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Virginia Association for
Health, Physical Education,
Recreation, and Dance

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Get out and play!

Photo Credit: Michael Moore, PhD, LAT, ATC

VAHPERD Members,

It is my pleasure to serve as the editor of The Virginia Journal (TVJ) and Communicator. Enclosed you will find the Spring 2020 issue. I hope to continue the successful publications of TVJ and Communicator.

However, the success of TVJ and the Communicator only go as far as the members and our submissions. I ask that you continue to submit the quality work you have in the past. Let the state, region and nation know the outstanding work we are doing in VAHPERD. So this is my continued call for manuscripts for the Fall 2020 issue of TVJ and news information for the Communicator. The TVJ and Communicator depend on the submissions from our exceptional professionals working in the field.

So please continue to e-mail me your manuscripts and news by January 15 and July 15, 2020 as a Word attachment for the two publications. Please follow the manuscript guidelines posted in each issue of TVJ. My contact information is below.

Sincerely,

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About VAHPERD

Mission Statement

VAHPERD is a professional association of educators that advocate quality programs in health, physical education, recreation, dance and sport. The association seeks to facilitate the professional growth and educational practices and legislation that will impact the profession.

VAHPERD Values

- Excellence in teaching, research and educational practices in HPERD and related professions
- Positive efforts to promote our disciplines
- Professional integrity and high ethical standards
- Effective communication within and between members and related professionals
- An active and healthy lifestyle
- Embracing the role of special and diverse populations

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President's Message

Leslie Meadows Norris

Dear Friends,

I hope you all are doing well and staying safe! Serving as President these last few months have been an amazing opportunity and experience. I am thankful for the relationships created throughout this time, for the individuals who are stepping up in huge ways to serve our profession and how we are serving our community during this season of education. This past January, our profession was busy! Your VAHPERD leadership met for our annual leadership conference. We enjoyed our guest presenter, Charity Bryan from Georgia, who helped us learn that we all have different leadership styles and how to best work together! This conference's primary purpose is to plan and prepare to best serve you as members. A perfect fit for this year's annual convention theme: Better Together. The advocacy committee worked hard with our VAHPERD lobbyist to prepare for Speak Out Day in Richmond, VA. We had great conversations and support from several legislators who truly care about the overall wellness of us and our community! Also, we officially announced our partnership with the Special Olympics Virginia (SOVA). This partnership allows for us to work together to increase resources and communication with the broad vision that all students, regardless of ability level, have the opportunity to enhance their physical activity, contribute to the well-being of the school, and model inclusion for the community at large. In February, I was able to represent Virginia at the first Health and

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Executive Director's Message

Henry Castelvecchi

Who would have thought at the beginning of the school year that we would be transitioning from teaching face-to-face with our student to a virtual teaching space? I have seen so many great examples of teachers going the extra mile by delivering work packets to homes of children who couldn't make it to school; delivering vegetable plants to students to continue their education on nutrition and growing their own food; conducting weekly video conferences with students; and drive by parades to see their students off for the year. This has been one of the most difficult years for teaching and teachers have been creative and continue to deliver content to their students. Even though we don't know how the start of the new school year will be, I know that teachers will continue to do the best they can for their students. Thank you for stepping up this year and continuing to teach the children of Virginia through this tough time and for showing them you care, even if you can't be with them in person.

As I close out my 14th year as Executive Director, I would like to thank the members for their support they have shown me. I've made many lifelong friends throughout the years and seen many great examples of dedicated teachers. I am inspired and energized after to listening to teachers at the convention.

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President Elect's Message

Mark Arrington

Greetings VAHPERD members and colleagues. I know we are in the middle of the strangest times many of us have ever been apart of from a professional standpoint, and even more so from a personal perspective.

I hope you were able to grow some lasting connections with students before our school year was abruptly ended. As news has been coming out the executive committee, and especially VAHPERD president Leslie Norris, has been working hard to make sure our members stay informed and we can continue to provide relevant information to keep Virginia students healthy and Virginia teachers informed of best practices.

I personally have been working from home as well as engaging in distance learning with my two son's, Pace and Tavner. It has been trying, and at the same time a learning experience, to see both sides of what education looks like.

I will continue to assist Leslie Norris in any way possible and help her with her motto of "Better Together". Moving forward I want to be someone any member of VAHPERD can feel comfortable reaching out to with suggestions about how to strengthen our association and profession in Virginia. I can be reached at arrington.vahperd@gmail.com

Respectfully Yours,

Mark Arrington

President-Elect, VAHPERD

Past President's Message

Kari Hampton

Dear VAHPERD Members,

What crazy and uncertain times we are living in. Like all of you I have been working with my students and colleagues to stay connected and to keep moving our students forward to be the best prepared future educators they can be. After all of the time apart I know that I for one am ready to be back together in whatever format that may take. As we have been away from our known normal, I hope that you have taken some time to address not only your students social and emotional health but your own as well. Taking time for yourself in whatever form that may be is so important.

Your VAHPERD Board is doing what they can to provide you all with quality learning and growing opportunities and we hope that we can all be together soon as we are "Better Together".

Thank you for allowing me to serve you and I look forward to continuing to serve you.

Kari Hampton

Past President

(Not So) Lucky #7: Tips to Engage Students in an Increasingly Diverse Classroom

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Introduction

The 21st century classroom is becoming increasingly more diverse (Richards, Brown, & Forde, 2004). Diverse classrooms offer many benefits, including identifying the strengths students bring to school and nurturing student ideas to promote student achievement (Teach Thought, 2018). With these benefits come challenges, including reforming the administrative structure, school policies and procedures, and community involvement (Richards et al. 2004). Teacher preparation is a large part of being successful in engaging students. The title of this manuscript begins with the words “not so lucky” because teacher preparation is not about luck, but hard work. This manuscript aims to bridge the gap between the benefits and challenges of diverse educational settings through the use of student engagement, and best practices in preparing physical and health education teachers and teaching candidates to engage all learners. Seven tips to help health and physical education teachers engage students will be covered, including personalizing content, engaging the whole child, writing meaningful objectives, effectively using class time, preparing the classroom, using blended learning, and including student input in lessons.

Personalizing Content

The first way that research tells us to understand the student is to personalize content (Bycura & Darst, 2001). Personalizing content to student interests helps them become more engaged and

leads to higher achievement. Research also indicates that middle school physical education programs are not often personalized, as they are either extensions of elementary programs, or watered-down versions of high school curricula, neither of which is appropriate nor personalized (Bycura & Darst, 2001). Students may respond negatively due to lack of content relatability or personalization in physical education, which can look like apathy toward an activity, or an unwillingness to dress out, participate, or comply with directions (Bycura & Darst, 2001). The lack of understanding of what students need coupled with the hormonal changes can lead to these behaviors. Middle school students need exposure to a variety of activities (Bycura & Darst, 2001). Short units are a solution to motivate students to participate in activities they might not enjoy because the unit will soon change to something they may enjoy (Doolittle, 2016).

Personalized content can be achieved through themes and motifs throughout a unit. Garn, Donetta, & Jenkins (2010) support this, stating that students reported an increased willingness to engage in content when content is shifted to individual interests. An example is a case study of a ‘Health Club’ unit performed by Bycura & Darst (2001). In this study, the unit used the theme of the class being a health club to meet the standards and SOLs of the state. This Health Club approach helped students partake in higher order thinking skills, simply due to shifting the content to more individual interests. Figure 1 shows the schedule for the health club approach (Bycura & Darst, 2001, p. 25). The unit

<i>Lesson Focus</i>	<i>Discussion Topic</i>
Day 1: Aerobic dance exercise	Health-club organization, schedule, and equipment
Day 2: Kickboxing	Background, safety, videotapes, programs available, and basic moves
Day 3: Resistance training	Therapy bands, safety, physical therapy, rehabilitation and travel uses
Day 4: Step Aerobics	Background, safety, videotapes, and basic steps
Day 5: Exercise ball	Coordination, body awareness, personal training as a profession
Day 6: Kickboxing circuit	Alternative class formats
Day 7: Handheld weights	Safety, basic weight-training principles
Day 8: Step interval	Interval training in general
Day 9: Handheld weights	Gym etiquette, creating exercises for specific muscles (in cooperative groups)
Day 10: Class choice from past lessons (voted on earlier in the week)	Favorite activities and why

Figure 1- Sample Schedule for a “Health-Club Fitness” Unit

provided a need for personalization through students choosing what they wanted to personally get from the unit. There was also a connection to what students saw, heard, and read in the media. For example, students evaluated common advertisements for various health clubs trying to make their facilities look state-of-the-art, which made them better consumers (Bycura & Darst, 2001).

Personalizing content also means being culturally responsive. Research by Richards et al. (2004) supports this, claiming that when instruction is incompatible with or marginalizes the students' cultures, and therefore student interests, a disconnect with school is likely. Instruction should reflect the cultural and linguistic practices of all students. If the teacher does not understand their students, some are denied an equal opportunity to learn (Richards et al. 2004). Early stages of culturally responsive content personalization can be achieved through visiting the communities students live in, reading about successful teachers in diverse settings, finding out groups that students belong to (Fisette, 2010), and advocating and participating in reform for the school system (Richards et al., 2004). Incorporating activities that reflect trends, things that are relevant in student culture, or activities related to what students have access to in the neighborhood also helps teachers be culturally responsive and increase engagement (Doolittle, 2016).

Engaging The Whole Child

There are three parts of the whole child and therefore three domains: affective, behavioral, and cognitive (Doolittle, 2016). When teachers prepare lessons that engage the affective, behavioral, and cognitive domains of the student, the decline in physical activity is reduced (Doolittle, 2016).

Teachers can create objectives that target the affective domain through playing upbeat music, being inviting, and greeting students as they enter for class (Wong & Wong, 2018). Teachers who want to go the extra mile can attend students' extracurricular games or performances at school and in the community (Doolittle, 2016). Doing the little things are also impactful to students. These include paying attention to student interactions, creating class routines that put students at ease and encourage respect, and encouraging positive social interaction while doing physical activity (Doolittle, 2016).

The second part of the student that the teacher needs to prepare to engage is the behavioral domain (Doolittle, 2016). Examples of what teachers can do are setting behavior expectations, and rewarding positive behavior and full participation. Assessing student behavior has the potential for teacher bias to affect grades. Removing bias creates an atmosphere of trust, and contributes to students wanting to come to class and be engaged (Hopple, 2018). An objective way to assess student behaviors and hold them accountable is to use heart-rate monitors (Doolittle, 2016). This provides teachers the opportunity to use evidence and statistics for grades.

The final domain teachers need to prepare to engage is the cognitive domain. When planning, teachers should review previous lessons and scaffold on prior knowledge, experience and interests (Graham, Holt/Hale & Parker, 2013). Using checks for understanding, exit slips, or student surveys as an informal

pre or post-assessment (Wong & Wong, 2018). Using a survey can be an important tool at the beginning of the year to find out what students expect to get from the class, ideas they have about the class, and more about them. Teachers should work and prepare to include the findings in lessons throughout the year (Doolittle, 2016).

Meaningful Objectives

A study on the top ten reasons students do not enjoy physical education supported telling students the objectives because they make activities relevant and give purpose to doing activities (Hopple, 2018). Wong & Wong (2018) support this theory and informs readers that success is achieved when teachers write lessons with clear objectives and precise instructions so that students understand what the outcomes or result of the lesson will be. Activities are not objectives, but a means for students to achieve objectives (Wong & Wong, 2018). To reduce confusion about why students are doing a daily task, Wong & Wong (2018) suggest teachers use clear and succinct phrases indicating what is to be achieved. According to Harrison, Blakemore, & Blake (2009) generation Y is more successful when there is an explanation and purpose to what students are doing. If students who do not enjoy team sports but enjoy debate understand that they will be working on communicating effectively, for example, they will be more inclined to participate fully and enjoy the activity.

Student confusion about what they are learning during a class period also leads to a disconnect in student achievement. A recent study provided qualitative data showing this disconnect, "I suppose you could say we are learning to exercise or something, but I don't know" a student reports (Garn et al., 2010, p. 234). Telling students specifically what they are learning leads to higher engagement and participation in classes (Wong & Wong, 2018). When students are told the daily class objectives in a lesson introduction, student achievement can be raised as much as 37% (Wong & Wong, 2018).

Effective Use of Class Time

Teachers feel that the amount of time allocated for physical education instruction is not enough for all students to develop skill mastery, so they use school resources to advocate for more opportunities for enjoyable physical activity (Doolittle, 2016). Teachers can choose to advocate for more time and space depending on their schedule, including before and after school opportunities (Doolittle, 2016). Teachers have the ability to prepare and arrange for multiple inclusive extracurricular activities to combat the lack of time through drop-in fitness workouts, movement and skill exploration activities, dance club, or intramurals. Although there is often a lack of allotted class time, research shows that teacher preparation leads to higher student achievement and engagement in the time allotted (Doolittle, 2016). Rink & Hall (2008) report that teachers who do not plan appropriate practice time, therefore do not allow for mastery learning, leading to a top cause for student failure. Teachers' effective preparation of the lesson's flow leads to student engagement and achievement. Coker (1999) provides examples of solutions to Rink & Hall's posed problem, including

planning effective transitions, optimizing instructions, and having more than one activity or game going on simultaneously.

Preparing the Physical Classroom

Teachers should prepare their classroom and gymnasium to reflect active learning. Prince (2004) explains that active learning is generally described as methods of instruction that engage students in the learning process, requiring students to take part in meaningful learning activities and think about what they are doing. Rands & Gansemer-Topf (2017) support Prince by stating that the traditional classroom set up with the teacher at the front of the class is not best practice for facilitating student learning. This is applicable to health teachers when planning their classroom organization. When prepared for and implemented correctly, classroom seating arrangements affect communication, concentration, and cooperation (Wong & Wong, 2018).

Seating arrangements and assignments, though often used interchangeably, are actually different (Wong & Wong, 2018). Seating arrangements are how seats are set up to facilitate learning, whereas seating assignments are the specific seats students will sit in (Wong & Wong, 2018). Seating arrangements take priority for organizing before seating assignments, according to Wong and Wong (2018). Teachers should arrange seats to coincide with the specific task or activity prepared, and then assign seats to maximize learning and classroom management, and to minimize behavioral problems (Wong & Wong, 2018). Figure 2 helps describe reasons for both assignment and arrangement (Wong & Wong, 2018). In the gymnasium, similar feats of arrangement and assignment can be achieved through preparing where equipment is set up, how partners will be selected, and what arrangement will help students achieve most based on the activities (Mitchell & Walton-Fisette, 2016). Mitchell and Walton-Fisette (2016) also state that arranging and grouping students by ability allows for mastery teaching, leading to higher achievement.

Blended Learning

Blended learning involves face to face interaction with students while integrating technology into teaching content (Longo, 2016). Using blended learning provides a differentiated method of accommodating diverse learning styles, allowing for increased chances of personalization and targeting all domains of the student (Longo, 2016). When giving face to face instruction, teachers should be inviting (Wong & Wong, 2018). Inviting teaching behaviors include utilizing positive verbal comments, smiling, making eye contact, giving high fives, and having a positive class atmosphere where students are free to make

mistakes and practice resilience (Wong & Wong, 2018).

The integration of technology is the second part of blended learning. Incorporating technology for blended learning creates more opportunity for collaboration in cooperative groups, including the gathering of feedback from both the teacher and peers, and self-assessment and reflection for students (Longo, 2016). Using the versatile available tools of Google Drive, one example being Google Hangout chats, gives students a chance to engage in higher level thinking activities. To do this, however, teachers need to learn how the tools work, and how activities will incorporate the technology so they can appropriately explain and guide learning (Longo, 2016). Other tools like Google Forms and Google Sheets can easily be used in both health and physical education settings. Apps such as QR scanners, Sworkit, and GooseChase are also recommended for blended learning in both health and physical education (Longo, 2016). While the use of blended learning has research-based positives, there are some cautions to consider for implementation (McCarthy & McCarten, 2015). Training teachers to appropriately and effectively implement this type of program is not always school district supported or consistent (Longo, 2016). Another drawback is the lack of access and connectivity some students may have, leading to unfair disadvantages for learning material (Longo, 2016). Figure 3 shows various ways to include blended learning and if the instruction is technology based, online, or face to face (Longo, 2016).

Student Input

Understanding students means knowing where they come from and what groups they belong to (Garn et al., 2010). Teachers can visit the communities in which students live, and read about successful teachers in diverse settings. School systems are sometimes biased against particular students, so advocating for a culturally inclusive curriculum, and participating in reform in the school system are positive ways to respond to the information you learn about your students (Garn et al., 2010).

Student input takes many forms, and using this can help teachers facilitate student learning and achievement. One form of input is student choice. Wong and Wong (2018) write that when students are given choice in what they learn, it offers them a chance to take responsibility for their learning. Giving students choice means that content is already personalized because students choose what they want to learn, and therefore are less likely to be off task or apathetic toward content, and more likely to participate fully and comply with teacher directions.

Seating Arrangements	Seating Assignments
Cooperative learning	To help English language learners with others who speak the same language
Small group activity	For peer-group tutoring
Taking a test	Paired problem solving
Individual work or research	Lower-performing and more challenging students at the front of the room

Figure 2 - Reasons for seating arrangements versus assignments

<i>Element</i>	<i>Nature of Instruction</i>	<i>Characteristics</i>
Guided Discovery	Face to face	Mode of instruction
Online Journals	Online	Choice of activities
Differentiated Assignment	Face to face	Support and challenge
Blogs/Forums	Online	Collaboration
Web Quests	Online	Engagement and choice of activity
Partnerships	Face to face	Engagement and collaboration
Interactive tutorials	Face to face or online	Engagement and choice of activities

Figure 3- Blended Learning Implementation

In a study by Hopple (2018), it was found that students listed physical education as lacking enjoyment and focused too heavily on competition. Teachers can use this information to better their classes by learning what exactly students enjoy, and offering student choice in lifetime physical activity offerings. Studies like the Hopple (2018) research provides key insight into understanding the student and how to help them enjoy physical education and activity.

Conclusion

As identified by research, the increasingly diverse classroom needs teachers who understand who their students are, and are prepared to teach all parts of the modern student (Richards et al. 2004). The article offers ideas to pre-service and in-service teachers, as well as districts and teacher preparation programs, about bridging the gap between the benefits and challenges of diverse educational settings. This bridge comes to life through the use of student engagement strategies, and a focus on meeting the needs of all learners. Teachers can learn and use various strategies and methods depending on the needs of their classroom, including personalizing content, engaging the whole child, writing meaningful objectives, effectively using class time, preparing the classroom, using blended learning, and including student input in lessons.

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Resting Energy Expenditure and Respiratory Quotient, One and Six Hours, Following Five Modes of Exercise: A Case Study

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Emma Harnett, ATC, Athletic Trainer, Culpeper High School

ABSTRACT

The purpose of this study was to use one subject to determine which mode of exercise most affected resting energy expenditure and respiratory quotient one-and six-hours post-exercise. The subject was in a state of detraining and completed five different exercise bouts: standard aerobic (AE), interval (INT), traditional resistance training (TRT), nontraditional resistance training (NRT) and high intensity interval training (HIIT). Baseline data was collected following a two-hour fast and abstinence from exercise for 72 hours. Volume of oxygen (VO_2), respiratory quotient (RQ) and respiration rate (RR) measurements were collected one-hour and six-hours following each bout of exercise. Following each bout, the subject abstained from any physical activity for 72 hours before engaging in the next exercise bout. The two aerobic-based and two resistance training exercise regimens were estimated to achieve the same level of fatigue, based on intensity and duration to allow for adequate comparisons among the types of training. Due to its unique qualities (e.g. combining aerobic and anaerobic training), the HIIT regimen was considered a third type of training. However, the data of all five regimens were analyzed and compared. Volume of oxygen (VO_2) increased one-hour post-exercise for all but the two of the resistance training regimens but was inconsistent 6-hours post. The RQ results varied with mode and post-exercise time. Explanations for these discrepancies in the data are provided and practical applications for fitness professionals are offered.

Key Words: respiratory exchange ratio, resistance training, Crossfit,

INTRODUCTION

Metabolic responses in the recovery period of exercise, in particular the respiratory quotient (RQ) and excess post-exercise oxygen consumption (EPOC), has long been an interest of researchers. The RQ and EPOC provide insight into the metabolic changes that occur as a result of exercise, and further, both may be a factor in why fitness professionals and exercise clinicians encourage certain exercises, workout regimens or weight management programs.

The RQ, sometimes referred to as the respiratory exchange ratio (RER) compares the amount of carbon dioxide expelled to the amount of oxygen consumed at any given minute. This concept accurately describes what type of substrate is being oxidized, whether it is fat or glucose. The RQ is simply a ratio of CO_2 and O_2 , the end product is a number between 0.70 (100% fat) and 1.00 (100% glucose) (Ferrannini, 1988). The RQ is often an interest to researchers since it directly reflects the percent of fat expenditure which is relevant to the obesity epidemic, and is one of the major parameters studied in this research.

Following any exercise, there is an increase in the consumption

of oxygen, sometimes for hours following the workout. This phenomenon is called excess post-exercise oxygen consumption (EPOC) and is another major parameter of the current study. A direct relationship has been established between EPOC and energy expenditure due to the fact energy expenditure is related to the amount of oxygen the body is utilizing (Borsheim & Bahr, 2003; Gore & Withers, 1990, Sirithienthad, 2006). It is believed that EPOC is just one of many contributing factors including, but limited to restoring the phosphagen system, replenishing hemoglobin and myoglobin, lactate removal and lipid oxidation (Sirithienthad, 2006).

Over the years, several studies have investigated the effect of exercise on EPOC and resting RQ. For example, RQ has shown to be manipulated, decreasing on the 0.70 to 1.00 scale at rest (thus higher fat oxidation) in pre and post-exercise studies, following HIIT, cycling, running and resistance training for up to 72-hours post exercise (Astorino & Schubert, 2018; Cipryn, et al., 2018; Heden, 2011; Jamurtas, 2004; Warren, Fell, & Johnson, 2009). Further, EPOC is higher in aerobic exercise subjects, especially with an increase in intensity and/or duration (Borsheim & Bahr, 2003; Gore & Withers, 1990; Short & Sedlock, 1997; Townsend, et al., 2013), with Sirithienthad (2006) suggesting that intensity is the single most influential factor. The mode of aerobic exercise seems to make little difference while resistance training appears to have the greatest impact on EPOC (higher) and RQ (lower) when sets are increased and rest time is decreased or when repetition speed is quicker (Barreto, 2010; Farinatti, P, & Castinheiras Neto, 2011; Kelleher, 2010). Training status and sex may lead to some inconsistent RQ and EPOC findings.

In particular, HIIT makes notable increases in EPOC as well, but is generally more transient, perhaps due to its relatively brief workout duration (Kelly, King, Goerlach, & Nimmo, 2013; Matsuo, et al., 2012). While the options regarding the mode, duration, and intensity of HIIT are infinite, workouts often combine plyometrics, intense cardio, power exercises, and non-traditional exercises (e.g. Farmer's Walk, tire flips, and kettlebell training), with very little to no rest between sets. Generally, workouts are between 12 and 25 minutes.

Due to the overwhelming popularity HIIT (e.g. voted number one trend of 2018; see Thompson, 2017), the metabolic-related research on this type of exercise has naturally increased, but is far from complete. Therefore, the purpose of this study was to use one subject and examine the type of exercise that has the greatest impact on RQ and EPOC directly following various modes of aerobic, anaerobic (resistance training), and a typical HIIT workout. We hypothesized that there would be a higher oxygen uptake and slight changes in RQ one- and six-hours post exercise as result of aerobic training, anaerobic training or a combination of both, with perhaps the biggest change occurring as a result of HIIT.

While not ideal in most instances of exercise science research, case studies in the field are not uncommon (Castagna, D'Ottavio, Granda-Vera, & Barbero-Alvarez, 2009; Rossow, Fukuda, Fahs, Loenneke, & Stout, 2013). Further, general conclusions can be made from our one-subject protocol, and may help researchers who desire to replicate this study using a larger sample population.

METHODS

Subject

The subject was a 21-year-old male, NCAA Division II athlete. At the time of data collection, the subject weighed 169 pounds and was 5'11" and obtained a Max VO₂ value of 51. The subject concluded his final season with the soccer team six weeks prior to data collection and did not participate in other notable forms of training in that span, and thus was in a detrained state.

Procedures

Excess Post-Exercise Oxygen Consumption, Respiratory Quotient, and Respiration Rate. For baseline data collection and all post workout data collection sessions, the subject used a nose clip, pneumotach, mouthpiece, and umbilical clip attached to Medgraphics Ultima metabolic cart. A breath-by-breath pulmonary exchange system collected the EPOC, RQ, and RR for 40 minutes, using only the mean of the data collected between the 30 and 40-minute marks.

Baseline data collection. Three days prior to the first test session, the subject entered the lab in the early morning, as close to the anticipated time that the other data collection sessions would take place. The subject was in a fasting state and engaged in the least amount of activity possible (no more than was necessary such as walking to his car from his apartment and walking to the lab) prior to data collection to insure that the baseline data accurately portrayed his body at rest. Upon arrival, the subject immediately took the supine position to record the appropriate data. After completion of the baseline data collection, three standard spirometry tests (slow vital capacity - SVC, forced vital capacity - FVC, and maximal voluntary ventilation - MVV) were administered to ensure lung health was not an issue.

Aerobic Workout 1. The first bout of aerobic exercise (AE) consisted of a 40-minute run at 75% of the subject's target heart rate after a 5-minute warm-up. A cool down period was implemented until the subject's heart rate was sub-100 bpm. The exercise heart rate was determined in accordance with the American College of Sports Medicine (ACSM) heart rate reserve (HRR) formula. A heart rate device was used to monitor beats per minute.

Aerobic Workout 2. The aerobic interval (INT) consisted of 2-minute intervals at 60% of target heart rate (THR) with 1-minute intervals at 80% of THR for a total of twenty minutes. The subject had a 5-minute warm up and was considered cooled down when his heart rate was sub-100 bpm. A heart rate device was used to monitor beats per minute.

Anaerobic Workout 1. This protocol featured traditional resistance training (TRT), with a standard of 3 sets of 10 repetitions of the major muscle groups which included pectorals (bench press), deltoids (shoulder press), latissimus dorsi (overhead pulldowns), biceps (standing curls), triceps (pressdown),

quadriceps (leg extension), hamstrings (leg curl) and calves (calf raises). There was a 2-minute rest interval between each set and between each exercise. The resistance for each exercise was determined the week prior to data collection to ensure the subject could complete 8-12 repetitions successfully (as prescribed by ACSM) and to near or complete exhaustion.

Anaerobic Workout 2. Using the same exercises and first-set resistance as Anaerobic Workout 1, following the first set, weight was dropped by 20% and the subject performed another 10 repetitions immediately, with rest time being no longer than 10 seconds (NRT). This was process was repeated when the subject completed the next 10 repetitions. In total, the subject performed 3 sets of 10 without rest between the sets but was then allowed a 1-minute resting period between exercises. This exercise bout is informally referred to as "drop sets" or "peel downs".

High Intensity Interval Training. A 20-minute Workout of the Day (WOD) was selected from the Crossfit program (HIIT) for the final exercise protocol. Note that many Crossfit establishments post the day's workout on social media, and thus is how we retrieved this particular workout. The subject started by running 400 meters, followed by one box jump (70 cm), one pull-up, one box jump, three pull-ups, one box jump, then five pull-ups. This sequence, starting again with the 400 meter run, was repeated until time was completed.

To establish true rest, it is important to note that there was at least 72-hours between workouts.

RESULTS

Excess Post-Exercise Oxygen Consumption. The TRT workout six-hours post-exercise and Crossfit workout one-hour post-exercise had obvious but statistically insignificant VO₂ increase ($p = .058$; $p = .617$). Overall, INT was the only exercise to keep VO₂ levels elevated both one and six-hours post-exercise. Both anaerobic workouts dropped below baseline levels at one-hour post-exercise but increased at six-hours post-exercise.

Respiratory Quotient. There were significant changes in the RQ between all exercises one- or six-hours post ($p_1 = 1.29E-4$; $p_6 = 5.95E-5$). AE one-hour post-exercise, TRT one and six-hour post-exercise, and HIIT workout six-hour post-exercise showed an increase in the respiratory exchange ratio, utilizing carbohydrates noticeably more than fats. NRT both one and six-hours post-exercise proved to be the most efficient at decreasing the RQ ($p = .0001$; $p = 5.95E10$).

Respiration Rate. Both one- and six-hour post exercise showed an increase the RR ($p_1 = 6.02E-8$; $p_6 = 4.88E-8$) with the exception of INT 6 hours-post.

DISCUSSION

The main purpose of this study was to compare modes of training and their impact on post-exercise metabolic parameters with particular attention being paid to the responses of HIIT. The HIIT program was chosen as an exercise mode due to its rising popularity among recreational and serious athletes while the other four modes of exercise were chosen because they are fairly common in practice. In reality, our goal was to determine if HIIT caused a greater oxygen-related response than more traditional forms of exercise. It is important to note that there are numerous

Workout	VO ₂ (mL/kg/min)	VO ₂ (mL/min)	RQ	RR
Baseline	3.695	281.641	0.8672	6.915
AE 1h post	3.823	291.246	0.9532	12.660
AE 6h post	3.682	280.717	0.8588	11.289
INT 1h post	3.816	290.821	0.8645	8.306
INT 6h post	3.755	286.800	0.8780	6.657
TRT 1h post	3.418	260.224	0.9300	10.452
TRT 6h post	3.718	283.529	0.9610	11.140
NRT 1h post	3.418	260.358	0.8509	12.299
NRT 6h post	4.011	305.748	0.8479	12.398
HIIT 1h post	3.920	298.142	0.8715	13.516
HIIT 6h post	3.588	273.496	0.9740	13.004

Table 1. VO₂, RQ and RR pre and post exercise, and total (n=1)

ways to engage in HIIT, through other public establishments than Crossfit, textbooks, and on-line sites.

Results for both aerobic workouts were expected. Research has shown that immediately following aerobic training, EPOC increases (Borsheim & Bahr, 2003; Gore & Withers, 1990; Short & Sedlock, 1997; Sirithienthad, 2006; Townsend, et al., 2013), then tapers off quickly unless the training was long in duration and harder in intensity. The body goes into oxygen debt to provide the body the oxygen it needs to transition from exercise to rest. The AE showed a spike in O₂ one-hour post-exercise. By hour six, the body had fully recovered and O₂ levels returned to baseline. The INT data showed a similar pattern, confirming that duration and intensity are major factors that contribute heavily to energy expenditure both during and immediately following exercise (Farinatti & Castinheiras Neto, 2011; Kelleher et al., 2010). In fact, even after the six-hour mark for INT, O₂ levels had not fully returned to baseline.

The current study supports much of the literature and demonstrates the practical benefits of training, regardless of the type, intensity and duration of the exercise protocol. Training tends to affect EPOC, even 24- or 48-hours post-exercise. Each mode of exercise also impacted the RQ, but it tended to vary among the protocols. Both EPOC and RQ are of particular interest to exercise physiologists and fitness professionals alike since so many clients are concerned with overall caloric expenditure as well as the desire to maximize fat-burning.

One of the most interesting pieces of data from our data was the drop of the oxygen one-hour post both resistance-training sessions, yet a greater volume of oxygen six-hours post, which may be due, in part, since there may not be a direct relationship between oxygen consumption and the amount of glucose being oxidized as Scott (2011) has theorized. That is, the amount of O₂ consumed may not be directly explaining the amount of work being done in the body.

It is also important to note the status of the subject at the time of testing. Although an avid exerciser, the subject was in a state of mild detraining, due to a recent out-of-country school related trip. Therefore, during the three weeks leading up to the study, the subject had not worked out on a regular schedule, thus demonstrating the effect of detraining and lower maximal uptake (Coyle, 1984). As the time progressed during the study, the subject's fitness level may have improved slightly, and thus

improving the ability to utilize more oxygen, possibly skewing the data.

Due to a restricted budget, time constraints, and difficulty in recruiting multiple subjects, our major limitation was that we used only one subject. A case study disallowed comparisons to be made to other subjects' data engaging in the same exercise protocol. However, the hope is that this study can help add to the literature and motivate other researchers to duplicate these protocols with a larger sample size.

CONCLUSION

The intent of the present study was to add to the RQ and EPOC literature as it relates to various exercise modes, including HIIT. Our data solidify the theory that HIIT programs, such as Crossfit, as well as other traditional modes of aerobic and resistance training exercise regimens are effective in increasing EPOC and manipulating RQ upwards, at least up to an hour. Although a change in RQ for HIIT and weight training bouts following exercise did occur, a complete representation of change in metabolics may not have been fully revealed due to the mysterious nature of muscle repair and recovery. Regardless, EPOC changes are obvious in most cases of exercise, and understanding this concept may be helpful for individuals who are concerned with weight management, improving muscle size, and wishing to live a healthy lifestyle. In addition, the limited time it takes to complete a traditional HIIT exercise bout may be appealing to many who struggle with finding time to be active. While we concede that further research needs to be developed on the topic, HIIT programs have quickly become a respected and valuable mode of exercise.

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President's Message

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Physical Literacy Summit in Birmingham, AL. It was amazing to see Virginia represented so well at the Summit. The presentations spanned from research to practical application to fitness based learning. We even had some of Virginia's finest presentations! Y'all would be proud! In April, the VAHPERD leadership compiled a list of virtual online resources to best serve your communities during extended school closures. Please visit www.vahperd.org under the resources tab to view! We are continuing our work and trek to the annual convention in November. The 2020 VAHPERD Convention will be in Reston, VA. This is the 83rd year for our annual conference. This year's theme, "Wellness is Better Together!" is designed to focus on not only individual strengths but highlight how we each bring something unique to the table. Please mark your calendars for November 6th-8th, 2020 and join us for the best professional development opportunity of the year! Cannot wait for November? Want to get plugged in sooner? There are many different ways to participate within the VAHPERD organization. Please email info@vahperd.org for more information. I look forward to continuing the march to November and serving you!

Leslie Meadows Norris

Executive Director's Message

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I've greatly enjoyed and appreciated the opportunities I've had to be a leader in this association and the chance to represent the Health and Physical Education teachers of Virginia. I have recently accepted a position as the Health and Physical Education Specialist in Chesterfield County. I will be transitioning out of this position as the new Executive Director is hired, but will still be involved in VAHPERD activities. Thank you again for your support and I look forward to seeing you in the future.

Henry Castelvechi

Social Benefits of Students with Congenital Hydrocephalus Participating in Recess

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Introduction

The participation of a student with Hydrocephalus in recess can be both challenging and rewarding for both the student and teacher. Recess may be a small part of the school day but its contributions to a child's social well-being are immense (Kovar et. al., 2012). To increase the understanding of Hydrocephalus, this paper will define the disorder as well as address its prevalence, causes, and characteristics. It will also address the disorder as it relates to special education law. Lastly it will provide a description of the social benefits of recess for children with Hydrocephalus as well as modifications to increase the recess experience for children with the disorder.

Definition and Prevalence

Hydrocephalus is "the buildup of fluid in the cavities (ventricles) deep within the brain. The excess fluid increases the size of the ventricles and puts pressure on the brain." (Mayo Clinic: Hydrocephalus: Overview, 2019, p.1). Cerebrospinal fluid (CSF) normally flows through the ventricles and "bathes the brain and spinal column." Hydrocephalus can occur when the pressure of the CSF increases to an abnormally high level. This high level of pressure has negative effects as it can damage brain tissues and cause a variety of impairments in brain function. (Mayo Clinic: Hydrocephalus: Overview, 2019).

Congenital Hydrocephalus affects approximately one million people in the United States. Approximately one out of every 500 babies in the United States is born with the disorder. This may be caused by an infection in the mother during pregnancy, such as rubella or mumps, or a birth defect, such as spina bifida (Medical News Today, 2017). Hydrocephalus is the most common reason for brain surgery in children (Hydrocephalus Association: Facts and Stats, 2019). As noted in Block (2016), the condition is usually treated within the first few weeks of birth. The most common treatment for hydrocephalus is surgically inserting a pressure-release shunt, basically a drainage system. It consists of a long, flexible tube with a valve that keeps fluid from the brain flowing in the right direction and at the proper rate. This tube is implanted under the skin and allows excessive cerebrospinal fluid to be drained to an area such as the abdomen where it can easily be absorbed. The tube must be monitored on a regular basis (Hydrocephalus Association, 2019).

Causes of Hydrocephalus

The National Institute of Neurological Disorders and Strokes (NINDS) notes Hydrocephalus causes may be genetic or acquired. What are the genetic causes of hydrocephalus? The answer is not completely known. Genetic abnormalities can be and complications of premature birth also could be a cause. NINDS states:

Hydrocephalus may be congenital or acquired. Congenital hydrocephalus is present at birth and may be caused by either

events or influences that occur during fetal development, or genetic abnormalities. Acquired hydrocephalus develops at the time of birth or at some point afterward. This type of hydrocephalus can affect individuals of all ages and may be caused by injury or disease (NINDS, 2019, p. 1).

Characteristics of Hydrocephalus

Children with Hydrocephalus include a variety of factors including physical, cognitive and emotional items. The list below includes possible items that the child may exhibit if suffering from this disorder.

- severe headaches, often with nausea and vomiting
- blurred or double vision
- problems with balance
- trouble looking up when the head is facing forward
- problems with coordination
- trouble standing or walking
- loss of bladder control
- extreme tiredness
- irritability for no apparent reason
- delays in reaching developmental milestones
- trouble remembering and focusing
- sudden changes in personality (Boston Children's Hospital, 2019, p. 1)

Special Education: Hydrocephalus

The Individuals with Disabilities Education Act (IDEA) states that children who are determined to have disabilities receive special education services if the condition negatively affects the educational performance of the child. One such category of IDEA, which includes an "umbrella" of disorders, is Other Health Impairments (OHI).

Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that—

(i) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and

(ii) Adversely affects a child's educational performance. [§300.8(c)(9)] (CFR §300.7 (a) 9) (IDEA, 2004).

As noted, a child with Hydrocephalus displays serious signs and symptoms. These items can easily affect the education of a

child. Hydrocephalus, when it does affect a student's educational performance, could be classified in more than one IDEA category with the OHI category being the mostly likely.

Possible Social Benefits of in the Recess Setting for Children with Hydrocephalus

Simply stated, the benefits of the recess setting are high for all children. In terms of social benefits, the proper organization of recess, including well-organized inclusion can potentially lead to the following:

- All children are able to be part of their community and develop a sense of belonging and become better prepared for life in the community as children and adults.
- The expectations of all the children are higher. Successful inclusion attempts to develop an individual's strengths and gifts.
- It allows children with Hydrocephalus to work on individual goals while being with other students their own age.
- It fosters a culture of respect and belonging. It also provides the opportunity to learn about and accept individual differences.
- It provides all children with opportunities to develop friendships with one another. Friendships provide role models and opportunities for growth (New Brunswick Association for Community Living, 2017).

Recess Modifications for Children with Hydrocephalus's

To achieve the aforementioned goal of obtaining social benefits often associated with recess, a few procedures should be put into play. The following recommendations should be considered and included only if the Individualized Education Program team, including the student's doctor and parents, is comfortable with their implementation. If possible these activities can be done with other students – for social gains - if the student with the disability is comfortable.

- Modifications can be made on rules of the game (e.g. no contact)
- Modifications can be made on equipment (e.g. softer balls)
- Children with Hydrocephalus, with help, can run and jump and use the apparatus in the gym. However, they may need help with balancing from a teacher and should not hang upside down (e.g. from wall bars) for any length of time.
- Jogging can often be allowed.
- Swimming can often be allowed.
- Depending on the placement of the shunt, twisting actions as in aerobics and some dance should not allow.
- Contact Sports activities/games/sports should not be allowed to be played (nor should be played with any students because of the possibility of injury)
- Water should always be available as controlling body temperature can be a problem. This should be remembered in hot and cold day for all students.

Conclusion

The participation of a student with Hydrocephalus in recess can often be both challenging and rewarding for both the student and teacher. The rewards can manifest themselves in the ability of the teacher to guarantee the student's social gains. This manuscript has hopefully addressed some basic concerns and solutions to improve the inclusive recess setting of students.

Disclaimer: This manuscript is for informational purposes only. The information provided on this manuscript is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

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Playing with your Brain: Integrating Brain Activities into Physical Education

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The human brain has a “consistency somewhat like Jello: soft and squishy” (Voytek, 2013, para. 2). Despite its apparent fragility, it is a complex organ that controls almost all physical and mental thoughts and actions. In the Physical Education classroom, students in grades 3 and older have the opportunity to literally light up their brains and bodies with this action game.

Introductory lessons will need to be provided on brain function, pulse rates, My Plate food groups and other possible items in each station activity.

The cerebrum is divided into four lobes make up the general structure of the brain; Frontal Lobe, Parietal Lobe, Temporal Lobe and Occipital Lobe (Anatomy of the brain, 2018).

Frontal Lobe

Starting in the front of the head rests the Frontal Lobe. Sometimes referred to as the executive functioning center, it does not fully come on line until the mid-twenty years of age. The Frontal Lobe’s primary responsibility involves problem solving. (Anatomy of the brain, 2018)

Parietal Lobe

From front to back the Parietal Lobe bisects the right and left hemispheres. Movement, taste, temperature and touch are involved in this lobe. (Anatomy of the brain, 2018)

Temporal Lobe

Auditory function and memory occur in the Temporal Lobe. (Anatomy of the brain, 2018)

Occipital Lobe

Located at the back of the brain, this lobe is responsible for processing visual information from the eyes. (Anatomy of the brain, 2018)

Cerebellum

Located at the lower, back part of the brain, the cerebellum responsible for balance and muscle coordination. Attached to the Cerebellum is the Brain Stem, including the spinal cord filled with cerebrospinal fluid for electrical function. (Anatomy of the brain, 2018)

Brain Stem

The brain stem houses the roles of blood pressure, cardiac and respiratory functions. There are additional parts of the brain that include the Thalamus³ (transmits auditory, visual, tactile and gustatory signals), Hypothalamus³ (hunger, thirst and temperature sensations), Amygdala (fear, anger), Pituitary and Hippocampus³ (long term memory and emotional response). It was once thought

that each center operated independently of each other. However, newer research has identified a more complex relatedness among all parts of the brain. (Anatomy of the brain, 2018)

The Brain Game (McKeown & Pankau, 2019)

The Brain Game is designed as a rotating station lesson with one partner, or a small group of students, that interrelates to accomplish the entire Brain Game. Each station activity relates to the nine brain areas listed above.

Station #1, Frontal Lobe (Problem Solving, Movement)

Using problem solving skills, students must build a dome using six hoops. Time permitting, attempt to crawl through the dome without it collapsing.

Station #2, Parietal Lobe (Movement, touch)

Place hand into the container of water beads, or other tactile objects. Other variations could include tossing other tactile objects, such as small rubber balls, rubber animals, back and forth with a partner.

Station #3, Temporal Lobe (Auditory, Memory)

One partner reads instructions and the second partner performs the action (i.e., “put one are straight above head....”). Partners then switch places.

Station #4, Occipital Lobe (Vision)

Using pictures depicting stances or movements, one partner describes the picture and the second partner mimics the description (i.e., athletic pose). Partners then switch places.

Station #5, Brain Stem (Heart Rate, Breathing)

Older students check their own resting pulse count for six seconds. Then each does jumping jacks for 30 seconds and re-checks pulse rate. Younger students check resting pulse rate speed, perform 15 jumping jacks or jog in place and re-check pulse to compare speeds.

Station #6, Cerebellum (Balance)

Partners take turns walking low balance beam or long rope on the floor. Other balance objects can be used such as half domes, Bosu balls or balance walkers.

Station#7, Hippocampus (Long term memory)

Similar to the card game “Memory,” Make a 3x3 grid of paper plates. Plates are used to cover photos, animated pictures, parts of the brain, etc. Partners take turns looking under a plate. When a partner can remember where the matching object is located they remove it and the first matching object from under the plate.

Station #8, Thalamus and Hypothalamus (Thirst, Hunger)

Partner take turns selecting a food group card and start building their My Plate (protein, dairy, vegetable, grain and fruit).

Station #9, Synapse (electricity, memory)

Using two scooters and one long rope, one partner sits on scooter and holds one end of the rope. Second partner sits on the floor about 8' away. Using the other end of the rope, the seated partner will pull the "scooter" partner and toward them. The students replicate the two neurons (brain cells) attached with the axon (long rope), creating electricity (pulling action) to cross the synapse to the second neuron (pulling partner).

Floor Pattern

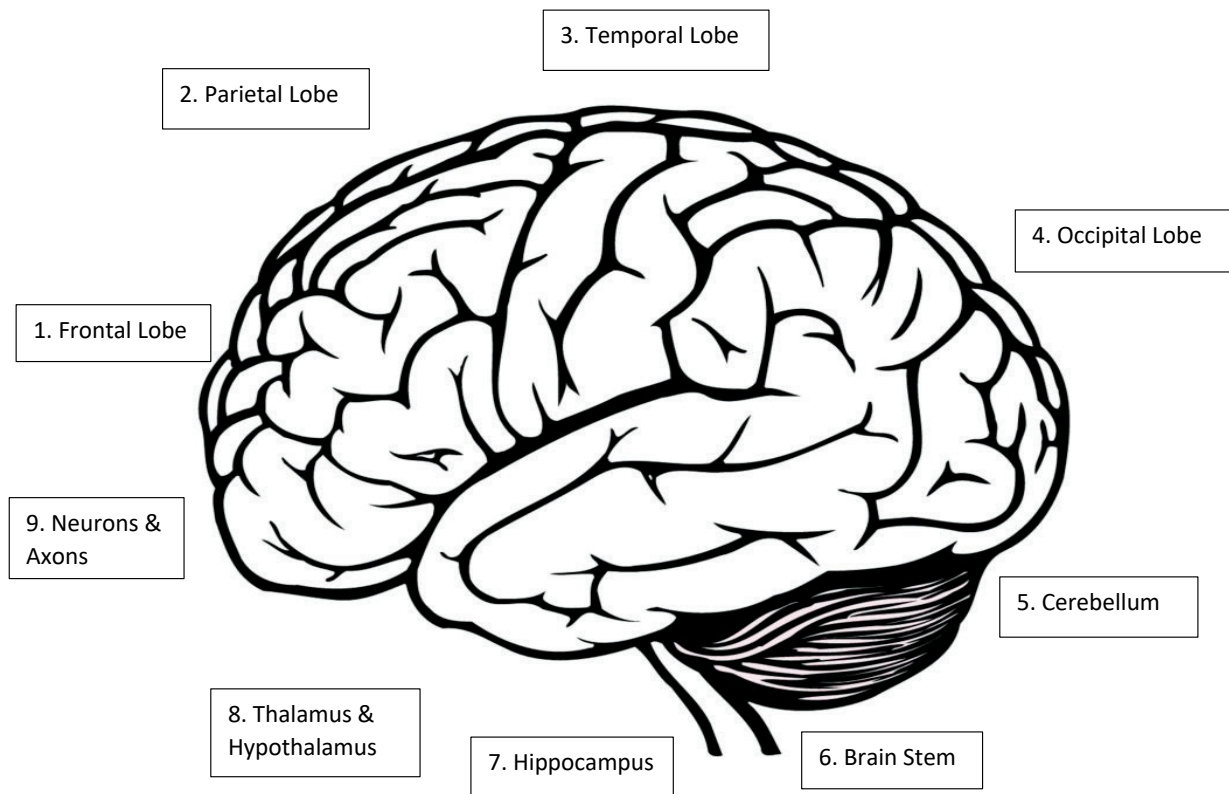
It is suggested the nine obstacle stations be arranged in clockwise formation. Or for more brain shape authenticity, arrange

the stations to coincide with the various locations of the lobes and parts of the brain:

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Station #1,	LEFT SIDE	FRONTAL LOBE
Station #2,	CENTER TOP	PARIETAL LOBE
Station #3,	CENTER	TEMPORAL LOBE
Station #4,	CENTER RIGHT SIDE	OCCIPITAL LOBE
Station #5,	LOW RIGHT SIDE	CEREBELLUM
Station #6,	FAR LOWER RIGHT	BRAIN STEM
Station #7,	CENTER LEFT	HIPPOCAMPUS
Station #8,	LOW LEFT SIDE	THALAMUS AND HYPOTHALAMUS
Station #9,	Open space in the room	NEURONS AND AXON



Utilizing Sportable as a Resource for Education and Awareness: The Benefits of a Disability Awareness Workshop

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In the United States, the Individuals with Disabilities Act (IDEA) makes provisions for qualified students to have access to free public education and accommodations (IDEA, 2004). IDEA was amended in 2015 through Public Law 114-95, the Every Student Succeeds Act, which states that:

Disability is a natural part of the human experience and in no way diminishes the right of individuals to participate in or contribute to society. Improving educational results for children with disabilities is an essential element of our national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for individuals with disabilities (IDEA, n.d., para. 6).

With IDEA in mind, it is important that teachers have the skills necessary to meet the needs of all learners. Researchers in the fields of teacher education, including physical education teacher education (PETE), have explained the need for teacher preparation programs, as well as preservice and in-service teacher workshops, to educate on best practice for teaching students with disabilities (Bentley-Williams, Grima-Farrell, Long, & Laws, 2017; Coates, 2012; Haegele, Hodge, Filho, & de Rezende, 2016; Lirgg, Gorman, Merrie, & Shewmake, 2017; Morley, Maher, Walsh, Dinning, Lloyd, & Pratt, 2017).

Not all graduates of teacher education programs report feeling prepared to offer inclusive class meetings (Bentley-Williams et al., 2017; Lirgg et al., 2017; Taliaferro & Harris, 2014). While they may not feel prepared to teach inclusive lessons, a positive attitude toward inclusive ideology tends to be present among college students, teacher education students, and current physical education teachers (Archambault & Searcy, 2018; Barber, 2018; Coates, 2012; Haegele et al., 2016; Li, Wu, & Ong, 2014; Morley et al., 2017). For instance, Li et al. (2014) studied a group of college students who had little knowledge of disabilities during a 10-week course. Their findings indicated a positive change in attitude toward individuals who have intellectual disabilities (Li et al., 2014). Further, Barber (2018) studied 150 teacher education students who had a one-time inclusive physical education experience. Review of the qualitative data indicated a trend in positive attitudinal change toward developing inclusive lessons in the future (Barber, 2018).

Positive attitude toward inclusion is an important part of preparing pre-service teachers, and ultimately, developing them to be educational professionals in inclusive classrooms. Practical experience also seems to be a vital part of an academic program's curriculum. More experience appears to be better, and the idea of increased opportunities to practice implementing inclusive lessons is a trend in the literature of both general teacher education and PETE (Bentley-Williams et al., 2017; Coates, 2012; Hutzler, Zach, & Gafni, 2005; Lirgg et al., 2017).

In a 38-week long study, Bentley-Williams et al. (2017) sought to determine characteristics and practical experiences which various education professionals and teacher education program students identify as being necessary for success in an inclusive classroom. Themes emerged from the qualitative data analysis which supported the notion of a long practical experience for teacher education students (Bentley-Williams et al., 2017).

Because physical education is addressed specifically in IDEA, it is ultimately the teacher's responsibility to plan appropriate adapted lessons (Lirgg et al., 2017). PETE programs provide opportunities for teacher candidates to gain the knowledge, skills, and abilities necessary for developing appropriate inclusive class meetings, and there is some research that suggests parts of effective programs. For instance, Coates (2012) and Lirgg et al. (2017) have suggested the idea of having long or embedded practical experiences in PETE programs in order to increase opportunities for practical application. Further, Coates (2012) suggested that practical application would improve preparedness if it were part of every PETE course, rather than simply included as one course in a school's curriculum. Regarding components of PETE programs, Haegele and Hodge (2016) wrote a paper on the social and medical models of inclusivity in physical education. The take-away for teacher education programs is to continue discussion of the models in their academic curriculum, considering how adoption of either model would influence the physical education teacher's actions and language, and, ultimately, the experience a student has in the classroom (Haegele & Hodge, 2016).

In a study which focused on the readiness of physical education teacher education students to take charge of an inclusive classroom, Hutzler et al. (2005) concluded that continued professional development is necessary for physical education teachers to cultivate the skills required for the environment. These development experiences are beneficial for both pre-service and in-service teachers, as indicated by research conducted by Taliaferro and Harris (2014), who offered a one-day professional development workshop on teaching inclusive physical education for students with autism. They observed, with some limitations, promising self-efficacy change towards inclusion among in-service teachers (Taliaferro & Harris, 2014). Haegele et al. (2016) also studied current teachers and made several conclusions, one of which was that their participant group was in favor of continued professional development in inclusive physical education after a two-day professional development workshop.

With research indicating PETE professional preparation programs, as well as continued professional development, as valuable to acquiring and gaining skills related to working with

students with disabilities, the authors of this study aimed to describe graduate student feedback after taking part in a disability awareness and etiquette focused professional development workshop. With a strong resource for educating about disability, disability sport, and inclusion located in the heart of the state, this paper specifically aims to share the benefits of a Sportable workshop, and encourage K-12 educators, community agencies, and colleges/universities to learn more about the resources Sportable provides.

The Sportable Disability Awareness and Etiquette Workshop

Located in Richmond, Virginia, Sportable is an adaptive sports club with the mission of creating opportunities and transforming lives of those with physical disabilities and visual impairments through sport (Sportable, 2019). Sportable operates with three main goals at the forefront of their programming: access, community, and excellence (Sportable, 2019). Founded in 2005, Sportable is one of the top Paralympic Sport Clubs in the country, providing opportunities for more than 400 athletes each year to participate in over 12 sport teams. The brand pillars of Sportable are for athletes to see beyond their disabilities, building peer relationships and reducing social isolation, and facilitating physical and attitudinal change in the community (Sportable, 2019). Sportable’s education and outreach is vast, with community education and professional development programs related to *Accessibility and Design*, to school-based programs focused on

Inclusion and Disability Etiquette Training and *Adaptive Sports 101* (Sportable, 2019). This paper is showcasing feedback from the school-based *Inclusion and Disability Etiquette Training* that was tailored to college-aged students.

Graduate Student Feedback and Experiences

Graduate students enrolled in a PETE program from a state university participated in the workshop, with 18 students ages 22-31 (mean = 23.1) years offering feedback about the workshop through reflective essays. Of the students, 13 were female and five were male, 17 identified as Caucasian, and one student identified as Hispanic. Two of the participants identified with having a disability. Fourteen participants noted having a friend or family member with a disability. Each participant was assigned a pseudonym to ensure anonymity. These pseudonyms are referred to when presenting student words. The treatment of participants was in accordance with the ethical standards of the American Psychological Association. Permission to conduct the study was granted by the Institutional Review Board at the primary researcher’s university.

Impact

Student reflections about impact centered around the manner in which the workshop impacted their knowledge, understanding, and awareness. Table 1 showcases the student quotes related to impact.

Table 1: Reflective Quotes Related to Impact

Reflective Quote	Name
“Knowing that Sportable exists, and what opportunities it provides for so many people.”	Katy
“I was impacted by the amount of people that have had their lives changed by getting involved in such an amazing program.”	Cary
“Seeing the change in the Sportable participants in the programs was the most impactful.”	Ryan
“The greatest impact was the focus on physical disabilities as independent content, as I realize how little background I had in that domain.”	Taylor
“It impacted me that so many individuals rely on Sportable for their physical activity needs, and that it would become more accepting and more towards the norm if these programs were in every city.”	Dominique
“I loved the video that was incorporated into the workshop- the emotions impacted me the most.”	Marines
“After the presentation, I’m super interested in adapted sports outside of physical education and as an entity of its own.”	Leslie
“The biggest thing I took away from the workshop is that all students can do physical activity as long there is a person ready, willing, and innovative enough to work with the child.”	Jasmine
“The Sportable program really opened my eyes to the amount of opportunities that people with disabilities have to play different sports on teams.”	Bo
“The presenter said something about always finding a way to adapt activities for everything student and every athlete. That impacted me the most. Find a way.”	McKenzie
“The presentation allowed me to see the emotional benefits that sports can have on individuals with disabilities, improving a sense of belonging and accomplishment.”	Chaz
“I did not have much knowledge on the disability etiquette that should be used, and am glad I picked that up in this workshop.”	Clara
“I was most impacted my knowing Sportable exists, and learning about grant information.”	Corey

Surprise

Student reflections about surprise centered around the manner in which the workshop brought them a-ha moments, teachable moments, and surprising outcomes. The number of sport opportunities for individuals with disabilities was a consistent theme in what was surprising. Table 2 showcases the student quotes related to what was surprising.

Application to Teaching

Student reflections about workshop content that they felt they could directly apply to their teaching centered around resources, strategies, and lifelong learning. Table 3 showcases the student quotes related to the manner in which the workshop applied to teaching.

Table 2: Reflective Quotes Related to Surprise

Reflective Quote	Name
"I was surprised by the fact that some of the individuals with disabilities could do such extreme sports such a skiing and motocross racing, and was surprised by the technology and equipment that Sportable used to adapt."	Cary
"It surprised me to learn about the amount of sport the Paralympics offers, and the level of intensity of the sports."	Ryan
"I was surprised about the number of programs, classification, Para vs. Special Olympics, and how they keep the cost so low."	Suzie
"The impact that Sportable has on individual lives, and that Sportable and the Special Olympics are NOT the same."	Katy
"How many Paralympic sports there are...DANG...I was not ready for extreme sports!"	Taylor
"I was surprised Sportable offers so many sports, and my favorite was the archery and the rifle."	Leah
"My eyes were opened to how much of a difference sport can make in the lives of individuals."	Jasmine
"The Sportable program is an incredible organization, and one that I did not know existed!"	Kai
"The awareness on how many different activities that are out there that I could bring into my classroom for my APE students was something that surprised me a lot."	Clara
"My biggest aha was the idea that students with disabilities can be athletes on competitive sport teams, too"	Andy
"I was surprised by how much equipment costs for people with disabilities, it is just too expensive."	Marines
"I was surprised that there seems to be an adaptation to almost every sport, which is great that all people can benefit from sport."	Corey

Table 3: Reflective Quotes Related to Application to Teaching

Reflective Quote	Name
"I can use Sportable as a resource in my future teaching, whether bringing them to my school, or visiting their programs to expand my skills in working with individuals with disabilities."	Suzie
"This workshop sparked me to look toward a new scope- I think if I have a neurotypical student with one arm, that's different than a student with autism, and I honestly can't say I would know what to do with that student."	Taylor
"I can have Sportable present at my school, and can use them as a resource when it comes to ideas, equipment, and activities."	Leah
"I can apply the "sky is the limit" mentality because Sportable shows that people with physical disabilities don't have to be limited in their participation."	Cary
"I took away that I should never assume, and always get to know my individual students to determine what they are comfortable with and what they are interested in pursuing."	Dominique
"Sportable seems a bit isolated to Richmond, however I can apply the workshop knowledge to future grant writing."	Ryan
"I really like the idea of bringing Paralympic Education into my curriculum in the future, as it is an awesome opportunity for students to learn new things, and provides a base for change and discussion of topics outside of sports."	Leslie
"I can almost guarantee that if teachers were to sit on a presentation like that, they would have an improved view of how to treat individuals with disabilities."	Jasmine
"The workshop was a great reminder that education needs to be continual, and even if you've had past experiences working with adults or children with disabilities, there is always so much more to learn!"	Martyna
"I am now familiar with how to teach many different sports that Sportable offers, and can implement them in my classes. Sportable provided further information for me to be a better teacher."	Katy
"As a future physical educator, I know resources I can use to help me get equipment and meet the needs of my students, and also help me learn about altering and adapting."	Marines
"I can bring thoughts of possibility and opportunity to my students know that I know how many Paralympic sports are available"	Corey

Attitude and Perception Change

Student reflections about attitude and perception change centered around the manner in which the workshop provided a new paradigm through which to view disability sport. This section is more limited than the others, likely because the students were in their fifth year of a teacher education program that provided multiple meaningful opportunities for growth in attitudes and perceptions related to working with students with disabilities. With that in mind, a handful of interesting reflections related to

attitudes and perceptions were indicated. Table 4 showcases the student quotes related attitude and perception change.

Future Advocacy and Action

Student reflections about future awareness, education, and advocacy actions centered around the manner in which the workshop impacted their hopes and plans for future behaviors and actions. A common thread of advocating for students and families runs throughout these quotes. Table 5 showcases the student quotes related to future advocacy and action behaviors.

Table 4: Reflective Quotes Related to Attitude and Perception Change

Reflective Quote	Name
“My attitude has changed a bit about person first language, as the presenter with the physical disability shed light on a new way to consider language and etiquette.”	Dominique
“My attitude definitely changed because I wasn’t even aware of half of the amazing activities they can do with just a couple of modifications and adaptations.”	Cary
“I don’t think my perceptions changed, as I’ve had a good number of personal experiences through my special education minor.”	Suzie
“My attitude developed, as anytime you learn something new, and have more tools in your toolbox.”	Marines
“I have gained more confidence this past year in working with individuals with disabilities, and this presentation continued to develop my perception of my confidence.”	Corey

Table 5: Reflective Quotes Related to Future Advocacy and Action

Reflective Quote	Name
“This workshop has influenced my future awareness to look for programs and set up programs for students with physical disabilities, as most of our coursework focus was on students with developmental delays, which is important, however we didn’t cover a ton of physical disability information.”	Ryan
“Advocacy was a huge takeaway- never thought to look and see if a public place really is accessible, and since this presentation I have kept an eye out for it, and recognize that it is my responsibility to speak up and advocate for the small things that prevent accessibility.”	Suzie
“I now understand my role in advocating for my future students, advocating to their families, and advocating to the local community to make sure opportunities for sport for all are available.”	Corey
“I will be able to look into Sportable for information, strategies, and activities that I can incorporate in my class, and promote to my future students and community members.”	Katy
“I would like to volunteer with Sportable at some point in my career, as I think I would learn a lot about innovative practices for helping those with various disabilities.”	Jasmine
“I feel like one of my key roles will be to make sure my students and their families know that an organization like Sportable exists in the state of Virginia.”	McKenzie

Conclusion

This paper aimed to describe graduate student feedback after taking part in a disability awareness and etiquette focused professional development workshop. With research indicating PETE professional preparation programs, as well as continued school district professional development, as valuable to acquiring and gaining skills related to working with students with disabilities, the need for the educational programs that Sportable provides is clear. Teachers, administrators, and university programs across the state are encouraged to explore all that Sportable has to offer, as continued education and awareness,

as well as continued educational opportunities have far reaching implications for best practice in diversity, access, and inclusion. For more information about Sportable, visit sportable.org.

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SHAPEAmerica



Increasing the Self-Confidence of Students with Childhood-Onset Fluency Disorder Through Recess

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Introduction

It is probable that virtually all education professionals have heard of Childhood-Onset Fluency Disorder (COFD), often referred to in the non-professional setting as stuttering. But is it possible that many of these educators know very little about the disorder, or more importantly how to work with a student with the disorder? It is very likely that classroom elementary teachers will teach children with this disorder at some point during their teaching career. What should these teachers know about COFD? What are characteristics of children with the disorder? What are instructionally sound practices for working with children with COFD? Specifically, for this manuscript, because of the social benefits of recess for children that are noted, and are especially important for children with COFD, the following main question is addressed: What are appropriate modifications for children with COFD in the recess setting that can assist in increasing self-confidence?

Definition and Symptoms, of COFD

According to the Mayo Clinic, COFD is defined in the following manner:

speech disorder that involves frequent and significant problems with normal fluency and flow of speech. People who stutter know what they want to say, but have difficulty saying it. For example, they may repeat or prolong a word, a syllable, or a consonant or vowel sound. Or they may pause during speech because they've reached a problematic word or sound. (Stuttering Overview: Definition, n.d.)

Symptoms of COFD vary from one individual to another. Such symptoms often include the following:

- Repetition of syllables, sounds, or monosyllabic words (i.e., "I-I-I see them")
- Prolonging the vocalization of consonants and vowels
- Broken words (e.g., pauses within a word)
- Filled or unfilled pauses in speech
- Word substitution to avoid problematic words
- Words produced with an excess of physical tension (e.g., head jerking, fist clenching)
- Frustration or embarrassment related to speech (Childhood-Onset Fluency Disorder, 2019)

Importantly, according to the Diagnostic and Statistical Manual – 5 (DSM-5), anxiety and avoidance have been added to the diagnostic criteria (American Psychiatric Association, 2015)

Causes and Prevalence of COFD

In regards to COFD, according to the Mayo Clinic, the underlying causes continue to be studied including the possibilities of abnormalities in speech motor control because

they have not been identified. Again, researchers continue to study the underlying causes of developmental stuttering, as the causes are not understood. A combination of causal factors may be involved. Possible causes of developmental stuttering include abnormalities in speech motor control and genetics. Causes of the disorder can also be neurogenetic. Conditions as a result of a stroke, traumatic brain injury, or other brain disorders can cause many of the symptoms of COFD. In addition, emotional distress may contribute to increased stuttering (Stuttering Overview: Causes, n.d.)

The prevalence of COFD is very dynamic and often changes during childhood. If needed, following special education procedures for the delivery of services by a speech language pathologist is paramount. About 5% of all children go through a period of stuttering that lasts six months or more. About 80% of these children will no longer stutter by the end of childhood. However, 1% of the population who will continue to stutter (Guitar & Conture, 2006). If an average class size of an elementary school is 20-25 students, then a teacher in the school will have a student enrolled in his/her class about once every four years.

Benefits of the Recess Setting for Students

Recess is basically a relatively unplanned, supervised activity allowing time for active, free play. Included in the benefits of recess are physical, social and emotional benefits (Benefits of Recess for Elementary School Children, 2015). According to Kovar et al. (2012) the main benefits from recess are social benefits. As noted, the possibility of children with COFD exhibiting anxiety and avoidance is prevalent. Anxiety and avoidance may persist in a less-structured social setting such as recess. Modifications need to be made to address these concerns in this important, influential setting.

Recess Modifications for Children with COFD

Recess can have a positive or negative affect on students with COFD, as it can on any student. As noted, this is especially true because of the social and emotional impacts of the recess setting. In terms of addressing social concerns in the recess setting, possible modifications that can be made by the classroom teacher to assist in addressing any concerns include the following.

- Let all students know that you are always "there for them" if they have a problem.
- Increase self-confidence by praising the student whenever possible in the recess setting. An example may be to occasionally let the student know that they are good at something such as jumping rope.
- Participate with the student and other students who may be socially insecure. Other elementary children will want to also "play" with the teacher who is actively engaged. After

a few minutes, the teacher can remove himself/herself from the situation. Hopefully all students will continue to play, including the child with COFD.

- Make the student with COFD your “helper” along with other students. Rotate the students (possibly three per day) as “helpers” so as the child is not noticed as being the helper most of the time as you will remove the student with COFD occasionally.
- Have the student demonstrate something that he/she does well during recess.
- If the student is clearly upset by teasing, discuss this privately and quietly with the student and of course address the behavior of the teaser.
- At the end of the week, have students share something positive about a classmate that occurred at recess. Assign different students each week. The student with COFD probably will be more confident as a result of an activity. The teacher can also share the information for all students to avoid putting the one student in a stressful situation.

Conclusion

The likelihood of an elementary school teacher working with COFD is statistically about once every four years. The benefits to children, including children with disabilities, of active participation in recess, are noteworthy. This paper has addressed characteristics, causes, and prevalence of children with the disorder and effective practices for increasing the self-confidence with children with COFD in the recess setting.

Disclaimer: This manuscript is for informational purposes only. The information provided on this website is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

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Manuscripts

Manuscripts follow the form of the Publication Manual of the American Psychological Association and must be typed on 8 ½ by 11 inch paper. The attached manuscript must be double spaced except that direct quotations of three or more lines in length are to be single spaced and indented. Manuscripts should not exceed 10 double-spaced pages of narrative including the citation page. Pages should be numbered consecutively. The name and institution of each author are inserted on a title page but not on the narrative. There should be provided on the title page biographical information on each author. This biographic information should include name and position at time of manuscript submission.

Any research involving human subjects must have Institutional Review Board (IRB) approval before a review can take place. A PDF copy of the letter must be submitted with each manuscript. If IRB approval was not granted and TVJ editor doesn't have a copy of the approval letter, the manuscript will not be published. Please check with your institution or school for IRB details.

References should be listed at the end of the manuscript and should be arranged in alphabetical order. Each reference cited in the article must be listed, but only those cited should be included. Sources should be cited by placing the author's name and date of publication followed by a page number when appropriate in parentheses: i.e., (Cowlick & Rice, 2003). The reference should be cited following the quote or fact noted. References listed at the end of the article should contain the following information:

1. The author, editor's or compiler's name, in reverse order (surname, followed by first and middle initials).
2. The exact title. Titles of books, pamphlets, periodicals, and newspapers are underlined: titles or articles within periodicals or books are not underlined and precede the periodical or book in which they are found. Only the first word of the title is capitalized and the title is followed by a period.
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publication. The date, volume, and page numbers follow the title of a journal. If each issue of a journal begins with page 1, include the issue number after the volume number in parentheses. Volume numbers should be italicized, issue numbers should be in parentheses and not italicized for journals. Please see below and the following web page for further examples of APA styles of various sources. <http://libguides.radford.edu/apastyle>

Examples of Citations

American Dietetic Association. (1999). Dietary guidance for healthy children aged 2 to 11 years. *Journal of the American Dietetic Association*, 99, 93-101.

Kulwicki, A., & Rice, V.H. (2003). Arab American adolescent perceptions and experiences with smoking. *Public Health Nursing*, 20, 177-183.

Illustrations

Illustrations such as pictures, graphs, and drawings are valuable additions to manuscripts. Please send these embedded within your manuscript.

Reviewing and Editing

Each article is reviewed by three members of the Editorial Board. Sometimes a guest editor is asked by the editor to review a manuscript depending upon the topic. To be accepted for publication the article must be approved by at least two of these persons. Reasons for rejecting articles include: topic is not of interest to the profession or to only a few members of the Association, topic is of interest but has already been thoroughly discussed in the literature, manuscript discussion is too general and vague, poor research techniques, the manuscript is poorly written or if human subjects were used in your research and IRB approval was not obtained and provided to TVJ Editor. In some instances a manuscript may be rejected but the author is invited to revise and resubmit it with corrections. Manuscripts accepted are subject to editing to conform to the Journal format.

Final Acceptance for Printing

After the editor has compiled the journal issue, it is sent to the printers. VAHPERD's executive director, president and presidentelect then edit *The Virginia Journal*. These three VAHPERD members are provided with a minimum of two drafts for their revision and comment. Upon their approval, the final document is printed and distributed.



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The Virginia Journal

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The Virginia Journal **Publication Specifications**

Submission Deadlines:

January 15 and July 15

Manuscript Specifications:

All manuscripts and announcements should be submitted by e-mail as a WORD attachment. See page 24 for more information.

Authors:

Please include your name, position, address, e-mail address, and telephone number. Authors are strongly encouraged to be members of both VAHPERD and SHAPE America.



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