facilitates brain function, and strengthens multiple skills for student with special needs. When people are engaged with the world around them, they are more prepared to embrace, interact, learn and contribute to it in a positive way.

Drums Alive Ability Beats is a vehicle that stimulates this engagement and can address a variety of needs and propose constructive solutions. According to music therapist Bill Matney, drumming can be a powerful tool that has adaptations for individuals in need of such instruction. Drumming is multi-sensory and combines motor movement with auditory and visual feedback. It facilitates engagement, encourages learning, activates the brain and provides multiple skill-building opportunities—all while having fun! Besides its many benefits for children with special needs, movement through dance therapy has been found to have very positive results for children on the autism spectrum. Dance therapy also provides rich sensory/motor experiences for children with autism and may minimize the frequency and intensity of negative behaviors. Dance therapy's calming and relaxing effects also help children on the spectrum control and regulate their emotions while engaging in a typical, age-appropriate recreational activity with other children.

Application of A Successful Drums Alive Program

The Drums Alive program is not about just hitting the stability ball for a fun workout. It is also about teaching the "whole individual" concept and adding the elements of rhythm, movement, cognitive education, socialization and teamwork, and right and left-brain activation. Ensure you focus on "whole brain–whole body" training and use all of the

elements found in our programs. Integration of the cognitive and physical processes will create a balance for the body, mind and spirit. Teach to the individual, create an enriched environment, and, allow time for creative expression. But most of all, have fun!

A safe and successful Drums Alive program depends on the instructor's application of sound instructional principles and practices as well as understanding the desired learning objectives used to develop the research protocols and subsequent positive results. Additionally, following the American Council of Exercise guidelines will help provide the instructor with a sound foundation of these principles and practices.

The Drums Alive programming suggests paying special attention to:

- Safety First! Promote safety on all levels and periodically review general safety rules for teaching a movement program
- Know your audience, execute proper form, and utilize safe, yet effective, movement and rhythmical skills for all levels of ability
- Be prepared for medical emergencies (emergency contact numbers, evacuation procedures, overstimulation protocols, CPR, Defib Kit, etc.)
- Use appropriate equipment or modifications and reinforce its proper care and usage (Refer to the Drums Alive website for information: www.drumsalive.com
    - Recommend approved "Anti-Burst Stability Ball." Size of the ball and holder is dependent the class that is taught as well as the height of each participant
    - Use good quality drumsticks and check condition each time before use
    - Use modifications to drumsticks if needed (i.e., pool noodles, foam insulator tubes, foam grips on drumsticks or any creative use of a safe striking device)
    - Use a solid ball holder to maintain a good foundation and avoid tipping during workout (bucket, step riser, basket, etc.)
- Provide an enriched environment that is conducive for learning, self-expression; and, if needed, a breakout room to desensitize and soothe
- Use appropriate music and be mindful of the volume and tempo
    - Some students may be sensitive to loud music; so, recommend a volume level between 85 dBA–90 dBA
    - You may need to use music with slower tempo or slow the tempo of the music (using pitch control)
    - Adagio (slow and stately—literally, "at ease"—tempo is 66 – 76 bpm)
    - Allegro tempo (fast, quickly, and bright—tempo is 120 – 168 bpm)
    - Modify the drumming or movement patterns (e.g., instead of drumming on every beat, drum once on every two beats)
    - Songs or music over 100 bpm need to be monitored carefully and adapted or modified based upon capability
- Be prepared and teach using a suggested "Class Design" and execute good class delivery and sound teaching skills, including audio, visual and technique cues
- USE KIND WORDS —this applies to the students, assistants, and teachers
- Remind everyone to keep hands and feet to themselves ("GENTLE HANDS AND FEET")
- Remind everyone to LISTEN AND FOLLOW DIRECTIONS but, to HAVE FUN!
- Provide time for WATER BREAKS or REST AND RELAXATION BREAKS

Elements in A Drums Alive Class Design

The Drums Alive class design can vary according to the demographics of your class vis a vis physical and mental levels. Below is an example of a design that may be implemented in a Drums Alive class.

- Greeting and Welcome
- Warm-Up Activities (Rumble Games)
- Fine and Gross Motor Skills
- Fine Motor Drumstick Skills
- Balance and Proprioception
- Listen and Learn Cognitive Skills
- Follow the Leader—"Simon Says," Call and Response
- Brain Beats – Cognitive applications
    - Working Memory and Executive Thinking
    - Speech Patterning with Rhythmical Timing
    - Functional Living Skills
    - Functional Academics that include Self-Help and Daily Living Skills
    - Rhythm and Musical Interpretation
    - Beat Keeping with Movement Applications
    - Activate the Anticipatory Pleasure Response
    - Health and Fitness Exercises
    - Cardiovascular Drumming and Movement Skills
    - Team-building Skills and Games
    - Creativity and Expression
    - Creating Your Own Moves, Groves and Fun!
    - Hand-Clapping Games

- Working Memory, Social Skills, and Rhythm
- Rest and Water Breaks
- Sensory and Quiet Breaks
- Cool Down nd Relaxation
- Stretch and Release
- Moving Meditation and Mindfulness
- Gathering and Review
- Goodbye

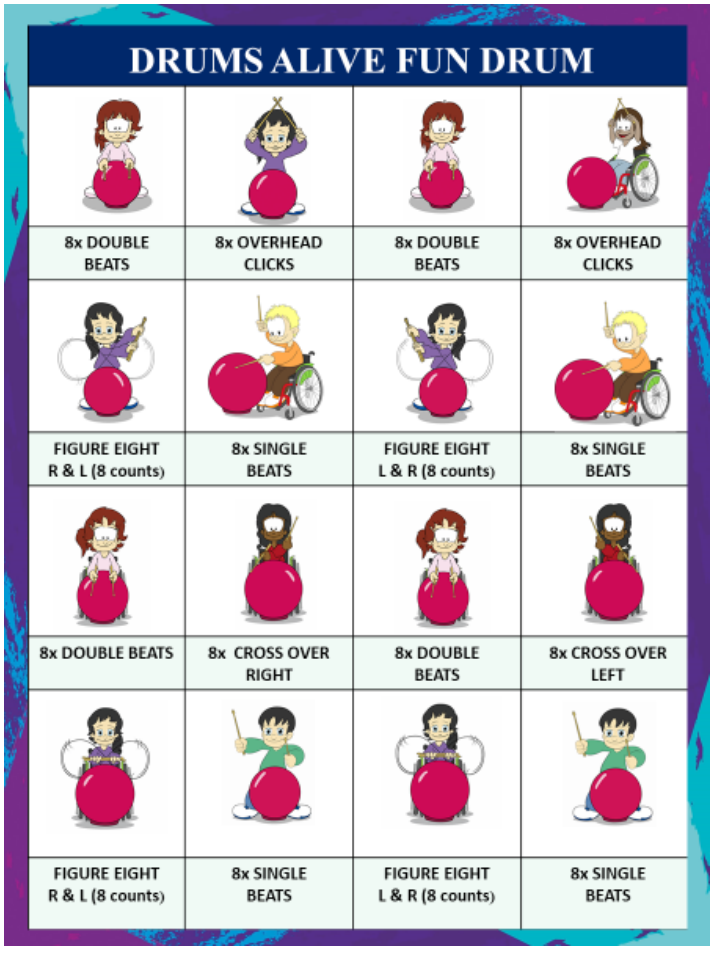
Drums Alive Ability Beats™ is an "ALL-INCLUSIVE, NO PARTICIPANT IS LEFT BEHIND" program that provides a comprehensive approach for those with diverse abilities. It opens the door for individual participants to develop their skills and coordination alone, with a partner or within a group to improve their physical, cognitive, and social health in an exciting and enriched environment regardless of ability, limitation or life challenge. In this respect, Drums Alive Ability Beats™ provides the participants a platform for socialization, as well as developing lifelong essential motor skills. Another tremendous benefit of this program is that it provides an outlet for aggression; because, all too often our participants do not normally have the proper venue to release negative feelings of fear or anger.

Drums Alive Golden Beats™ is specially designed for the senior population. This program employs a drumming and movement workout protocol that is specifically designed to enhance emotional and cognitive health; as well as, social competence and can contribute to satisfaction of one's individual needs as it provides a unique, fun, and exciting alternative to traditional aerobics for seniors.

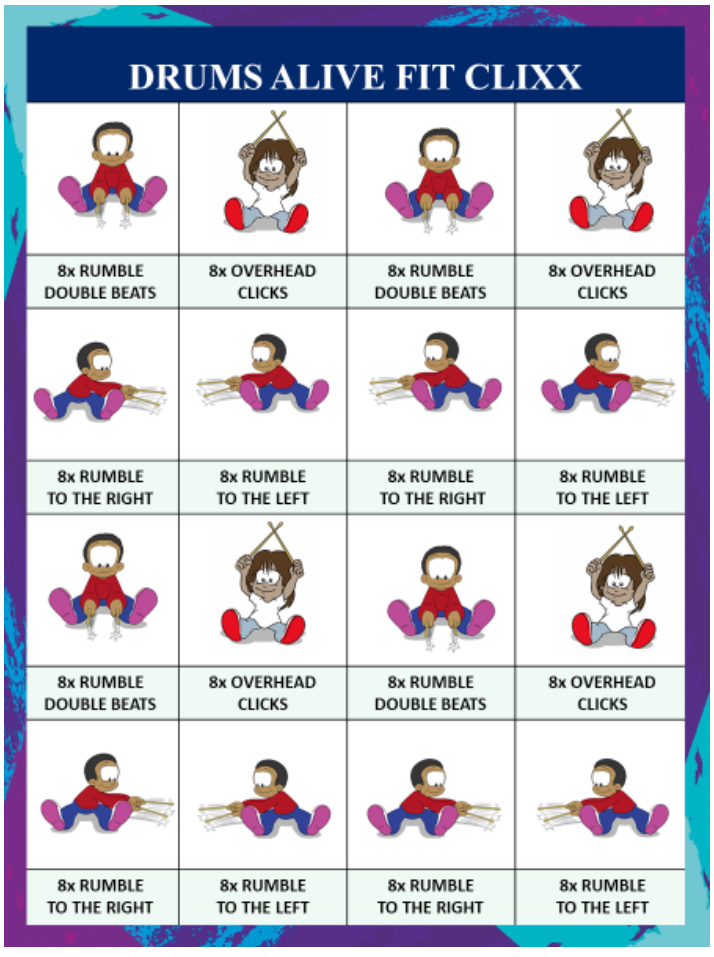
Drums Alive Bambini Beats™ is a didactically and methodologically based program that is full of energy and pure fun designed specifically for toddlers between 3 and 5 years of age. The music and the movements are selected and adapted for small children and their physical development. The Bambini Beats concept is geared towards a holistic promotion and exercise their innate abilities and skills while appealing to all their senses and emotions. The focus is on the promotion of concentration, memory, sensory perception, motor skills, social behavior, body awareness, relaxation, language development and the possibility of playful stress and aggression reduction.

Drums Alive Drumbata® is a power-packed workout that combines cutting-edge "Athletic Functional Interval" training with the energy and passion of Drums Alive. Drumbata got its roots from one of the most popular forms of

Drums Alive Sample Choreography



Drums Alive Ability Beats (Fit Clixx) Sample Choreography



high-intensity interval training (HIIT) called "Tabata." It's a timed interval method that alternates between 20-second intervals performed at maximum effort and 10 second stages of rest, repeated eight times for the ultimate exhaustive four-minute workout.

Drums Alive Fit Clixx is a fun and exhilarating full-body workout that uniquely combines the powerful rhythms of drumming fitness with elements of simple to follow hi/low dance aerobic choreography and integrated muscle training to build strong lean muscles, improve core stability and strength

Drums Alive Wellness Beats: The "Mind-Body" Connection is an interactive mind-body connection with the use of powerful rhythms, percussive beats and the sheer joy of moving while drumming to exciting and inspiring music. The power of the drum, and the releasing of encumbered emotion through movement, harnesses the elements of wellbeing and captures an activity that anyone can enjoy regardless of age or ability. This alternative to traditional exercise can improve brain wave activity and increase synchronization of the brain hemispheres.

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CHAMPPS: Filling the Preschool Curriculum Gap

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Abstract

Many preschool teachers may be aware of the need to support motor skills and physical activity for their students but they are not sure how to actually achieve this goal. Often preschoolers' only motor time includes recess or a short movement with music activity during circle time, with limited or no structured motor curriculum. This article highlights *CHildren in Action: Motor Program for PreschoolerS (CHAMPPS)*, a structured preschool motor program that utilizes UDL embedded lessons to support school readiness (e.g., social, language, motor, pre-academics) and elevated physical activity levels for children. First, we discuss the importance of structured motor programs for preschoolers with and without disabilities. Second, we describe how CHAMPPS is responsive to national guidelines regarding motor play. Third, the components of CHAMPPS are described.

Keywords: *Disabilty, inclusion, motor development, physical activity, preschool*

The preschool years are the ideal time to increase motor skills through engagement in physical activities. During this time, preschoolers (3-5 years of age) use their bodies in a variety of ways as they learn how to jump, hop, throw and catch, which require motor skills such as locomotion, motor control, coordination, balance, and object manipulation. In addition, while motor development is important in and of itself, it also supports other areas of development including school readiness (Clark, 1994; Haiback-Beach, Reid,& Collier, 2018; Haywood & Getchell, 2014). School readiness represents a combination of *interrelated* skills such as physical well-being and motor development, socioemotional development, language development, cognitive and general knowledge skills (e.g., pre-math and pre-reading), and approaches to learning (e.g., curiosity, sustained attention) (Ackerman & Barnett, 2005; Howard, 2011; National Education Goals Panel, 1995). Active motor play leads to exploration and stimulation within one's environment, which supports growth in motor skills as well as other school readiness skills (Burdette & Whitaker, 2005; Iverson, 2010; Oja & Jürimäe, 2002; Piek, Dawson, Smith & Gasson, 2008; Wassenberg, Feron, Kessels, Hendriksen, Kalff, & Kroes, 2005).

Supporting school readiness skills, including motor skill development, is an important part of the preschool curriculum, particularly for young children with disabilities who often experience deficits in this area (e.g., Emck, Bosscher, Beek, & Doreleijers, 2009; Goodway, Crowe, & Ward, 2003; Provost, Heimerl, & Lopez, 2007; Provost, Lopez, & Heimerl, 2007; Wuang, Wang, Huang, & Su, 2008). Provost, Heimerl, and Lopez (2007) and Provost, Lopez, and Heimerl (2007) found that preschoolers with disabilities showed significant delays in motor skills that required balance and motor planning. Moreover, growing up in poverty can have long-term negative impacts on many areas of development such as cognitive, socio-emotional, language, health, and motor development (Ginsburg, 2007; Goodway & Branta, 2003; Venetsanou & Kambas, 2010). Therefore, motor skill development is *especially* important within *inclusive* preschool classrooms and among preschoolers of *low socioeconomic status*.

Because motor skills are viewed as "building blocks" for many areas of development, delays in early motor skill development can lead to a wide array of difficulties in other skill areas that are dependent upon these skills such as peer interactions, handwriting, physical well-being (Brown, Pfeiffer, McIver, Dowda, Addy, & Pate, 2009b; Cahill, 2009; Seymour, Reid, & Bloom, 2009), or cognitive development and early academic achievement (Becker, McClelland, Loprinzi, & Trost, 2014; Fedewa & Ahn, 2011). Therefore, it is important that children are provided with *direct and intentional instruction* for motor skill development during the preschool years (Brian, Goodway, Logan & Sutherland, 2017; Brian & Taunton, 2018; Green, Charman, Pickles, Chandler, Loucas, Simonoff, & Baird, 2009; Marton, 2009; Pan, Tsai, & Chu, 2009; Provost et al., 2007) as well as *multiple opportunities to be engaged in physical activities* to develop these skills (Clark & Metcalfe, 2003; Goodway & Branta, 2003).

Despite the importance of supporting motor development in inclusive preschool classrooms, support is often lacking in early childhood education (Horn & Kang, 2012). In a systematic review of preschool motor interventions, Riethmuller, Jones, and Okely (2009) highlighted the limited number of motor interventions that had both a sound theoretical base to their development and high research standards to evaluate their efficacy. Not only do a limited number of quality preschool motor programs exist, but the current preschool landscape is one in which most children spend an inadequate amount of time in physical activities and do not receive intentional support for motor skill development (Cohen, Morgan, Plotnikoff, Callister, & Lubans, 2014; Guthold, Cowan, Autenrieth, Kann, & Riley, 2010; Tucker, 2008). In

typical early childhood settings, there are three types of motor activities: unstructured motor play, structured motor interventions, and unstructured motor and music movement activities. *Unstructured motor play* includes activities such as daily recess monitored by teachers and paraprofessionals while *structured motor interventions* include physical therapy (PT), occupational therapy (OT), and adapted physical education (APE) for children with disabilities once or twice a week led by a physical therapist, occupational therapist, or adapted PE teacher. The third type, *unstructured motor and music movement activities*, includes brief motor experiences for the whole class led by teachers who often lack extensive background knowledge in motor skill development. What is clear is that children with disabilities participate on a limited basis in motor movement activities designed to support motor skill development and physical activity (Murphy & Carbone, 2008). The interaction of these realities (an inadequate amount of time and a lack of intentional support) illustrated the need for structured preschool motor programs such as CHildren in Action: Motor Program for PreschoolerS (CHAMPPS). CHAMPPS was developed to fill a gap in preschool programs by providing a step-by-step, comprehensive physical activity curriculum designed to be implemented by preschool teachers (as opposed to physical educators or motor specialists). Unique aspects of CHAMPPS include a focus on increasing physical activities and motor skill development through repeated lessons embedded with Universal Design for Learning (UDL) strategies to ensure child engagement and supports to address social, communication and pre-academic skills for preschoolers with and without disabilities. The purpose of this paper is to describe CHAMPPS, which was developed by key stakeholders (teachers, assistant teachers, parents) with specialists (adapted physical education, occupational therapy, speech therapy, early childhood special education). Stakeholders field-tested individual lessons and physical activities from the 7 CHAMPPS units, providing recommendations for revisions. The results yielded a multi-component preschool motor program which is described later in the paper.

Development of CHAMPPS

CHAMPPS was developed using an iterative process, divided into three phases with review, feedback, and revisions occurring with each phase. The phases were: (1) the *manualization of CHAMPPS* as a preschool motor program with UDL lessons and corresponding physical activities; (2) an *examination of the usability, feasibility and fidelity of implementation of CHAMPPS*, and (3) *a pilot study of CHAMPPS* to examine its impact on motor, social, and cognitive development and the level of physical activity exhibited by preschoolers with disabilities. During development as each new unit was created, the activities (and instructions for all motor activities) were vetted by a team with expertise in motor development, physical activity for preschoolers, adapted physical education, and early childhood special education. After field testing the activities several times, data were collected related to operational and technical feasibility, usability, recommendations for revisions, physical activity level of a sample of children and observations of observed changes in children (i.e., motor, language, social, approaches to learning). Throughout implementation, teachers were provided initial training and ongoing support and feedback, as needed. A Fidelity of Implementation Checklist was utilized throughout the program to ensure completion of each aspect of the CHAMPPS lessons with preliminary data indicating over 90% fidelity of implementation.

Consistency with Professional Guidelines for Preschool Motor Programs

One important and foundational aspect of CHAMPPS is its alignment with national and professional guidelines. To that end, the CHAMPPS team reviewed guidelines that could inform the development of a motor program for preschoolers with and without disabilities. These guidelines represented leading organizations such as the National Association for Sport and Physical Education (NASPE, 2002; 2010), the National Association for the Education of Young Children (NAEYC, 2003), the Division on Early Childhood (DEC, 2009) and the American Academy of Pediatrics (2012). Examples of these guidelines and recommendations from the leading professional organizations that were used to inform CHAMPPS are highlighted in Table 1.

Table 1
Guidelines and Recommendations

Organization	Guidelines/Recommendations
National Association for Sport and Physical Education (NASPE)	Every day, preschoolers need: 60 minutes of structured motor activity 60 minutes or more of unstructured physical activity Outdoor time for motor play, supervised by an adult in a safe child-friendly setting Access to developmentally appropriate equipment to support physical activity and motor skill development
National Association for the Education of Young Children (NAEYC)	Principles of child development and learning that inform practice: All developmental domains (physical, social and emotional, and cognitive) are important and interrelated Children's learning and development follow well-documented sequences, with later abilities, skills, and knowledge building on those already acquired Development and learning proceed at varying rates from child to child and at uneven rates across different areas of a child's individual functioning
DEC and NAEYC Joint Position Statement on Early Childhood Inclusion	Recommended practices to support instruction and full access: Use strategies such as UDL to ensure full access and meaningful inclusive programming Identify skills to target for instruction to help child become adaptive, competent, socially connected and engaged, and that promote learning in natural and inclusive environments Provide the level of support, accommodations, and adaptations needed for each child to access learning within and across activities Use systematic instructional strategies with fidelity to teach skills and to promote child engagement and learning Implement the appropriate frequency, intensity and duration of instruction needed to address the child's phase and pace of learning

Table 1 (continued)

American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care and Early Education	All children, birth to 6 years, should participate: In two or more structured, teacher-led, activities or games to promote movement over the course of each day (indoor or outdoor) In continuous opportunities to develop and practice age-appropriate gross motor and movement skills Teachers should: Lead structured activities to promote children's activities two or more times per day Provide prompts for children to be active (e.g., "Throw the ball to Alice.") Have orientation and annual training opportunities to learn about age-appropriate gross-motor activities and games that promote children's physical activity

Guidelines regarding evidence-based practices. A critical feature of high-quality preschool motor programs is the need for them to be informed by evidence-based practices (Logan, Robinson, Wilson, & Lucas, 2011). CHAMPPS was developed with the following three features in mind: (1) a comprehensive scope and sequence linked to motor skill development theory (Clark, 2005, 2002), (2) an appropriate duration and intensity, consistent with professional guidelines, and (3) evidence of rigorous research that employs a randomized experimental design, strong methodological quality, valid measures with the child as the unit of analysis, and demonstrated effectiveness. The first two features were addressed during the development of CHAMPPS while the last feature was addressed in a subsequent pilot study.

Guidelines for physical activity for preschoolers. Because of the NASPE guidelines, one of the goals of CHAMPPS is to increase physical activity in preschoolers. NASPE recommends that preschool children engage in at least 60 minutes of structured physical activity per day with children remaining physically activity for at least 50% of the time (NASPE, 2002). There are three ways in which CHAMPPS was designed to meet the benchmark for physical activity level: internal structure, music videos, and pre-planning for smooth transitions.

Internal structure. CHAMPPS has a built-in internal structure that minimizes wait time during activities to ensure high levels of physical activity throughout the lessons. For example, during activities that require waiting for a turn (i.e., obstacle course) teachers are encouraged to have 2-3 children go through the course at one time while 2-3 children engage in brief activities until it is their turn at the obstacle course. Examples of wait-time activities include: tossing a bean bag to self or a peer; doing long jumps or hopping from one floor marker to another; and cheering on peers by clapping, using egg shakers or musical instruments. Another example of the internal structure that supports increased physical activity level is the attention given to structuring CHAMPPS with a variation in group sizes. Simply put, children spend less time waiting (being sedentary) when they are working in small groups, pairs, or doing independent practice. Because of this, there is a gradual shift across the seven units from whole group activities to small group, partner, or independent practice. Having said that, even in whole group activities, teachers find ways to engage all students. For example, in the Core Activity, Rabbits and Foxes, teachers introduce various animals and movements. The class jumps and sings the song "Jumping Bunnies" until the teacher rings a bell and the children go back to their floor markers. Teachers can call out different animals, show their movements and then ask the class to demonstrate the movements of each new animal while singing. Sometimes, children are encouraged to balance on one foot after each round, or jump in place, before choosing another animal movement to keep their physical activity level high with built-in mini-breaks.

Music videos. Another strategy used to support physical activity occurs as a result of the use of music videos. CHAMPPS units include one or two 2- to 4-minute videos with the expectation that children's duration of engagement or stamina increases over time. In addition, using UDL suggestions (explained in the next section), children are encouraged to do modified versions of movements (i.e., speed walking or walking in place instead of jogging in place) to sustain movement during the longer 4-minute music videos. Teachers are reminded to keep sustained physical activities under 5 minutes, as this represents an appropriate duration for preschoolers (Brown, Googe, McIver, & Rathel, 2009).

Pre-planning for smooth transitions. Several strategies are employed to ensure smooth transitions that maintain child engagement and high physical activity levels during CHAMPPS. This is important because within each CHAMPPS lesson there are five transition moments across the six activities: Warm-Up, Core Activity 1, Core Activity 2, Core Activity 3, Music Video, Cool Down. Because some of these activities are implemented with the whole class (Warm Up, Music Video, Cool Down), while others require children to work in small groups, pairs or alone (Core Activities 1, 2, 3), advanced planning helps minimize wait time and increases time in actual activities.

Prior to starting CHAMPPS, teachers and their assistants decide which children will be in each small group, which children will be partners, and which adult will supervise which group of children. In addition, the stations for each activity are arranged to ensure that there is enough variation and appropriate adapted equipment for all students. Finally, to ensure smooth transitions and maximize a high physical activity level during CHAMPPS, quick references to lesson activities are provided in two ways: a lesson summary is posted on the wall and a hand-held Walk Around Card is used by teachers so they can move smoothly from one activity to the next. The Walk Around Cards were developed by creating an abbreviated version of the full lessons.

Components of CHAMPPS

CHAMPPS is a structured preschool motor program that utilizes UDL embedded lessons to support school readiness (e.g., social, language, motor, pre-academics) and an elevated physical activity level by children. The *class-wide* program is designed for use 2-3 days a week in *inclusive preschool classes*, addressing the seven fundamental motor skills through fun motor activities, music videos, a home component, and teacher training. A brief overview of all the components of CHAMPPS can found in Table 2; the primary components are described next.

Table 2
Core Components of CHAMPPS

Components	CHAMPPS
Lessons	Six repeated lessons for each of the seven fundamental motor skills units (n = 42) with UDL strategies to support children with diverse abilities
Music Videos	Choice of 1-2 vigorous/moderately vigorous music videos, which correspond with the CHAMPPS motor units thereby providing an opportunity to utilize motor skills during fun and engaging activities
Home Component	Weekly communication cards that describe that week's CHAMPPS activities for families to implement at home
Training Materials	CHAMPPS manual with background information on motor skill development and the importance of physical activity, detailed procedural instructions, 42 UDL lessons and corresponding physical activities, Walk-Around Cards for each unit (provides lesson summary), CHAMPPS family communication, the Classroom Inventory for Motor Play, and online videos of each unit and strategies to support school readiness skills

CHAMPPS units. CHAMPPS includes seven units that represent the following fundamental motor skills: 1) introductory skills (i.e., motor imitation, visual tracking, body awareness), 2) walking and running; 3) balance, jumping, and hopping; 4) catching; 5) throwing; 6) striking; and 7) kicking. These seven skills are the basic motor skills often taught in elementary physical education and are foundational for many youth sports (e.g., soccer, t-ball). Each unit includes repeated lessons designed to increase physical activity levels while supporting development in motor, social, language and pre-academics. Next, we discuss three essential elements of the CHAMPPS curriculum in more detail: repeated lessons, UDL and school readiness supports.

Repeated lessons. Each unit has six repeated lessons and two optional review days, that target a specific fundamental motor skill. Each lesson includes a warm-up activity, three core motor activities, music videos and a cool down activity. Teachers are provided with a Lesson Walk Around Card that contains an abbreviated version of the lesson and can be used as a "cheat sheet" during motor lessons.

The lesson begins with a warm-up, aimed at getting children ready for CHAMPPS by increasing their heart rate. To support language and signal the beginning of CHAMPPS, children sing along with their teacher and move their bodies (i.e., jog, gallop, skip, sway, balance) with each new song verse. The warm-up activity is followed by three core motor activities. This internal lesson structure is repeated throughout the curriculum. Core Activity 1 is a whole group activity whereas Core Activities 2 and 3 are typically done in small groups. CHAMPPS intentionally starts as whole group and transitions into activities for small groups (half the class), partners (paired with a peer) and independent practice as the class moves through the seven CHAMPPS units.

UDL strategies. CHAMPPS is based on the philosophy that every child has the right to be fully engaged in their world, including the right to daily opportunities for physical activity. This philosophy is consistent with the tenets of UNICEF's Conventions on the Rights of Persons with Disabilities (CRPD) (UNICEF, 2006), the National Center for Physical Development and Outdoor Play (2010) and the Right to Play (2017), which emphasize the need to support all children in the context of play.

Each CHAMPPS lesson is embedded with UDL strategies to support the needs of all children based on each child's level of ability during each activity (CAST, 2011; Horn, Palmer, Butera, & Lieber, 2016). For example, every activity addresses *multiple means of representation* (i.e., offers differences in task complexity and/or expectations in response to different ability levels), *multiple means of engagement* (i.e., suggests a variety of ways to motivate children in response to different learning styles, interests, and preferences), and *multiple means of expression* (i.e., includes a variety of response modes that children can use to demonstrate skills in response to different ability levels).

A closer look at UDL strategies in one core activity, *Obstacle Course*, reveals that the obstacle course consists of children walking, running, side-stepping, lunging or tip-toeing through a course lined with hurdles. Teachers incorporate multiple means of representation by providing verbal cues, modeling the movement and using visual support cards to demonstrate the movements. During this unit one teacher noted, "H. likes to read on the visual cards what is next." Teachers also employ multiple means of engagement by alternating between novel and familiar movements. Teachers incorporate multiple means of expression by allowing children to walk beside the obstacle course, walk on the obstacle course, or complete only part of the course. Several teachers noticed that children's independence increased during the obstacle course, "T. went through the obstacle course instead of waiting for prompts." "A. left the 'waiting' activity and got in line for the obstacle course." These examples show the importance of using UDL strategies to ensure that children with a range of abilities can participate in each activity.

Supporting school readiness skills. With evidence supporting the interdependence of motor skills in other areas of development (i.e., language, social, cognitive) (Favazza & Siperstein, 2016), CHAMPPS lessons are focused on fundamental motor skills that support language, social, and pre-academic skills. Table 3 illustrates how school readiness skills are addressed in the several core activities. For example, in *Hungry Horsey* children use pool noodles as horses and apples, balancing "apples" on the pool noodles as they walk along a balance beam and over hurdles through the obstacle course. Children go through the obstacle course while peers cheer them on with egg shakers, emphasizing social and language skills. To enforce math skills such as measurement, counting and pattern recognition, children choose the length of the horse (noodle) they want to use, and the number and pattern of colors of the "apples" to balance on top of the noodle, at the teacher's discretion as longer (noodles) horses and more apples (small noodle pieces) are more challenging. Some teachers also teach positional concepts, asking children to determine which is more difficult: holding the noddle at the top, middle or bottom. Prior to playing, the teacher typically leads a discussion about horses' names

Table 3
Sample School Readiness Skills

	Warm-Up	Core 1 Rabbits & Foxes	Core 2 Hungry Horsey	Core 3 River Jump	Cool Down
Mathematics	√	√	√	√	√
Number Recognition (count, one-one correspondence)	Count moves instead of singing		Count number of apples balanced	Count number of jumps	Stretch for number of seconds
Positional Words		Around, in, on top of	Over, on top of, beside	In-between, over, around	Bend side to side
Ordinal Language (first, second, etc.)	Use numbered bibs 1–8 to stress first through eight. During opening, practice saying ordinal numbers with matching numerals.		Order in line (first, second, etc.) →		Order of moves
Categorize & Sort Objects		Rabbits can be pets. What other animals can be?		What other animals live in the water?	
Patterns (recognize, describe, reproduce)	Create movement pattern (walk back 5 steps, forward 5 steps)		Create color pattern with apples		
	Warm-Up	**Core 1 Rabbits & Foxes**	**Core 2 Hungry Horsey**	**Core 3 River Jump**	**Cool Down**
Approaches to Learning	√	√	√	√	√
Transitions in/ out of Activities	Return to floor marker →		Switch between course & cheering →		
Listens/Follows Directions	Listen and imitate movements →				
Focused Attention	Listen for next movement	Listen for bell	Watch/Cheer peers		
Sustained Attention	Stay with whole group	Stay within activity space	Stay at course →		
Active Engagement in Small/Large Group	Move around room with whole class →		Stay with same small group →		
Active Engagement in Small/Large Task			Move through independently →		

(horse, pony, colt), habitats (barns, fields), movements (gallop, walk, trot), and food (apples, carrots, grain, hay) to support language skills. Motor skills (i.e., dynamic balance, visual tracking) are encouraged as children navigate the obstacle course, retrieving fallen apples along the way. Lastly, approaches to learning are supported by encouraging children to stay on task ("Stay on the path to the barn") while moving through the obstacle course independently.

Visual supports. Because learning needs and styles may vary, visual supports or picture cards can help enforce a concept. These visual supports show locomotion (i.e., type of large motor movement such as jog or march), body awareness (i.e., what to do with your arms, feet), and body movements (i.e., what small motor movement to use such as grasp scarf or play the drums). Teachers can choose to use these supports during CHAMPPS to help visually communicate an action, body part, or movement to a specific child, small group, or the entire group. These supports are designed for all children but can be especially helpful for children who speak different languages and who have disabilities.

Home component. While CHAMPPS is designed to be implemented within a school setting, engaging parents and guardians is key to reinforcing the skills learned during CHAMPPS. A 1-page home component is sent home three times per unit and consists of one warm-up activity, one core motor activity, and one cool down activity. The equipment needed is listed for each activity; this equipment includes everyday household items such as napkins or kitchen towels for scarves, rolled-up socks for beanbags, and a laundry basket for a soccer goal. Each home component also provides suggestions of one interactive preschool-level motor book that can be found at most community libraries and one preschool-level You Tube music video, corresponding to the motor skill unit. Moreover, the home components are available in several languages (i.e., Spanish, French, Portuguese, Haitian Creole) to ensure the inclusion of families who speak different languages. In some schools, teachers choose to post the home component online or send it to families in their home language and English, to support English acquisition of children and their families.

Interactive motor books. Each CHAMPPS unit highlights three interactive preschool-level movement books for use at school and home. Books were carefully selected to ensure they are age-appropriate for preschoolers in terms of content, length, and vocabulary (Ostrosky, Favazza, Yang, McLaughlin, & Stalega, 2018). These motor books are intended to support and encourage children to use various body parts to move in new and different ways. The stories incorporate positional words (i.e., over, under, up) and action words (i.e., kick, catch, gallop). Not only do these stories reinforce school readiness skills, but also social-emotional skills as the stories emphasize cooperative play as opposed to competition.

What We Learned

While providing opportunities to support the development of fundamental motor skills was important in the program, for the first year of CHAMPPS we focused on the intensity of physical activity levels of children in the program to ensure that children were physically active for the majority of the time. Specifically, children with disabilities wore accelerometers attached to an elastic belt which was placed around their waists. We were interested in the duration and level of physical activity (i.e., sedentary, light, moderate, vigorous). Across eight classrooms (five inclusive, three segregated), children with disabilities were physically active on average 52% of each lesson. These data revealed that CHAMPPS exceeds the Active Start guidelines of children remaining active at least 50% of the time during structured physical activities (Goodway, Getchell, Raynes, & National Association for Sport and Physical Education, 2009). These data also indicate that CHAMPPS is successful in ensuring this level of physical activity for children with a wide range of abilities.

Project staff along with key stakeholders developed CHAMPPS, building on theories of motor development (Clark, 2002; 1994; Clark & Metcalfe, 2002) and guided by the national and professional recommendations regarding motor movement and physical activity for preschoolers. Prior to implementing CHAMPPS, no schools with whom we worked reported having a structured preschool program for all preschoolers. Feedback from teachers indicated that CHAMPPS had strong usability in their settings and possessed operational and technical feasibility. For example, teachers reported that the manual (units, lessons, UDL strategies, school readiness tables) were easily understood and could be implemented in their schools. In addition, teachers provided many valuable recommendations for improving the activities within each unit, all of which were added to the CHAMPPS manual. For example, teachers thought the number of repeated lessons per unit provided enough repetition, which helped children master the skills.

In addition, parents and teachers liked the home component and music videos, which correspond to each motor skill unit. Teachers also observed many positive changes in children such as an increase in motor skill development (i.e., balance, hop, throw, catch), reinforcement of pre-academic knowledge (i.e., number recognition, animal habitats, modes of transportation), improvement in language and social skills (i.e., vocabulary, positional concepts, sharing, taking turns), and improvement in approaches to learning (following directions, sustained attention, following the routine) during CHAMPPS. Teachers recognized that CHAMPPS provided more than motor skill development. For example, children congratulated and cheered on their friends (social skills). "K. said 'Nice job' when a friend knocked over his bowling pins"; "J. spontaneously cheered, 'Go Gabe, Go!'" Teachers observed, after completion of the first two CHAMPPS units, an increase in student engagement and an improved ability to sustain attention in independent activities (approach to learning): "The use of motor skills has helped certain students to be able to follow whole group directions for a longer duration, with less teacher prompting, and supported peer modeling." Even students who had difficulty with motor skills were able to perform skills independently as is evident from these teacher comments: "J. is doing the motor tasks (skills) a lot better. When he dropped eggs from under his arms it was amazing to see him pick them up and put them

back under his arms independently because he is not motivated to do motor activities"; "K. was able to sway independently a few times during the warm-up."

Conclusion

CHAMPPS not only focuses on increasing engagement and levels of physical activity, it also addresses readiness skills in the areas of social, communication, motor and pre-academic skills in preschoolers with and without disabilities through repeated lessons embedded with UDL strategies. Prior to developing CHAMPPS, a review of preschool motor program curricula revealed a lack of preschool structured physical activity programs that possessed the following high-quality indices: a sound theoretical base, adherence to professional guidelines, attention to the development of both readiness skills and sustained physical activity for all preschool-age children and the need for structured motor opportunities. Collectively, stakeholder feedback confirmed that CHAMPPS fills a gap in preschool programming, is user friendly, and complements existing preschool curriculum while addressing school readiness skills and physical activity levels using UDL strategies. CHAMPPS shows promise as a preschool program that supports physical activity and school readiness skills. It is in the final stages of development and will be available soon. It is our hope that preschool teachers will consider how they can embed readiness skills into active motor play so that all children realize the benefits that curricula like CHAMPPS afford them.

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The Power of Adapted Sports, Changing Attitudes in Higher Education: An Exploratory Study

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Abstract

A wheelchair basketball showcase was hosted at a state university in New England. Student surveys revealed that the event had a positive effect on students' views of both individuals with disabilities and adapted sports. Using Allport's (1954) contact theory as a lens, the author demonstrates how the event met the four positive features that Allport believed should be present in order to reduce negative feelings toward another group: (a) equal status between the groups, (b) common goals, (c) intergroup cooperation and (d) the support of authorities. This exploratory study argues that adapted sports can be an effective method to positively impact stereotypical views of people with disabilities.

Keywords: *Adaptive sports, contact theory, changing attitudes, higher education*

Introduction

According to the Centers for Disease Control and Prevention (2015), one out of every five adults has a disability. This number implies that college and university students are likely to have contact with individuals with disabilities both in professional and personal settings. Beh-Pajooh (1991) suggests that opportunities for college students to integrate education with interactions with individuals with disabilities can positively modify "attitudes and emotional reactions"; however, more opportunities for interaction between those with disabilities and those without are required. As higher education prepares students for entry into the job market as well as for civic engagement, educators can incorporate adapted sports teams as an opportunity to increase interactions with individuals with disabilities as a means to both positively impact perceptions of individuals with disabilities and to impact work and social environments.

An approach to improving student perceptions of individuals with disabilities is to provide recreational sport experiences at colleges and universities that allow individuals with and without disabilities to participate together. Allport (1954) believed that one could change the perception of others through personal contact and optimal conditions. The four features of the contact situation would consist of: equal status between the groups in the situation; common goals; intergroup cooperation; and institutional support. This became known as the "intergroup contact hypothesis."

Allport's initial research was around ethnic groups (1954) and later religion (1967). Amir (1994), another social scientist who looked at the effect of intergroup contact on ethnic relations, supported the use of this hypothesis, stating, "When contact occurs, a process of disconfirming initially held stereotypes regarding another group may start, stressing similarities between oneself and the other group, and consequently reducing prejudice, facilitating acceptance, and thus improving intergroup relations" (p. 233). MacMillan et al. (2014) examined children's attitudes toward disability and noted that those children who reported increased contact with those with disabilities revealed positive attitudes toward disability. Krahe and Altwasser (2006) demonstrated through their research that physical activity and athletic participation provide naturally occurring interactions and means for equal status contact. To begin exploration of the ability of an adapted sporting event to positively impact perceptions of people with disabilities, a university-based adapted sporting event was examined.

Method

At a state university in New England, students may take an elective course entitled "Inclusive Recreation." The course is described as creating "awareness of and sensitivity to the needs of persons with disabilities with regard to assessing, planning, implementing, and evaluating recreation and leisure services in the community." An identified learning outcome of the course is for students to understand how to include people of all ethnicities, genders, ages, socio-economic statuses, and abilities into community recreation.

On the first day of class students are asked to come up with one word they would use to describe people with disabilities. Over the past five years (2013-2017), the majority of the words have had a negative connotation. They include words such as "unable," "needs help," "dependent," and "sick."

The professor teaching the course organized a university-wide adapted sporting event—a wheelchair basketball game—with the intention of changing both student and university community perceptions of individuals with disabilities. During the game, students had an opportunity to utilize school-provided wheelchairs to participate alongside athletes with disabilities, who used wheelchairs. A student learning objective was to build awareness of the strengths and abilities of individuals that students may perceive as differently abled from themselves.

Students were invited to watch an exhibition game consisting of athletes with disabilities, using wheelchairs during the first half of the event. In the second half of the event, the university basketball team, and students from the Inclusive Recreation class where placed into wheelchairs and played against the wheelchair basketball team. During a class debriefing the following day, the university students

who played commented on how their experience changed their perception of the "disabled" and adapted sports.

The second year of the event, and all subsequent years through 2017, the same university held a wheelchair basketball event, it was modeled after Allport's (1954) contact theory with the hopes of reaching more students. A professional wheelchair basketball team that is a member of the National Wheelchair Basketball Association (NWBA) was featured. For the 2017 event, over 75 students throughout the university, not simply limited to those enrolled in the Inclusive Recreation class, arrived an hour before the official start of the game to participate in a variety of skill-building activities in wheelchairs. A local Paralympic sports club loaned the university 12 sport chairs for the event. The captain of the wheelchair basketball team, together with a faculty member, led the students in drills (i.e., shooting, dribbling, and ball retrieval).

According to Amir (1994), "There is evidence that when the interacting groups are of equal status or have the same power within the contact situation, the attitudes of the majority toward the minority will change in a positive direction" (p. 234). By encouraging students without disabilities to play basketball in wheelchairs, an attempt was made to create equal status amongst all the players during the game. The wheelchair basketball team was comprised of athletes who were proficient at their game. The spectators and student participants reported amazement at how easily the athletes with disabilities brought the ball down the court. During the game, students saw the players as skilled athletes and not as individuals with disabilities playing ball. Amir (1994) stated, "If the minority group or its representatives are on a higher level than the majority group and this does not threaten the latter group, the expected positive change may be even more marked" (p. 234).

Students from the entire university were strongly encouraged to attend the event and announcements with details of the event were sent to all students via email and promotional materials were posted around campus.

Students competing in relay drills as practice for the game

This reflects Allport's (1954) fourth feature: support from authorities and social institutions. Also reflecting authority support was that attending an adapted sporting event was required by several faculty members within the Recreation, Tourism, and Sport Management (RTSM) concentration. Students did not have to attend *this* adapted sporting event, but since the event was on campus it facilitated greater student attendance. Select RTSM faculty both promoted the campus adapted sporting event and lectured about the skill required to play, noting similarities between playing sports as a college team and as a competitive NWBA wheelchair basketball team.

After the event, student participants had an opportunity to complete a short six-question survey (Table 1). Thirty-eight surveys were completed. Because of the random selection of participants, it was impossible to calculate a return rate for the surveys or compile demographic information on the participants.

Table 1
Event Survey Results

Question Number	Survey Question
1	Have you ever had to use a wheelchair for an extended period of time?
2	What was your experience like while playing basketball in a wheelchair?
3	Have you ever participated/volunteered in any type of adaptive sport? If so where, and what sport?
4	Has this experience changed your perception of what adaptive sports are? If so, please explain.
5	What new knowledge have you gained from participating in this program tonight?
6	Would you be interested in seeing/participating in future adaptive sport programs at our university?

Results

All 38 completed surveys agreed that there should be more adapted sporting events at the university. One student added, "It is important to make sure there are activities everyone can participate in." Only 12 of the 38 students had seen an adapted sporting event prior to this experience. This number would not be an accurate representation of the rest of the university, as many of these students that attended were in the Recreation Therapy concentration and had been required to attend an adapted sporting event in the past.

A number of themes emerged from a question asking how this experience changed the student's perception of adapted sports, if at all. The following themes were: appreciation and better understanding of adapted sports (n = 6; 16%), the upper body strength required (n = 4; 11%), the intensity and competitiveness of the game (n =4; 11%), and the opinion that we are all capable individuals (n =2; 5%). One person wrote, "Viewing people play adapted sports has made me gain more respect for the athletes."

The themes from the second question had similar results. Students were asked, "What new knowledge have you gained

from participating in this program tonight"? The following themes resulted from this question: appreciation of how difficult these sports are (n =5; 13%), the players are more talented than me (n =3; 8%), upper body strength and endurance required (n = 3; 8%) and a respect for the players (n =2; 5%). One comment from this question was, "Inclusive recreation is awesome and really changes attitudes towards people with disabilities playing sports."

Students getting ready for the big game!

Discussion and Limitations

Without a longitudinal study, it will not be possible to know the enduring impact of this event on students' perceptions of individuals with disabilities. Questions that need exploring include but are not limited to: "Will the feelings students have generalize to other individuals they meet with physical disabilities?" and "Will they remember this event when they are working alongside a new colleague with a disability and remember to see him as a person with strengths first?" To determine short-term impacts, a study involving a pre-test and post-test is necessary. Here, our aim was to provide an exploratory study and our results from the survey cannot be generalized due to a small survey response numbers.

Additionally, data analysis should reflect sensitivity to the impact of previous interventions prior to attending the wheelchair basketball event. Krahe and Altwasser (2006) demonstrated through their research that two ninety minute interventions saw changes three months later. They hypothesized that adding a cognitive intervention piece to Allport's (1954) contact theory would be more successful in changing attitudes towards individuals with disabilities than just a cognitive piece alone (Krahe & Altwasser, 2006). Their research involved 70 ninth grade students, who were randomly assigned to one of three experimental conditions: (a) cognitive intervention; (b) combined cognitive and behavioral intervention; and (c) no intervention.

The cognitive intervention provided information about individuals with physical disabilities and challenged stereotypical conceptions about individuals with physical disabilities. The behavioral intervention, similar to our basketball event, consisted of engaging students in three Paralympic sporting events (goalball, wheelchair basketball, and sitting volleyball) with athletes with disabilities for 45 minutes.

The study demonstrated that those students who participated in both the behavioral and cognitive resulted in greater positive attitude change. The researchers did not look at just the behavioral piece of the intervention, but it is apparent from their study that participating in activities with athletes with physical disabilities was a strong influence in changing attitudes. In fact, those students who participated in the combined cognitive-behavioral intervention resulted in greater attitude change than the strictly cognitive intervention or the no-intervention condition, both immediately post-intervention and at a three-month follow-up. The results of Krahe and Altwasser (2006) suggest that attitudes may be affected by interventions prior to the wheelchair basketball event and may include class lectures and prior exposure to adapted sports.

Recommendations

In organizing an adapted sporting event showcase, it is beneficial to create teams comprised of both athletes with disabilities and students. The NWBA team was divided into two teams and student participants were rotated into both groups. This created two teams comprised of both students from the university and members of the wheelchair basketball team. This aligned with Allport's hypothesis, "In striving to win teams comprising of different groups must work together and rely on each other to achieve their shared goals" (Amir, 1994, p. 265). This also reflected Allport's feature of intergroup cooperation. Students had the opportunity to truly work with the players on a shared goal, to make a basket. Players took the time to talk with the students, give them pointers, set them up for shots and cheer them along the way.

Some students came to the realization that they had far more similarities with the players than differences. The university president and faculty members from across campus participated in the skill clinic prior to the game. According to Amir (1994), "Intergroup contact will also have more positive effects when it is backed by explicit support from authorities and social institutions" (p. 265). Both student affairs and the Disability Resource Center on campus were also helpful in the execution of this event. Student affairs recruited cheerleaders and the dance team to perform during halftime. Though both student groups (cheerleaders and dance team) were there to perform, they also were exposed to an adapted sport and raised the visibility and

Students from SCSU with the CT Spokebenders

status of the event. (One of the dance team members also played in the game.)

The results of our exploratory study suggest that participation of students without disabilities in adapted sports with athletes with disabilities may lead to positive attitudinal change. Outreach to adapted sports teams by colleges and universities to showcase sports and provide opportunities for student participation may be necessary to impact student attitudes. Our survey results suggest that intramural teams for athletes with and without disabilities may have positive outcomes. Colleges and universities may seek to follow the model recommended here in order to assess impacts on student attitudes further. Institutional investments in equipment to facilitate adapted sports teams on campus are also suggested.

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Using the Climbing Wall to Promote Full Access through Universal Design

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Abstract

Universal Design for Learning is a method of delivering instruction that can be utilized to provide an array of challenges when teaching Adventure Education and in particular, the climbing wall. Adventure Education combines experiential learning, physical activity, and group facilitation techniques, which physical education teachers can implement as a way to build an inclusive classroom. The advantage of an Adventure Education curriculum is that it is typically non-competitive and performed in a predictable environment. When utilized in combination with Universal Design for Learning (UDL), the climbing wall is an effective tool for providing students with disabilities access to the physical education curriculum.

Keywords: *Adventure education, climbing wall, disability, Universal Design for Learning*

The versatility of the climbing wall

Adventure education combines experiential learning, physical activity, and group facilitation techniques, which physical education teachers can implement as a way to build an inclusive classroom (Prouty, 2007). It is a curricular model shown to be successful within inclusive settings in addressing the needs of a diverse group of students (Sheard & Golby, 2001). Although the model focuses on skill building, it generally prioritizes the "process" of participation grounded in the concepts of challenge, cooperation, risk, trust, and problem solving within a group system of support (Dyson & Brown, 2005; Project Adventure, 2007).

Physical education is an optimal environment in which to offer Adventure Education. Incorporating adventure Education into the curriculum allows students to be physically active in a non-competitive setting. This can be particularly beneficial for some students with disabilities who may struggle with a highly competitive environment in which a narrowly defined conception of ability may make active participation a challenge (Block, 2016; Evans, 2004). Many schools have climbing walls in their gymnasiums as they afford opportunities for teachers to adjust lessons in order for students to attain a reasonable level of risk (Prouty, 2007). Risk is an essential element of Adventure Education that contributes to an uncertainly making the physical education experience a challenging endeavor (Priest & Gass, 20018).

In addition to the challenge of climbing, there are numerous benefits attained through climbing. The psychomotor skills include increased spatial awareness, fine and gross motor abilities, balance, flexibility, coordination, muscular strength, muscular endurance, and increased bone strength. Even cardiorespiratory and aerobic benefits can be realized depending on the type of activity and conditions selected (Siegel & Fryer, 2015).

In the cognitive domain, problem-solving skills are exercised, demonstrating improved planning and goal-setting. Positive outcomes in the affective domain include locus of control, self-esteem, increased social adjustment, trust, cooperation, and a sense of accomplishment (McAvoy, Smith & Rynders, 2006).

Adventure education promotes intra and interpersonal growth for participants to perform to their fullest. Through adventure games, problem-solving skills and trust building activities, students learn to take risks, and work together to accomplish a goal (Forgan & Jones, 2002) An important

question for teachers then becomes: How can adventure education be implemented so that all students can access the curriculum? Incorporating the principles of Universal Design for Learning (UDL) in Adventure Education is an effective way to facilitate inclusivity for all participants (Lieberman & Houston-Wilson, 2018).

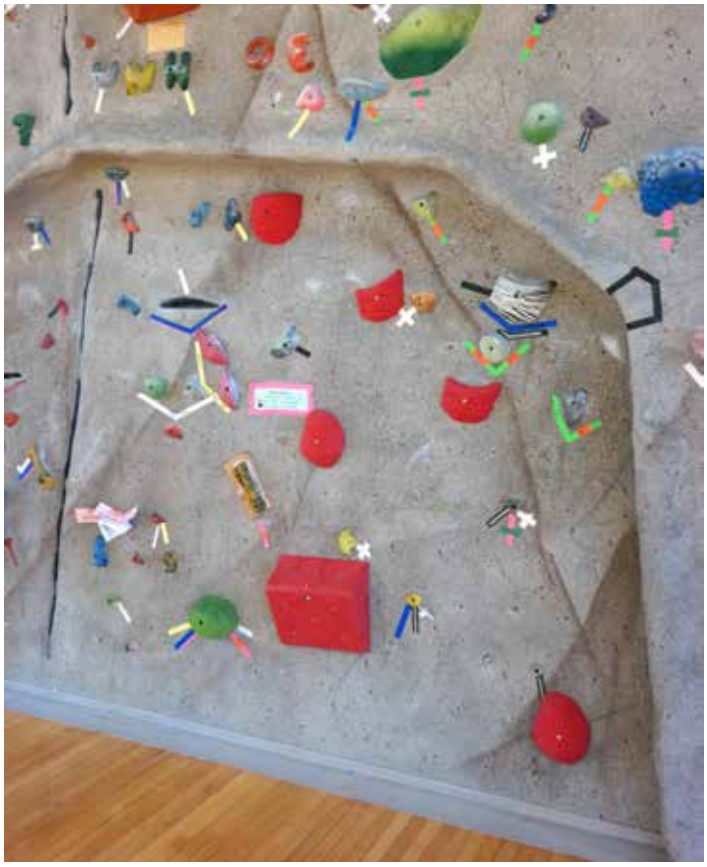
Universal Design for Learning and Adventure Education

Adventure education lends itself nicely to the principles of Universal Design for Learning (UDL). UDL emerged from the architectural field when federal legislation began requiring access to buildings and other structures. Essentially it states the design of environments should be usable by all without the need for adaptation (http://ada.missouri.edu/universal-design.php). UDL addresses the legal requirements of the American with Disabilities Act and Section 504 of the Rehabilitation Act, adopting a broader design-in approach. Section 504 states that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under" from programs that receive federal funding (https://www.ada.gov/cguide.htm#anchor65610). UDL builds on this requirement by adopting a broader "design-in" approach to instructional development (http://ada.missouri.edu/universal-design.php).

Expanding on this architectural principle of *design-in*, UDL is a strategy that attempts to minimize learning barriers. UDL addresses learner diversity by suggesting flexible instruction, goals and materials that enable physical educators to meet a variety of learning outcomes (Cast, 2011). The practice considers the range of students' abilities at the design stage of curriculum making access the focal point (Rapp & Arndt, 2014). The UDL guidelines, which include multiple means of representation, action and expression, and engagement in the curriculum from the beginning, enable students to be purposeful in their learning (Rapp, 2014). Equipment, instruction, and environmental differences can help students learn the intended skills, knowledge, and dispositions inherent to adventure programming. Teachers utilizing the UDL framework begin by examining the program goals for a broad range of skills and abilities at the outset. Options are made available for students, irrespective of their skills so that they can achieve high-level learning goals (http://www.udlcenter.org/).

The climbing wall is one venue where Universal Design for Learning works particularly well.

General and adapted physical education teachers can incorporate UDL principles into their lessons by examining the students' skills that meet the SHAPE America grade level outcomes. For example, at the elementary level an outcome may be that students' *Balance on different bases of support, combining levels and shapes.* (S1.E7.2a). Options for some students, particularly those with who are physically challenged could be to reach for a particular handhold and hold for three seconds. At the high school level, students can all achieve (S4.H2.L1) *Exhibits proper etiquette, respect for others and teamwork while engaging in physical activity and/or social dance* by supporting classmates while on the climbing wall. Using the concept of challenge by choice, students can provide support though belaying techniques even if they elect not to climb on the wall. By providing multiple means of action and engagement, students with a range of skills are able to access learning goals within the adventure program. Through the presentation of skills and the concept of challenge by choice, educators provide multiple means of representation (Cast, 2011; Rapp, 2014).



Example of Universal Design

Guiding Principles of Climbing

Risk and challenge are the unique aspects of climbing (Lynch, Moore & Minchinton, 2012). An indoor climbing wall can easily be enhanced to accommodate individual needs and strengths thereby adhering to the principles of UDL. Because the structures are modular in nature, holds of all shapes and sizes for hands and feet can be added as needed. Ropes can be moved to a desired location or adjusted to work in a specific manner. Climbers of all abilities can be challenged if the program has the hallmarks of good planning including good lesson planning (see "students walk into the gym" narrative), foundational knowledge in teaching best practices, and the ability to teach and prepare gym and adaptive climbing events.

The following principles can help in planning and instructing your lesson while considering the principles of UDL:

- **Eustressful experience**–Expect student to move out of their comfort zone, without making it too much of a challenge by providing a number of challenges that align with students' learning style. Be watchful and strive to ensure a positive yet challenging climbing experience. This encourages students to have varied learning experiences through multiple means of expression.
- **Acknowledge the challenge**–All climbing is hard! Heights induce fear in many people. This fear has a wide spectrum of presentations from simple verbal expressions of fear to physical immobilization by the participant. It is important to realize that climbing may be overwhelming for some students. It is equally as important to respect students though their participation in the curriculum.
- **Challenge by choice**–Challenge by choice is a term coined by Carl Rohnke in 1984 that empowers individuals to determine their own level of risk (Priest & Gass, 2018). Remember the user is empowered to choose how far out of their comfort zone they want to go which empowers the student to select activities that will be meaningful to him or herself.
- **Full Value contract**–This includes the classroom norms for how you are going to function in a climbing environment. This can be imposed or co-created with participants. General components are to support each other, not discount each other, engage in a way that is fair, safe and fun. Providing a healthy and supportive environment allows all students to thrive in the gymnasium.

Key Climbing Skills Defined

What we provide in this section are some of the key specific skills you can incorporate into your program. The skills inherent to each can be aligned with grade level outcomes with some forethought, task analysis and an ecological inventory (Grenier & Lieberman, 2017).

Sensory climbs

Traversing: Climbing sideways/horizontally and low to the ground with no ropes–usually spotted and over padding in program settings. The skill of traversing allows individuals to select the length and degree of their involvement with the wall. For example, while one student traverses the length of the wall selecting any convenient hand-hold, using selected colors can challenge another student.

Sensory climbing: Using equipment that engages sensory learners including a sound stick, ribbons and bells, laser pointer directed climbs, hand signals, and rope tugs. Sensory climbers allows even the most severely disabled students to engage with the wall and be able to express their learning by reaching for or grasping a sensory engaging piece of equipment.

Spotting: Individual(s) or a team of individuals whose task is to help the traverser to manage risk when climbing. This is typically done by directing and protecting the head, neck, and spine from contacting the ground. Note the ground should be padded to climbing wall industry standards. Spotting encourages students to work together to insure a level of safety and camaraderie. Students who are reluctant to climb on the wall are still able to participate by supporting their peers through multiple means of representation.

Top Roping: Climbing under the protection of a rope running through an anchor attached above a climber and belayer. Numerous types of belaying are possible to enhance the design ("standard" belay w/backup, team belay, Australian Belay, etc.). Highly skilled students can be challenged by the inherent risk that comes with scaling new heights.

Standard Belaying: To hold and manage the end of the rope opposite the climber in such a way to manage/minimize slack, catch any falls, and lower the climber back to the ground when finished. Belaying uses equipment, human power and friction. Belaying is an essential safety skill that students can perform to demonstrate learning. Climbing skills are not necessary to belay.

Australian Belaying: Rather than one belayer per climber, several belayers create a belay team to act as a counter weight to support the climber and assist by hauling the climber to varying degrees. This type of climb enables students, through the support of peers or other belayerfigures, to reach heights they might not be able to achieve on their own power.

Augmented Reality Climbing: Climbing integrated with projected images and challenges. These images can provide challenges and skills of numerous types

Design-In Approach to Climbing in the Gymnasium

Because UDL adopts a design-in approach, teachers should think about and plan activities that will both challenge their students and provide opportunities for students to work together in shared learning activities. Have a variety of choices available so that students can select activities that will encourage learning and develop skills necessary to progress to the next

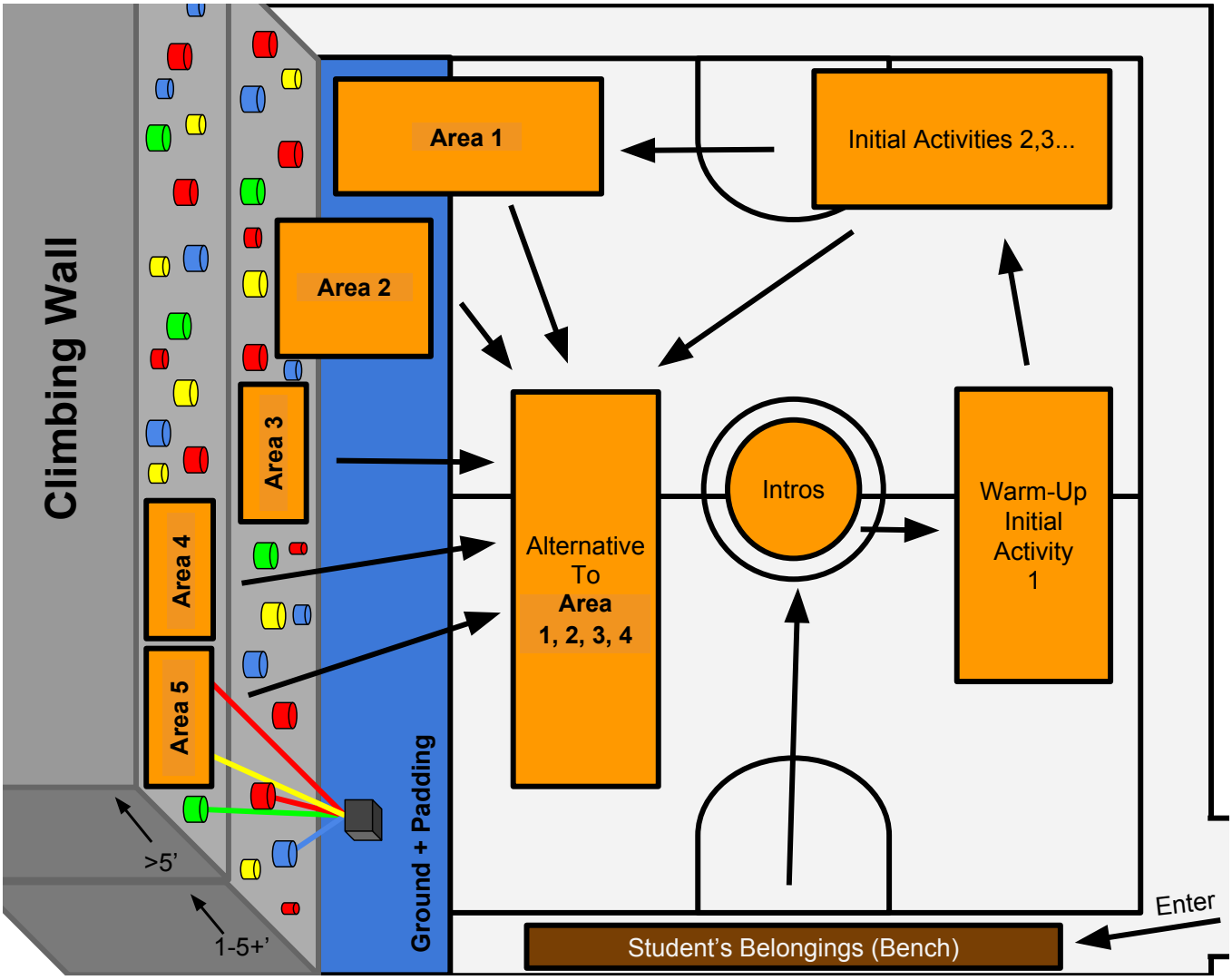
level of challenge. Have all your materials set up and ready to go. Be prepared to be inclusive and find solutions to issues that may arise on the spot. What follows is a gymnasium scenario of a high school or middle school physical education class that describes practices utilizing the principles of UDL. Sample learning objectives could include: (High School) S4.H3-Working with Others: Uses communication skills and strategies that promote team/group dynamics. (Middle School) S4.M1- Personal Responsibility: Exhibits responsible social behaviors by cooperating with classmates, demonstrating inclusive behaviors and supporting classmates.

Entry and organization. Students walk into the gym and place their belongings on a nearby bench. They then walk over and sit at the center circle in the gymnasium where they are greeted by an instructor. Informal introductions occur and a briefing on the class events are given. The teacher leads the class in basic stretches that will help focus students' attention on the planned activities. Teachers may also incorporate low-level tag games designed to encourage active and more vigorous activity. Once warmed up and initial activities are complete, students can be directed to one of five areas.

Area One of the gymnasium will include floor activities with poly spots or balance cubes designed to test students' skills at locomotor patterns that involve transference of weight from hands to feet. Adding an array of other material such as mini-hurdles, domes or noodles, students can be encouraged to develop their own challenge course. Creativity and cross-patterning as well as the use of all limbs should be encouraged. Some specific examples of equipment and activities in this section include:

- Stretching/mimicking of climbing motions
- Utilize equipment to create a challenge course that includes balance squares, spots, small hurdles, tactile pads and other visually engaging materials.

Area Two of the gymnasium involves sensory climbing at floor level near the wall and/or on the wall. In this section participants' feet are typically on the ground underneath the wall or feet far away from the wall. This section of the wall can include engaging pieces of equipment that can be used by students with severe disabilities. Students without disabilities can also act as peer supports by working in tandem with their classmates who have disabilities. Some specific examples of activities in this section include:



The universally-designed gymnasium for full access

- Walking on a rope on the ground
- Finding and exploring holds by with hands, then with feet:
  - Colors
  - Shapes
  - Known objects (animals, letters, etc.)
  - Rings or other objects inserted into or removed from handholds.
  - Transporting removable objects into buckets on the floor or other similar challenge
  - Dangling scarves and bells

Area Three of the gymnasium involves traversing or bouldering activity with a variety of aims, including sensory exploration, collaboration, sideways motion, and games designed to motivate students to work together. Utilizing both hands and feet on the wall traveling low to the ground is the primary focus. Some specific examples of activities include:

- Finding and exploring holds by:
  - Colors
  - Shapes
  - Known objects (animals, letters, etc.)
- Traversing sideways with spotters
  - Climbers can have feet on wall or feet on ground
  - Hurdles, hoops, and noodles inserted into wall can add challenges to this motion.
- Games With Horizontal Climbing
  These may or may not be effective challenges for your participants. Some examples include:
  - Scavenger hunts
  - Motion with music
  - Relays "races"
  - For more suggestions please see Jim Stiehl and Dan Chase's (2008) book entitled *Traversing Walls*.

Area Four of the gymnasium is the climbing wall above 5(ish) feet high, assuming there is a vertical wall. This section can include instruction in belay and/or climbing. Typically in shorter programs, the belaying and risk management in this domain is performed by a qualified and certified instructor. In this section, students have the opportunity to climb on their own power or be supported through other classmates assisting with a variety of technical techniques. A common technique used here the Australian belay.

Climbing games on the wall can also be developed such partner mirroring or matching each other's patterns or challenging climbers to only use selected colors. Some specific examples of activities in this section include:

Australian Belay and assistance skill can haul the climber as needed.

Set up is fairly technical and should be supervised by a qualified and certified instructor.

- One directional person (carabiner through harness) in front
- Two additional pullers (Minimum)
- Two anchor people clipped to rope end
- Clip in climbing connection for climber recommended
- Team communicates and walks away slowly from climb; reverses procedure for lower.
- Be aware of high friction anchors – lower friction!
- Clear belayer walking path
- Cone/marking for end of belay path – don't pull participant into anchor

Belayed Climbing: The most familiar and common vertical climbing found in climbing gyms.

- Clip in climbing connection for climber recommended for efficiency.
- ABD (Assisted Breaking Device) recommended for belayer.

Belayed Climbing with a Sit & Chest Harness

- Provides upper body support and two points for full body assistance
- Tie in climbing connection for climber recommended
- ABD recommended for belayer
- Put chest harness in right place. Follow manufacturer's instructions for connecting to system.
- Beware for chest harness rising to neck

Area Five of the gymnasium is reserved for advanced techniques like rappelling or ascending and futuristic approaches, such as augmented reality on the climbing wall. This technology projects a variety of objects and challenges on the wall. We see limitless possibilities for this in all populations with this form of instruction,

Important Notes:

Personal space should always be respected! Allow participants to try the process, only giving assistance when needed. Gradually increase the assistance provided. The UDL climbing model has a progress built in that will help you assess your participants. During this time determine where you need to provide supports by considering what might work for students, examine student characteristics to best meet student needs. Finally and most importantly, have a full *toolbox* of different technical and rigging systems, as well as activities at hand to allow you to challenge participants to the extent they choose. Use UDL, technical climbing systems and creative activities to engage in participants in climbing.

Table 1 provides a summary toolbox of climbing activities utilizing the principles of Universal Design as outlined above.

Table 2
UDL Climbing Toolbox "Keep 'em Sharp"

Height (x)		
	>5' Section 4 & 5	Toproping Standard belay Australian Belay Assisted Belays/Hauls/MA Vertical Games Aid Climbing Ascending Rappelling Lowers Augmented Reality Climbing
	1-5+' Section 3	(Feet & Hands on the wall) Traversing Traverse with Hoops Traverse with steps on rock Traverse with big step holds Bouldering Sensory and Horizontal games
	0' Section 2	(floor level/on the wall – Feet typically on the ground Underneath wall or feet far away from the wall Traverse spots Elevated Traverse Spots Walk over hurdles Jump & Touch Tactile (hand) traversing (A, B, & C) Tactile (hand) traversing w/foot spots

Disclaimer. Get a trained and certified climbing professional trained in the methods outlined here to help rig and manage risk in climbing environments.

We have presented a lesson plan where students walk into the gym for a day of climbing and other adventure activities. The unique feature of this lesson plan is that it is relevant and meaningful for a variety of individual skills and abilities. UDL principles help teachers address differences in students' skills by providing flexible goals, teaching methods and equipment that empower general and adapted physical educators to meet programmatic and individual needs.

Australian Belay

Conclusion

Providing meaningful instruction to a diverse group of learners can be a difficult task for even the most experienced teachers. Universal Design for Learning is a method of providing and delivering instruction that can be utilized to provide an array of challenges when teaching Adventure Education and in particular, the climbing wall.

Because the climbing wall offers the opportunity for all students to select and participate in activities that align with their unique ability, students are free to both engage in and support their peers in order to achieve grade-learning outcomes. With respect to each individual class, it is important to note that the guidelines and recommendations provided in this article are offered as ideas that may be suitable to your gymnasium. Programs may vary greatly depending on the amount or size of the wall, and the resources available for creating handholds suitable for a wide variety of abilities.

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Using the ICF Model to Increase Physical Activity of Young Adults with ASD Residing in Group Homes

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Abstract

Autism spectrum disorder is a high-prevalence condition that can result in significant impairment of health and function throughout the lifespan. The Autism CARES Act of 2014 placed emphasis on the successful transition of adolescents from secondary school and associated supports to community and adult living. Physical activity has been shown to decrease health disparities associated with disability. This paper presents the International Classification of Function, Disability, and Health (ICF) as a potential framework to assist caregivers in identifying barriers and solutions to physical activity participation among young adults with ASD transitioning to adult living. Jake, a fictitious individual with severe ASD symptoms, is presented as an individual who the authors of the CARES Act may have envisioned would benefit from the law. Selected components of the ICF are presented in relation to Jake's symptoms associated with ASD which initially are exercise barriers. The ICF is presented to provide solutions to the exercise barriers.

Key terms: ASD, *Physical Activity, Transition*

Jake is a 21-year-old male diagnosed with autism spectrum disorder (ASD). He is low functioning and has recently graduated from high school. He enjoys watching basketball and football as well as watching others play video games. He has limited recreational sports skills such as throwing or kicking a ball, but enjoys casual walks. With prompts, he will shoot a basketball using an underhand toss, but does not appear to experience joy or achievement when he makes a basket. Jake does not enjoy participating in team or individual sports. He will follow directions to structured tasks but often needs prompts. He has difficulty utilizing language in a conventional way. For example, he often uses words or short phrases to communicate his needs (e.g., he says "bathroom" when needing to use the restroom). He has never asked about anyone else and utters sounds to state his feelings (e.g., happy, sad, frustrated). Jake will often rub his rib cage with his forearms when he is anxious. At home, he will shower independently, but needs help selecting his clothes and needs prompts to change clothes for high school. Jake is very particular about the foods he eats, selecting only a few foods from a large range of options. He enjoys watching reruns of Star Wars: Episode V – Empire Strikes Back. His favorite part of the movie is the credits at the end of the film. When frustrated he will pace back and forth and recite echolaliac phrases such as "no milk in the TV Jake!" He gets very anxious when his routine changes at home. He has trouble orienting to new people in his life, such as a new manager at his part-time job or a new assistant-living employee at this group home. Jake lives in a group-home just a few miles from his parents. Jake's parents decided to place him in a group-home because his younger sister was not safe at home with Jake if their father was not home.

Jake is beginning to gain weight and his BMI category has moved from a healthy weight status to overweight status. Recently, he has not been as physically active as previous years and his group-home caregivers report that he is watching more TV and not engaging in his normal walks. Jake's low amount of physical activity is concerning to both his parents and the group-home manager. Cheryl, the group home manager, would like to do something to increase his physical activity to increase his employment opportunities, community engagement, energy levels, and decrease his body composition and the additional health risk factors associated with physical activity deficiency. The International Classification of Health, Disability, and Function can be used to identify potential physical activity barriers and facilitators. Cheryl has heard of the International Classification of Health, Disability, and Function, but is under the impression it is used in clinical rehabilitation settings exclusively. Cheryl wonders if this model could be utilized to inform a physical activity program to help Jake increase his physical activity.

Autism spectrum disorder (ASD) is a neurodevelopmental condition which results in significant impairment of social interactions and restricted, repetitive patterns of behavior (American Pyschiatric Association, 2013; United States Department of Health and Human Services, 2017). ASD symptomology is very heterogeneous in nature with impairments ranging from mild to very severe. Symptoms of ASD, including lack of eye contact, typically presents during childhood and most often continues throughout the lifespan (CDC website). The Autism and Developmental Disabilities Monitoring Network estimates about 1 in 68 children are diagnosed with ASD with prevalence estimates nearly five times higher (1 in 42 in males (1 in 42) than females (1 in 189); Christenedn, Baio, Braun, et al., 2012). Adolescents with ASD receiving IDEA services are also more likely to

have a comorbid chronic health conditions compared to all students receiving IDEA services (43% vs. 28%). Compared to all students receiving IDEA services, they are also more likely to experience communication challenges (50% vs. 29%), less likely to independently complete activities of daily living (17% vs. 46%), and less likely to report getting together with friends on a weekly basis (29% vs. 52%).

Young Adults with ASD face significant medical conditions compared to the general population including increased rates of major psychiatric disorders, immune conditions, hypertension, diabetes and obesity (Croen et al., 2015). Many health disparities and secondary conditions can be prevented or delayed by participating in moderate to vigorous physical activity (MVPA; Physical Activity Guidelines for Americans Advisory Council (PAGAC), 2008). For example MVPA has been shown to reduce mortality risk by 27-54% (Paffenbarger et al., 1986), stroke risk by 60%, and coronary artery disease by 19% (Katzmarzyk & Janssen, 2004). Physical activity also increases high-density lipoprotein (HDL) (Butcher et al., 2008) and decreases low-density lipoprotein (LDL) (Woolf-May, Kearney, Owen, Jones, Davison et al., 1999), total cholesterol (Butcher et al., 2008), triglycerides (Wong et al., 2008), type 2 diabetes (Katzmarzyk & Janssen, 2004), obesity (PAGAC, 2008), colon cancer (PAGAC, 2008), and mental health (see Table 1 for a qualitative summary of benefits of physical activity). However, individuals with disability including those with ASD are almost twice as exercise deficient as those without (47.1% versus 26.1%; Centers of Disease Control, 2014). The Autism CARES Act of 2014, a Federal reauthorization of the Combating Autism Act of 2006, placed a heightened emphasis on the successful transition of adolescents with ASD receiving IDEA services to adulthood and community living. Our description of Jake, a transitioning individual with severe ASD, may embody a person the CARES Act was written for.

Table 1
Qualitative Summary of Health Benefits of Physical Activity

	Activity	Reference
↓ Premature Death	Energy Expenditure	Janssen & Joliffe, 2006
		Yu et al., 2003
		Bucksch, 2005
	Duration of PA	Landie et al., 2004
	Frequency of PA	Lam et al., 2004
	Walking	Mathews et al., 2007
		Schnohr et al., 2007
Cardiorespiratory disease	High-intensity PA	Siscovick et al., 1982
↓ Coronary heart disease	Habitual PA	Powell, 1988
	Energy Expenditure	Lee et al., 2000
	Energy Expenditure	Lion et al., 1987
	Fitness levels	Kodama et al., 2009
↓ Stroke	Frequency of PA	Lee et al., 2003
	Duration of PA	Diep et al., 2010
↓ Peripheral arterial disease	Fitness levels	Lakka et al., 2001
	Supervised Exercise Program	Crowther et al., 2008
↓ Atherosclerosis	Duration of PA	Monda et al., 2009
↓ Hypertension	Duration of PA	Cornelissen et al., 2005
↓ Blood pressure	Exercise training	Fagard et al., 2007
Cancer		
↓ Colon cancer	Dosage of PA	Mai et al., 2007
↓ Breast cancer	Dosage of PA	Lee et al., 2006
↓ Endometrial cancer	Dosage of PA	Volskuil et al., 2007
↓ Lung caner	Dosage of PA	Tardon et al., 2005
	Dosage of PA	Lee et al., 2006
↓ Type 2 diabetes	150min/week exercise	Knowler et al., 2002
	Habitual PA	Lindsrom et al.,
	Resistance training	Strasser et al., 2010
↓ Osteoporosis	Resistance training	Kerr et al., 1996
	Resistance exercise	Vuori 2001
↓ Obesity	Resistance training	Geliebter et al., 1997
↓ Metabolic syndrome	Duration of PA	Orchard et al., 2005
↓ Abdominal fat	High-intensity PA	Irving et al., 2008
↑ Weight Management	Walking	Van Eye et al., 2007
↑ HDL Cholesterol	Exercise intensity	Vislocky et al., 2009
↓ Triglycerides levels	Pre-meal exercise	Steward et al., 2003
↓ Blood lipids	Resistance training	Kokkinos et al., 1991
↓ Inflammation	Dosage of PA	Mudugno et al., 2005
Mental Health		
↓ depression	Energy expenditure	Paffenbarger et al., 1994
↓ Anxiety	Exercise training	Herring et al., 2012
↓ Anxiety disorders	Resistance training	Focht et al., 1999
↓ Sleep disturbance	Dosage of PA	Mcauley et al., 2006
↑ Sleep	Resistance training	Singh et al., 1997
↑ Energy	Dosage of PA	Puetz et al., 2006
↓ fatigue	Resistance training	Van der Kooi et al., 2007
↓ Secondary health conditions	Resistance training	Nash et al., 2007

PA = Physical Activity; HDL = High-Density lipoprotein

With appropriate supports, caregivers including parents have the potential to facilitate physical activity of young adults with ASD and help prevent the onset of *secondary health conditions* (SHC). Secondary health conditions include the medical, social, emotional, family, or community problems that a person with a primary disabling condition experiences in addition to their primary disability (USDHHS, 2010). Although many caregivers and group home managers may value the benefits of physical activity, they may not have access to the knowledge needed, or a framework, to guide them in facilitating physical activity for a young adult transitioning from existing pediatric and school-based services to community and independent living. They may have trouble acquiring and implementing physical activity implementation models. A tool to help caregivers and group home managers identify hidden barriers to physical activity, develop solutions, and implement a successful health-enhancing physical activity program or plan is the International Classification of Function, Disability, and Health (ICF; WHO, 2001). Therefore, the purpose of this paper is to present the ICF model as a tool to help caregivers, parents, and group home managers identify the barriers and potential solutions to physical activity participation among young adults with ASD transitioning to adult living, such as Jake.

International Classification of Function, Disability, and Health

The ICF is an effective model for guiding health professionals in identifying potential physical activity barriers of individuals with disabilities (van Uem et al., 2016). It can be utilized to support the development of tailored physical activity programs to remove the identified barriers to physical activity and increase physical activity participation among transitioners with ASD. The benefit of the ICF is the identification of the diversity in an individual's functioning and health, and how these factors interact with the myriad of the individual's environmental factors. Each factor should be addressed for successful participation and adherence to a

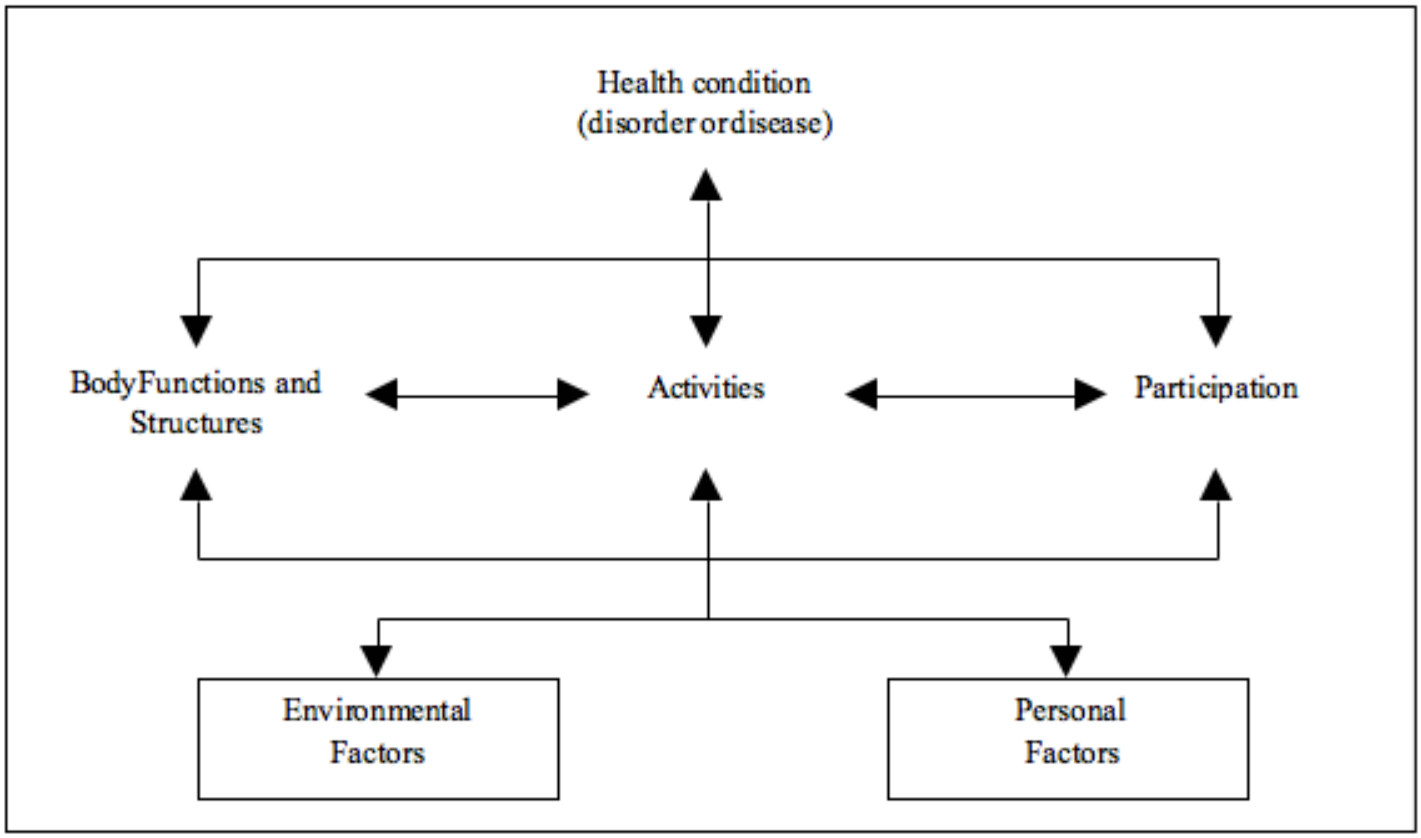

Figure 1. Interaction between the ICF Components

physical activity program. The ICF model presents *disability* as the outcome of a complex relationship between an individual's health characteristics (i.e., conditions or symptoms) and the environment (i.e., external factors) in which the individual lives (WHO, 2001).

ICF Format

The ICF is composed of six sections (WHO, 2001), A-F. The introduction section (Section A) presents background information, the purpose of the ICF, an overview of its components, and other descriptors. Sections B, C, and D presents an overview of the one-level, two-level, and detailed classification with definitions of each functioning classification. Section E provides helpful annexes, and the index is found in Section F. The focus of this paper will be the utilization of Section D, the Detailed Classification with Definitions section that can be utilized to guide caregivers in identifying the functional and environmental barriers experienced by transitioners with disabilities and ASD. Section D has 4 sub-sections: Body Functions, Body Structures, Activities and Participation, and Environmental Factors. The interaction between these sub-sections and an individual's Personal Factors provides the basis for the ICF model (Figure 1).

Components of the ICF Section D

The center of Figure 1 indicates the three dimensions that impact the health of people with disabilities. *Body functions and structures*, describes the physical, cognitive, and/or sensory impairment which prevents the individual from participating in academic, social, and other activities of daily or community living. *Activities* describe health behaviors (e.g., physical activity) that the individual completes independently at the person level, including physical activities and completing instrumental activities of daily living. *Participation* includes access to and engagement of community resources which facilitate an active lifestyle (e.g., attending a fitness center, shopping, and employment). Each level is affected by *environmental factors* (i.e., accessibility barrier) and *personal factors* (e.g., lack of disposable income to join a fitness center) located at the bottom of the figure. The key to successful use of the ICF model when developing a tailored health-enhancing physical activity program is the interaction of both personal and environmental factors on the activities and/or participation of the individual. The next section will describe aspects of the body function and structure, activities and participation, and personal factors within the context of Jake, the young adult male with ASD, and the attributes which might affect his involvement in a community-based physical activity program. ASD was selected as an example disability to highlight the application of the ICF model because of its high prevalence rate (1 in 68; Centers of Disease Control and Prevention, 2010) and research which indicates that individuals with ASD tend to have significant motor and fitness delays (Berkeley, Zittel, Pitney, & Nichols, 2001; Liu & Breslin, 2013; Sowa & Meulenbroek, 2012; Staples & Reid, 2010).

Body functions and structure/impairment. Body Functions are the physiological functions of the body and include both physical systems (e.g., the neuromuscular response to exercise, how efficiently the body utilizes oxygen during long walks) and psychological functions (e.g., how one feels toward participating in a BodyPump program at the YMCA). Impairments of body functions and structures results in a significant decreased capacity of the specific organ or body system. Seven categories are listed under body functions; examples of how mental function, functions of the digestive system, and neuromusculoskeletal functions can act as barriers to participation in physical activity to Jake will be discussed.

Mental function. Chapter 1 of Section D list impairments associated with cognitive functioning. Some examples of common disability diagnoses with cognitive impairment include Down's syndrome, intellectual disabilities, cerebral palsy, traumatic brain injury, and ASD. The ICF further segments mental function into Global mental function and Specific mental function. Two areas under Global mental function associated with ASD symptomology are Orientation and Temperament and Personality, and two areas under Specific Mental Function related to ASD are Perception and Thought functions.

Orientation. Adults with ASD, and support personnel, may experience difficulty in keeping track of when a community-based physical activity program is offered and understanding and adapting to a new facility or a new physical activity program offered in a familiar setting (APA, 2013). In addition, adults with ASD experience difficulty orienting to new people and may position themselves either socially too close, too far, or out of sync with other group-exercise participants. Other challenges include fluctuations in noises and lighting as well as familiarity with fitness equipment and general safety precautions. Actively recruiting a peer exercise buddy who knows and feels comfortable assisting and reassuring the participant with a disability is a recommended method to help orient the exerciser with ASD to the exercise program. Application of the ICF Orientation sub-section is now presented.

A fitness program is available at a local fitness center. Cheryl, Jake's group home manager, wonders if a daily or weekly incentive could be provided at the group-home if he participates in the fitness program for six straight weeks. Cheryl would need to determine what type of incentive motivate Jake to participate in the fitness program. She would then develop a process for determining when and how to provide the incentive to Jake.

Temperament and personality. Young adults with ASD may have a despondent disposition to exercise (i.e., shy, restricted, and inhibited; Obrusnikova & Cavalier, 2011; Todd, Reid, & Butler-Kisber, 2012). In addition, these individuals experience social deficits and may prefer quieter settings and individual games and activities (MacDonald, Lord, & Ulrich, 2013). Having an assistant or a caregiver accompany the exerciser to the fitness facility on several occasions prior to the initiation of the program may help to slowly acclimate to the unique environment.

Cheryl believes that Marcus, a group home resident assistant, may be willing to take Jake to the fitness program after he arrives home from his part-time job. He will need to be comfortable with working with Jake in the community, and have an understanding of Jakes interests exhibited through his expressions and actions. Marcus would need to be acquainted with the facility, its staff, and possibly some fitness program members prior to giving Jake two walk throughs to gauge his response and assess if he would consider participating in the program.

Perception. A physical activity program such as BodyPump or tai chi requires the participant to accurately interpret verbal and nonverbal cues provided by the exercise leader. An adult with ASD, like Jake, may have difficulty in discriminating between, and attentively focusing on, instructional cues and prompts (APA, 2013). If the series of exercises is a predetermined routine, the exercise leader can email or text the routine to a caregiver who can create a picture chart of the sequence of movements for the exerciser to follow along during class.

Developing and refining computer word-processing skills is one of Jake's group home goals. Marcus could gather symbolic pictures representing the sequence of movements used in the fitness program. Cheryl considers the feasibility of Jake creating his own picture chart for the fitness program, if Marcus emails Jake the needed materials. Cheryl determine if Jake can feasibly construct the sequence of exercises provided by the exercise leader, Leslie, and Marcus and Cheryl will need to understand the training exercises. Leslie or Cheryl may need to provide initial training to the exercise facility staff on basic inclusion principles and reasonable accommodations to appropriately meet Jake's needs.

Thought. Thought functions refer to the pace, form, control, and content of thought as well as goal-directed thought and non-goal directed thought. Adults with ASD may experience difficulty in maintaining focus on the goal of the exercise session (e.g., complete the session performing all movements as directed by the exercise leader; Seltzer et al. 2003). In this scenario, the exercise leader or peer-model can place emphasis on handclaps or vocal directions providing an auditory cue. Other strategies include providing a verbal cue (e.g., "Like this, Jake") or a light touch on the shoulder by the peer-model.

Marcus could inform Leslie, the exercise leader, that Jake needs minor reasonable and appropriate exercise modifications including emphasizing handclaps and providing verbal cues. From Marcus's description of Jake and the accommodations needed, Leslie will need to understand Jakes ability to interpret, comprehend, and implement her instructions within the given exercise.

Functions of the digestive, metabolic, and endocrine systems. Chapter 5 of Section D presents barriers to physical activity involving ingestion, digestion and elim-

ination, and metabolism and endocrine glands. Adults with ASD may experience difficulty in absorption and digestive function due to prescribed medication and with preferences of limited food items (Ledford & Gast, 2006; Srinivasan, Pescatello, & Bhat, 2014). Assistants or caregivers can assess the influence of medication on the participant's activity level and cognitive engagement. Physical activity engagement can be implemented during time windows in which the participant is least affected by medication, or the medication consumption can be scheduled around physical activity sessions.

Cheryl and Marcus both know that Jake has mild adverse reactions to some of his medication; he gets sluggish and prefers light activity at best. In addition, this medication must be taken with food. BodyPump classes are offered at different times at the YMCA. Leslie's class meets at 4:00 p.m.; a perfect time for Jake to exercise before taking his medications at 6:00 p.m. with his dinner meal.

Neuromusculoskeletal and movement-related functions. Many adults with ASD will experience fine and gross motor delay (Berkeley et al., 2001; Mache & Todd, 2016; Mari, Castielo, Marks, Marraffa, & Prior, 2003), presented in Chapter 7 of Section D. These include delays in the development of fundamental motor skills needed to actively participate in functional individual and team sports and recreational games. In addition, these individuals may have had an exercise deficient childhood leading to inefficient muscular strength, muscular endurance, neuromuscular coordination, and cardiorespiratory fitness resulting in an unhealthy body composition (e.g., obesity). Specific adaptations may be needed to increase habitual physical activity. Daily or regular participation in a community walking program at a local mall will help Jake's body, systems (e.g., neuromusculocardiorespiratory system), and organs (e.g., skeleton) respond to the added physiological stress induced by the increase of the regular low-intensity physical activity.

Cheryl was recently contacted by Luke, a local undergraduate business student needing to complete 15 hours of community service for his fraternity pledge. Jake's group home residents attend the mall each Saturday. However, Jake and others are often left at home because of a lack of adult supervision on the trip to the mall. Luke would be informed and instructed on Jakes behaviors and tendencies when engaging in his local community such as the mall and provide the additional supervision needed for Jake to attend the Mall. In addition, Luke could be instructed to implement a walking program for Jake. Cheryl would inform Luke with Jake's individual physiological factors and how he responds to given exercises. Once this has been accomplished, an incentivized program could be developed such as for every 1,000 steps Jake takes, as measured by his pedometer, he receives an additional 10 minutes of watching Star Wars credits. Cheryl believes the walking program would be an excellent method for Jake to acquire additional physical activity.

Activities and participation. The second component of the ICF model is Activities and Participation. Activities are the completion of tasks by an individual and activity limitations are deficiencies in completing these tasks. Participation is defined as engagement in a life situation and participation restrictions are problems the individual may experience in involvement in life situations. The ICF provides nine domains of activities and participation. The chapters in this section which are most relevant to a transitioner with ASD (e.g., Jake) participating in a community-based physical activity program include (i) learning and applying knowledge, (ii) communication, and (iii) interpersonal interactions and (iv) relationships.

Learning and applying knowledge – learning, applying learned knowledge, thinking, solving problems, and making decisions. Adults with low-functioning ASD will have limitations in learning and completing cognitive processes (APA, 2013). These individuals will experience difficulties in learning the sequenced steps needed for learning a new skill, routine, or activity. For example, a local fitness center is offering a bi-weekly group exercise course, BodyPump, at a convenient time. The exercise leader or assistant may need to segment the routine into smaller steps or the participant might benefit from skipping selected components of the routine. Incorporating a combination of these two options would help the person participate with higher success and experience a more positive affect toward attending the next class.

Leslie observes that even with loud hand claps and additional verbal cues, Jake is not able to complete the routine in her new BodyPump class. After consulting with Marcus, Leslie cuts ½ of the exercises for Jake. Instead, he will spend twice the time completing the remaining exercises. Leslie could also be asked to increase her positive reinforcement statements to Jake after he completes his designated exercises.

Communication—general and specific features of communicating. This chapter in the ICF model presents problem areas that a low-functioning adult with ASD may experience when needing to communicate. Subsections include communicating with and receiving information by spoken messages and nonverbal messages including body gestures, general signs and symbols, drawings, and photographs, engaging in conversations and using communication devices and techniques. Communication impairment is a hallmark symptom of ASD (Seltzer et al., 2003). Our transitioner with ASD, Jake, will likely experience trouble expressing and receiving spoken and non-spoken information. Visual supports such as visual schedules, first-then boards, task organizers, count down strips, and audible stories are strategies to communicate which movements, tasks, or activities are planned next. Picture boards can be used to communicate the completion of tasks by moving the picture of a task from the "to-do" column on the board to the "completed" column on the board (Fittipaldi-Wert, & Mowling, 2013). This technique also communicates how many tasks are required to complete the activity and may also be used as a measure to provide an external reward for completing the physical activity session.

Table 2

Possible Solutions to Physical Activity Limitations among Young Adults with ASD Using ICF Classification System: Body Functions

Body Functions (ICF Chapter)	Impairment	Physical Activity Solution
Mental Function (1)	Altered state of consciousness due to medication	Seek physicians approval to change the time of day medicine is taken
	Difficulty understanding how to use exercise or pool equipment	Use picture boards and short phrases to explain equipment procedures
Sensory functions and pain (2)	Sensitive to changes in temperatures, lights, and colors in the fitness center	Visit fitness center several times prior to beginning exercise routine to help adapt to new setting
Voice and speech functions (3)	Echolalic speech	Use picture boards and/or instructional stories to communicate exercise routine
Cardiovascular, Hematological, Immunological and Respiratory systems (4)	Temporary increase of blood-pressure and heart-rate due to medication	Seek physicians approval to alter time of medication ingestion
Digestive, metabolic and endocrine systems (5)	Upset stomach due to gastrointestinal intolerance	Limit eating within 2+ hours of initiation of exercise routine
Genitourinary and reproduction (6)	Urinary incontinence with acquired spinal cord injury	Empty bladder or catheter prior to exercise session
Neuromusculoskeletal and movement-related functions (7)	Muscular atrophy due to sedentary behavior and lack of acquisition of fundamental motor skills	Initiate a daily neighborhood walking routine; eliminate digital device use to < 2hrs per day: walk the dog program
Skin and related structures (8)	Pressure sore with acquired traumatic brain injury while using wheelchair for transport	Avoid prolonged sitting in same position; avoid skin abrasions during transfers

Table 3

Possible Solutions to Physical Activity Impairment among Young Adults with ASD Using ICF Classification System: Activity and Participation

Body Functions (ICF Chapter)	Impairment	Physical Activity Solution
Activity (ICF Chapter)	Activity Limitation	Physical Activity Solution
Learning and applying knowledge (1)	Difficulty in learning new exercise routine	Remove parts of exercise routine; Break-up remaining parts into multiple steps
General tasks and demands (2)	Difficulty in independently preparing, initiating and arranging time and equipment to complete exercise routine in fitness center	Provide detailed picture activity schedule or tell social story outlying the exercise steps including preparing materials at home (e.g., clothing)
Communications (3)	Difficulty receiving and producing messages pertaining to exercise	Provide electronic device such as an iPad or Surface Pro application
Mobility (4)	Difficulty in carrying, moving and handling heavy objects due to deconditioning	Provide service opportunities in group-home setting involving carrying objects
Self-care (5)	Difficulty in following undressing & dressing at beginning and end of exercise routine	Provide a picture schedule or social story describing routine; provide initial physical assistance if necessary
Domestic life (6)	Not applicable in physical activity setting	Not applicable
Interpersonal interactions and relationships	Difficulty in engaging in appropriate social interactions with fitness center staff and peer clientele	Role-play predictable and appropriate social exchanges at home with caregiver and other residents
Major life areas (8)	Not applicable	Not applicable
Community, social, and civic life (9)	Difficulty in maintaining appropriate behavior during competitive recreational activities	Establish clear social expectations (e.g., no taunting opponents or officials) with associated rewards and consequences.

Table 4
Possible Solutions to Physical Activity Impairments among Adults with ASD Using ICF Classification System: Environmental Factors

Environment (ICF Chapter)	Barrier	Physical Activity Solution
Products and technology (1)	Proper use and purpose of exercise equipment is not understood	Use picture board, iPad, or Surface Pro app to communicate how to appropriately use equipment
Natural and human-made changes to environment (2)	Difficulty exercising in the morning due to medication, light sensitivity, etc	Change time or exercise routine to evening
Support and relationships (3)	Lack of staff knowledge of how to include and address people with ASD	Provide staff support by presenting simple content tips and model preferred behavior
Attitudes (4)	Lack of inclusive attitude of fitness staff	Offer to provide a 1-hour workshop on successful inclusive techniques
Services, systems, policies (5)	Facility costs is too expensive for individual to utilize the fitness center	Investigate if fitness center subsidies are available through individuals insurance

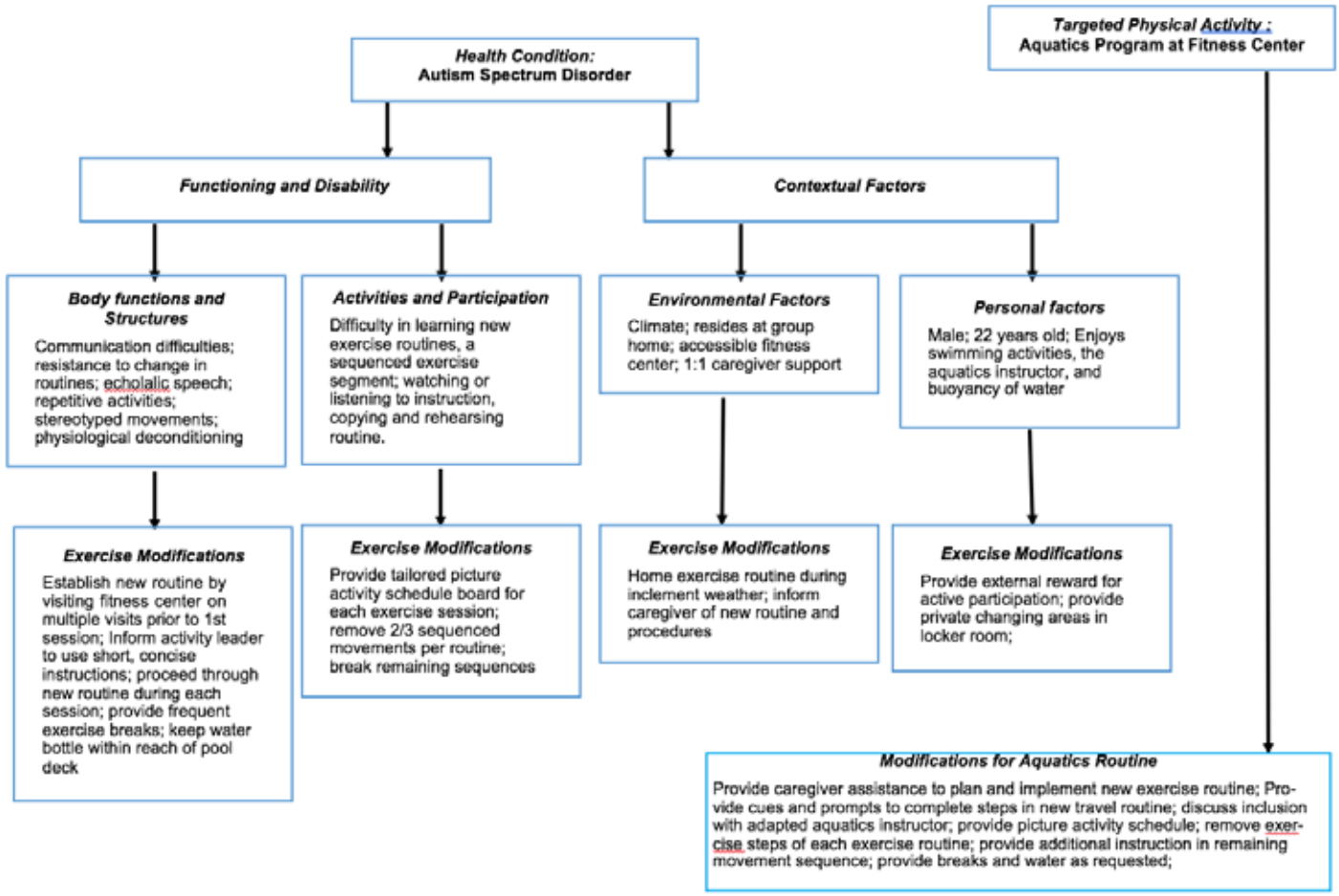

Figure 2. Identifying Key Factors in Prescribing Physical Activity of a Male with ASD

Marcus, with help and input from Jake, creates a first-then board that displays the order of Leslie's BodyPump session components: warm-up, activity, and cool-down. As a reward for completing two of the three component parts of the BodyPump session, Jake gets to choose one of three rewards at the group home.

Interpersonal interactions and relationships—completing actions and tasks required for basic and complex interactions with people. Several categories under this chapter are applicable to adults with ASD when participating in a community-based physical activity program. Tasks such as regulating behaviors within personal interactions, interacting according to social rules, and maintaining social space will most likely all be social limitations for transitioners with ASD (APA, 2013). Strategies such as role-playing a high-probability social interaction at the community or group home using flash cards with a prewritten dialogue that the individual can state verbatim can be a very useful tactic to mimic appropriate social interactions and foster appropriate communication.

Interacting with others in a positive manner is a goal in Jake's group home plan. Cheryl and Marcus create flash cards for Jake to read in anticipation of very common interactions such as greeting other BodyPump participants. Two sets of verbal dialogue flash cards are created. One for Jake, and one for a group home peer. Both practice the dialogue exchange in class on Tuesdays—the day of BodyPump.

Sample templates of each ICF domain (body functions/structures, activities and participation, environmental factors) are provided in Tables 2, 3, and 4. Each table presents tailored adaptations for addressing the specific impairment, activity limitations or participation restrictions for an adult, similar to Jake, with ASD.

Personal factors. Due to the broad ranging scope and severity of the individual, social, and cultural factors associated with disability, the ICF model does not provide a list or description of personal factors related to the health condition that impedes physical activity in the classification system. Examples of personal factors include sex, race, age, lifestyle, social background, education, occupation, and psychological characteristics. Psychological factors are large and diverse and include factors such as self-consciousness about exercising in general or in group settings, self-efficacy toward exercising, level of motivation, and resilience toward overcoming unforeseen exercise barriers (e.g., rainy day). It is important to identify factors such as exercise preferences (e.g., alone or with a group, individual or team sports, or recreational activities) interests level (e.g., participating in a BodyPump class), and level of motivation (e.g., enjoys walking-jogging with an individual from the community) when designing a physical activity program.

Jake has been successful in participating in group activities as long as he is not required or expected to interact with other group members, such as line-dancing in his physical education class. As long as Jake is not required to respond to other BodyPump class members, Cheryl and Marcus believe he will participate successfully with these modifications.

Tailored physical activity program for a transitioning adult with ASD. Figure 2 highlights how the ICF domains (i.e., body functions and structures, Activates/Participation, and Contextual Factors) can be assessed and integrated into a community-based physical activity program. The figure illustrates the key ICF domains with specific examples in addressing barriers to physical activity participation. This data can be used to formulate a transition plan in the student's IEP.

Conclusion

Young adults transitioning from attending secondary school to community-based living face several health disparities (USDHHS, 2017). Meeting the recommended amount of physical activity prevents the onset of many of these disparities. However, transitioning adults with ASD experience additional barriers to achieving the recommended physical activity levels needed to sustain a healthy lifestyle, prevent disease, and delay the onset of preventable secondary health conditions (PAGAC, 2008). For assisted living supervisors over those with severe ASD, the ICF can be utilized to identify an individual's barriers to physical activity and develop an initial, informed, and appropriate physical activity program. Understanding the ICF will help caregivers identify the multifaceted and various combinations of factors (i.e., impairment, environmental factors, and personal factors) which act to facilitate or hinder a physically active lifestyle. A gap between the *functioning* and p*erson-environment* contextual factors may result in a decrease of habitual and health-enhancing physical activity. Broad physical activity recommendations, such as those outlined in the 2008 Physical Activity Guidelines for Americans fail to identify key personal, environmental, and activity barriers. The ICF helps to mediate this gap by helping the caregivers understand the impairment(s), activity limitations, and participation restrictions within the context of the person-environment factors. Identifying the barriers to physical activity using the systematic framework that the ICF provides is a first-step toward development of a tailored and precise physical activity program for a transitioning adult with ASD.

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2019 Midwest Symposium on Therapeutic Recreation: Data Sheet

General information:

2018's Symposium received 299 participants in the field of recreational therapy. Individuals from California to Pennsylvania, and everywhere in between, including professors, supervisors, staff, and even students made up the attendee list. The Kansas City venue was such a huge success that we're offering the symposium again at the same location in 2019.

New in 2019:

- Theme "Flourish in 2019"
- Pre-conference workshops, presented by NCTRC
- Early bird discount registration
- Student poster exhibit
- Door prizes
- Facebook forum page for attendees
- Special awards announced/given out on the last day at the wrap-up session

Theme:

"Flourish in 2019"

Dates:

Pre-Conference Workshops
Tuesday, April 23
9 a.m. – 12:30 p.m.: NCTRC Exam; Content outline, specifications, & process. ($99) Lunch included.
1:30 p.m. – 4:30 p.m.: Internships; What you should look for as a student and how you can make the experience more relevant as a supervisor. ($49) Lunch included.

Check-In

Tuesday, April 23rd 4:30 p.m. – 7 p.m.
Wednesday, April 24th 7:30 a.m. – 9 a.m.

Conference

Wednesday, April 24 | 9 a.m. - 5 p.m. (Lunch with keynote included)
Thursday, April 25 | 8 a.m. - 5 p.m. (Lunch with speaker included)
Friday, April 26 | 8 a.m. – Noon

Location of conference & hotel room reservations:

Stoney Creek Hotel & Conference Center
18011 Bass Pro Drive
Independence, MO 64055 (Kansas City Metro Area)
1-800-659-2220
$99/night for hotel rooms; includes a hot breakfast each morning, parking, & WiFi

Registration fees:

Student volunteer $90
Student $199
Early bird (before 1/1/2019) $245
Regular registration $295
One day registration $185
Late registration (after 3/22/2019) $50 additional fee

Opening Session Speaker:

Humorist **Devin Henderson** will kick off the Symposium with some fun and laughter as he explains that you can "Crack or Crack Up." He'll give the audience a simple acronym to remember that will assist with the stress we all have in our professional and personal lives.

www.DevinHenderson.com

Keynote Speaker:

Dr. Lynn Anderson, professor at the State University of New York, Cortland and co-author of the textbook "Therapeutic Recreation Practice: A Strengths Approach."

Keynote Speaker:

Dr. James Wise, professor at Minnesota State University and, most recently, in 2018 authored the article "Integrating leisure, human flourishing and the capabilities approach: Implications for therapeutic recreation" in the Therapeutic Recreation Journal. Dr. Wise also authored "Preparing future professionals to serve as moral agents" in the American Journal of Recreation Therapy.

Trump Administration "Rethinking" Special Education

by Shaun Heasley | September 21, 2018 – Disability Scoop

The nation's top special education official is setting a new agenda for the U.S. Department of Education as it works to address the needs of students with disabilities.

A framework released Thursday details a commitment from the Education Department's Office of Special Education and Rehabilitative Services to "rethink anything and everything" in a quest to meet the office's mission "to improve early childhood, educational and employment outcomes and raise expectations for all people with disabilities, their families, their communities and the nation." Specifically, the two-page document pledges to support states while ensuring flexibility and partnering with parents, individuals with disabilities and other stakeholders. "'Rethink' means everyone questions everything to ensure nothing limits any student from being prepared for what comes next," wrote Johnny Collett, the Education Department's assistant secretary for special education and rehabilitative services, in a posting about the framework. At the heart of the department's new approach is a mindset favoring local decision-making over federal mandates, said Collett, a former high school special education teacher and state special education director. "This commitment means acknowledging that states, school districts and parents know the needs of their students better than we do," he wrote. "Our goal is to provide them with as much flexibility and support as possible so that they can ensure their students' needs are being met." The federal Office of Special Education and Rehabilitative Services, meanwhile, should act as a support system for states, the document indicates, ensuring that government policies and systems do not impede individuals with disabilities. "This will require an unwavering commitment to address barriers that stand in the way of improving opportunities and outcomes for each person with a disability and to make needed changes at the federal, state and local levels," Collett said.

Beijing Sport University Inclusive Physical Education/Physical Activity Online Project

The Chinese educational system sends most children with disabilities to special schools. The teacher education programs in China do not require their students to take any coursework related to disability and, as a result, teachers in the schools are not prepared for the educational change that is starting in their country. The government is cautiously encouraging school districts to include children with disabilities in regular schools and physical education teachers and pre-service students need to be prepared to include children with disabilities in their classes.

As a result, Professor Lu Yan, Director of the China Research Center on Sports for Persons with Disabilities, and Dr. Glenn Roswal, Jacksonville State University Professor Emeritus, conceived the concept of this project during the summer of 2016 and invited Dr. Stephen L. Cone, Rowan University Professor Emeritus, to direct the project. Dr. Cone assembled a development team that consisted of: Dr. Martin Block, University of Virginia; Dr. Theresa Purcell Cone, Rowan University; Dr. E. Mike Loovis, Cleveland State University; Dr. Ron Davis, Texas Woman's University; Dr. Lu; and Dr. Roswal.

Central to this project and the envisioned goal of inclusive education are several overarching approaches, themes, and beliefs. These are not exclusive, but rather serve as guiding markers for the overall project:

- We believe that all students should always participate in learning and playing with respect and quality;
- We believe that you should know the students' characteristics, functionality, interests, and sensory needs;

- We believe that inclusive education provides opportunities for all students to be leaders, decision-makers, and contributors;
- We believe that you should present information in a variety of ways—visually, physically, tactilely, and verbally;
- We believe that you should allow students to show their understanding and ability through - demonstration, drawing, writing, speaking, or pointing; and
- We believe that the Universal Design for Learning, Space-Time-Equipment-Player (STEP) Instruction, and appropriate modification and adaptation concepts/approaches contribute to a quality learning environment and experience.

Our vision is that the underlying concepts and approaches inherent in these beliefs will flow throughout the workshops and into the online modules.

The development team identified 9 workshops to be offered over a 3-year period. These workshops consist of:

- Inclusive Dance in Physical Education (July 2017)
- Inclusive Physical Education at the Secondary Level (September 2017)
- Teaching Strategies for Children with Autism (October 2017)
- Inclusive Collaborative and Cooperative Activities (July 2018)
- Inclusive Physical Education at the Primary School Level (August 2018)
- Introduction and Awareness: Athletes with Disabilities (January 2019)
- Inclusive Physical Education for Physical Fitness (July 2019)
- Inclusion in Physical Education for Students with Visual Impairments and Severe Disabilities (August 2019)
- Assessment development and implementation (January 2020)

Each workshop would be offered in an on-campus format where teachers, graduate students, and undergraduate students attend a 2 ½ workshop at Beijing Sport University and in an online 2-module format offered to teachers and students throughout China.

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"Born This Way" is a Win for Inclusion at the 2018 Emmy Awards

The cast of A&E's reality series *Born This Way* is breaking barriers as one of the most inclusive shows on television. The series, which follows seven young adults with Down syndrome, received four Emmy nominations this year, including:

- Outstanding Unstructured Reality Program
- Outstanding Cinematography for a Reality Program
- Outstanding Picture Editing for an Unstructured Reality Program
- Outstanding Casting for a Reality Program

In total, the show has won three Emmy's and garnered 13 nominations throughout its three-year run for its outstanding casting and cinematography.

The cast of *Born This Way* invites the audience to join them as they experience the joy, challenges, passion, and complexities of life as young adults. Audiences across the United States tune in every week to follow the cast as they pursue their goals, grapple with personal identity, and navigate everyday life. Critics praise the show's authentic portrayal of life with an intellectual disability from the exciting to the ordinary. When they are not on set, the cast members use their platform to encourage others to eliminate degrading language from their vocabulary. This year they teamed up with Special Olympics and Best Buddies in the "Spread the Word to End the Word" campaign.

Countdown to Special Olympics World Games Abu Dhabi 2019

The first Special Olympics World Games to be held in the Middle East/North Africa Region will take place March 14-21, 2019, in Abu Dhabi, United Arab Emirates. According to Special Olympics International, the Games will be the largest humanitarian and multisport event in 2019. The United Arab Emirates are taking a leading role in ending discrimination against people with intellectual disabilities. Special Olympics World Games is a prime example of their commitment towards a more inclusive world. An estimated 7,000 athletes from around the world will compete in 24 summer sports. Competitions will happen in 11 venues throughout UAE's capital, Abu Dhabi. More than 2,500 coaches and 20,000+ volunteers will make these Games the most memorable and meaningful sporting event on the planet. There will be a wide range of traditional sports, along with Unified Sports –which bring people with and without intellectual disabilities together on the same teams. In fact, the Abu Dhabi organizers are promising to stage the most unified Special Olympics World Games ever.

Beyond Sports

There will also be a full program of non-sports events, including the Host Town program and the Law Enforcement Torch Run. The Final Leg of the Torch Run runs 3-14 March at locations across Abu Dhabi. The competitions officially launch the morning after the grand Opening Ceremony on March 14. Thousands of spectators will take part, including government and business leaders, celebrities and activists, Honored Guests and more. With a tradition of warm hospitality, the people of Abu Dhabi are ready to welcome athletes, fans and families from every culture and every part of the world. Everyone will experience the spirit at the heart of Special Olympics: respect and inclusion for all people and all abilities. The Abu Dhabi organizing committee is also pledged to include people with intellectual disabilities in all facets of the Games, including behind-the-scenes. The goal is give every spectator and guest an inclusive and transformational experience with Special Olympics athletes. For more information about the games, visit https://www.abudhabi2019.org

2018 Global Youth Leadership Forum in Baku

In celebration of the 50th Anniversary of Special Olympics, the 2018 Global Youth Leadership Forum took place in Baku, Azerbaijan, September 24 to 28, 2018. 120 youth leaders with and without intellectual disabilities from 45 countries gathered in Baku for the forum, which was one of the flagship events to mark the 50th Anniversary of Special Olympics. A goal of the forum was to assist young leaders and an additional 100 adult leaders from around the world develop group projects to create more inclusive communities in their home countries. Projects developed in Baku will be implemented in their home countries in the months after the Forum. These projects, which will be supported through grants from Special Olympics International, are expected to result in 8,500 young people being newly engaged in inclusive sports and leadership activities in 250 new Unified Schools and sports clubs worldwide.

Empowering Participants to Drive Social Inclusion

At the Forum, which was run in partnership with Ministry of Youth and Sport of the Republic of Azerbaijan among others, youth leaders had opportunities to develop and expand their understanding of how they can drive social inclusion in their country. They explored new strategies and actions from globally recognized experts in leadership to help advance a more inclusive world using the Special Olympics Unified Sports platform—where participants train and compete together. Representatives from the worlds of sport, business, government, service organizations and international development such as Special Olympics Global Ambassador Vanja Grbic and Special Olympics International Board member Natalia Vodianova also played a crucial part at the Forum and work to inspire the youth leaders.

RESOURCES

Coaching Better Every Season

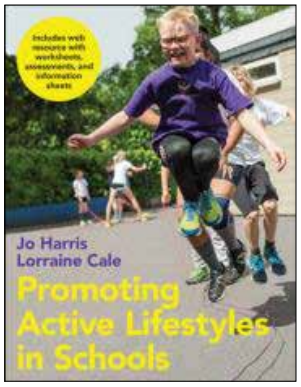
Wade Gilbert (2017)

Champaign, Illinois: Human Kinetics Publishers
www.HumanKinetics.com
ISBN: 978-1492-5076-660

Provided is a year round system for athletic development and program success, a detailed blueprint for coaches, including proven methods, and best practices in the pre-season, in-season, post-season, and off season. Research-supported and field-tested prescriptions and protocols can produce more positive results, and a more professional approach to coaching. Use this text as ones go-to coaching guide, and enjoy a more rewarding coaching career, and just maybe some championships along the way.

Application is to all sports, and guides coaches through critical components of continual improvement, while progressing from one season to the next, in the annual coaching cycle. There are many practical exercises and evaluation tools coaches can apply to athletes and teams at all levels of competition.

Promoting Active Lifestyles in Schools



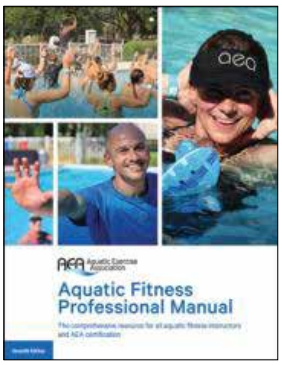
Jo Harris and Lorraine Cale (2019)

Champaign, Illinois: Human Kinetics Publishers
www.HumanKinetics.com
ISBN: 978-1-4925-3381-8

A holistic perspective on physical activity exposes teachers to a broad spectrum of curricular and non-curricular opportunities to enhance pupils' engagement with physical activity as well as tools and resources to do it. Through its research-informed, evidence-based studies from around the world, this book should help teachers broaden their physical activity promotion in school-based environments. Offered are tried and true practical learning activities to help pupils of all ages lead healthy active lifestyles. Clear explanations of current thinking and evidence underpinning practical ideas and activities, helping teachers fully grasp content and depth of the material. Developmentally appropriate procedures to monitor children's health, activity and fitness in school, both as individuals and within a cohort. Best practices, illustrated through a diverse range of case studies, to help teachers connect with the information and help their pupils apply it in real life. An extensive table details health-related outcomes for ages 5 to 16 presented as related to those 7 to 11,11 to 14, and 14 to16 (in terms of safety issues, exercise effects, and health benefits.

Three parts include eleven chapters: Part I Promoting Healthy, Active Lifestyle in UK Schools (3 chapters, each focusing on contributions to promoting healthy lifestyles); Part II Monitoring Health, Activity and Fitness in Schools (3 chapters, each focusing on monitoring health, physical activity, and/or physical fitness in schools); Part III (3 chapters, Health-Related Learning in Physical Education (5 chapters, each focusing on health-related learning for specific age groups: all children, 5-to-7, 7-to-11, 11-to-14, and 14-to16- year olds. Each chapter is introduced with its objectives and concluded with a summary. Included are a glossary, references by chapter, and a helpful index. Specific instructions are provided on accessing the web resource.

Aquatic Fitness Professional Manual (7th Ed.)



Aquatic Exercise Association (2018)

Champaign, Illinois: Human Kinetics Publishers
www.HumanKinetics.com
ISBN: 978-14-9253-3740

A comprehensive and relied upon resource for fitness professionals and facility program managers who specialize in water exercise. Learn how to energize teaching with techniques and programs based on many popular fitness formats, such as kickboxing, yoga, boot camp, Pilates, walking and jogging, circuits, intervals, and sport specific training. Find fitness applications and comprehensive programming needed in one convenient resource to prepare for the AEA Aquatic Fitness Professional Certification exam, and cultivate critical skills for learning safe, enjoyable, and effective aquatic exercise programs.

AEA recommends deck instruction as the preferred method of leading aquatic classes in most situations. Deck instruction provides highest level of safety for participants, by allowing better observations and quicker responses to emergency situations. Deck instruction also provides greater visibility of the aquatic professional to participants, and participants to the aquatic fitness professional. The AEA recommends that the aquatic fitness professional remain on deck when there is no additional lifeguard on duty, there are new participants in the program, or when new movements are being demonstrated.

Fifteen chapters are divided into four parts: Part I Foundations of Fitness and Exercise (5 chapters--Exercise anatomy, physiology, Physical Fitness, Movement Analysis, Exercise Movement and Behavior); Part II The Aquatic Environment (2 chapters: physical laws as applied to the aquatic environment, pool environment and design); Part III Instruction and programming (5 chapters: shallow and deep water exercise, aquatic exercise leadership, aquatic exercise programming, special populations and health conditions (older adults, children and adolescents, pregnancy and postpartum, obesity, musculoskeletal considerations, rheumatic diseases, lower-back pain, cardiovascular disease, pulmonary disease, diabetes, multiple sclerosis, Parkinson's disease, cerebral palsy, cancer). Part IV Safety, Scope of Practice, and Legal (Safety, Emergencies, Injuries, and Instructor health (3 chapters: Basic Nutrition and Weight Management, Business Issues and Legal Considerations (employee versus independent contractor, setting up your own business, insurance, risk management and standard of care, liability, music use in fitness, Americans with Disabilities Act.

Six appendices include A Shallow Water Exercise; B Deep Water Exercise; C Aquatic Exercise Equipment; D. Answers to Chapter Review Questions; E. Instructor Worksheets; F. Sample Class Formats. Detailed glossary and index, plus information about Aquatic Exercise Association are included.

INFORMATION FOR AUTHORS

PALAESTRA, a refereed quarterly (fall, winter, spring, summer) professional journal, deals with all aspects of sport, physical education, recreation, and related activity areas involving participants with disabilities. Information for short fillers and use in departments is encouraged. Submit dates and other details about conferences, seminars, and other training and in-service programs for inclusion are available in *PALAESTRA's* calendar.

The focus of *PALAESTRA* is broad, including practical applications for teaching, coaching, and leading; implications and applications of scientific research for training and teaching; administration, supervision, and management; professional preparation and in-service education; innovative ideas and practices; assessment and classifications; relationships of basic sciences to methods and activities for individuals with disabilities; sports medicine and athletic training applied to individuals with disabilities; equipment and supplies used in these programs; and professional issues and trends.

A double-blind review process is followed rigorously. Manuscripts are reviewed by members of the editorial board and/or other professional specialists representing all topical areas dealt with in *PALAESTRA*. Manuscripts are accepted for review and consideration on the condition they have not been published previously, submitted simultaneously, or accepted for publication elsewhere. *PALAESTRA* will consider manuscripts rejected by other journals. There are no page or illustration charges.

Terminology

Terminology throughout *PALAESTRA* conforms to current accepted usage. Focus is on people, not disabilities (i.e., students who are blind; athletes with spinal cord injuries; participants who have intellectual disabilities; persons who use wheelchairs for mobility are wheelchair users, not "wheelchair bound," etc.). Reference is to individuals with disabilities, not handicaps, handicapping conditions, or impairments. Authors should apply this *person-first* policy in their manuscripts.

Guidelines

The following guidelines are to assist authors in preparing manuscripts to be considered through the *PALAESTRA* review and editorial processes:

- Submit all manuscripts in English.
- Manuscripts must deal with any topic associated with sport, physical education, recreation, dance, and related areas involving participants with disabilities, each interpreted and applied in its broadest way.
- Make the manuscript no longer than 12 to 15 double-spaced pages, with images or tables (8.5 x 11 with margins of at least 1 in.). Include an abstract of approximately 100 words.
- Follow the *Publication Manual of the American Psychological Association* (6th ed.) for all matters of style.
- Include sections with each manuscript (each starting on a separate page) for (a) title page, (b) abstract, (c) text, (d) acknowledgments, (e) selected references, (f) photographs/illustrations/tables, (g) legends/cutline information for photographs and other illustrations, and (h) a brief biographical sketch for inclusion with published article. Number pages consecutively in the upper righthand corner of each page, beginning with the title page.
- Include a cover sheet with author name(s), academic or professional title(s), complete mailing address(es), and e-mail contact information. Do not have names or related information on any manuscript pages that will be sent out for review.
- Submit illustrations—images, drawings, tables, and/or graphs—to give greater impact to content and its presentation. Images/drawings—color prints or black and white prints—of good quality can be considered; digital images are preferred, with a minimum resolution of 300 dpi. If photographs of persons are used, either subjects must be unidentifiable or their pictures must be accompanied by written permission for use. Tables/graphs—number in sequence, cite by number in the text, and include legends for each; double space and place each on a separate sheet; make every effort to send tables and graphs in pdf format so each can be processed directly. Illustrative materials become the property of *PALAESTRA* for possible future use unless instructions requesting their return accompany the submission.
- Please email the following to Martin E. Block, Editor of *PALAESTRA*, at meb7u@virginia.edu:
  - Manuscript in a Word document; there should be no author information on the manuscript
  - Cover letter with author contact information as well as bios of authors
  - Images (jpeg or tif), 300 dpi resolution, with captions for each picture submitted
  - An abstract of the article

For more information or to send a manuscript, contact

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Two Partnerships, One Goal

Sagamore-Venture Publishing is pleased to announce partnerships with The American Therapeutic Recreation Association (ATRA) and The Canadian Therapeutic Recreation Association (CTRA). The partnerships formally bring together three organizations with the same goal: to serve the field of recreational therapy.

These partnerships will generate many benefits for their members, including the following:

- Discounts to individual members on the *Therapeutic Recreation Journal (TRJ)*.
- Members will receive an additional discount on products, including electronic products, on the Sagamore Publishing website, www.sagamorepub.com.
- Availability to ATRA members for the *ATRA Annual* publication that Sagamore-Venture will publish.
- Free electronic subscription to *PALAESTRA*.
- Complimentary access to all *TRJ* issues for ninety (90) days.

These organizations can anticipate many more benefits as our partnerships grow.

"The ATRA Board of Directors is very excited and proud to have this opportunity to work with Sagamore-Venture. This partnership will allow us to continue to publish the exceptional work and research that our recreational therapy professionals provide to advance the profession."
—Marilyn Radatz, ATRA Past-President

"CTRA is very pleased to be entering into this partnership with Sagamore-Venture. We believe our members will greatly benefit from the various resources Sagamore-Venture has to offer and ultimately this endeavor will greatly enhance the profession of TR in Canada. CTRA looks forward to a wonderful working relationship with Sagamore-Venture for years to come."
—Chris Richard & Tanea Goncalves

"Everyone at Sagamore-Venture is thrilled to be working together with ATRA and CTRA. The RT/TR field has always been an important area of publishing personally and for our company and one that we have worked hard to serve. We look forward to serving the needs of the field for many years to come."
—Peter Bannon, Sagamore-Venture President

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