

Coaching Athletes With Hidden Disabilities: Using Universal Design for Learning to Effectively Coach all Athletes

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The coach serves an integral role in shaping the youth sport experience. For athletes with hidden disabilities (HD), participation in sports may be a negative experience because their coach may misperceive or misunderstand their behaviors. This can lead to attrition, and the resultant loss of opportunity to gain the many benefits sports can offer. However, there are research validated strategies that can help coaches more effectively teach and work with athletes within the educational realm that has yet to be implemented within coaching education. These strategies fall under a framework called Universal Design for Learning (UDL). UDL is a proactive approach in which coaches anticipate diversity and plan accessible activities. Therefore, the purpose of this paper is to review the recent research on coaching athletes with HD, and to provide practical tips for coaching not only athletes with HD, but rather ALL athletes, in the most effective way using Universal Design for Learning.

Keywords: best practices, coaching education, youth sport

In the United States, approximately 10% of children have a disability that affects attentiveness, language processing, impulsivity and/or motor coordination. Often called hidden disabilities (HD), a common similarity is a lack of visible or apparent outward signs that are common with a physical disability such as cerebral palsy, or a genetic disorder, such as Down Syndrome. Examples of HD include learning disabilities, speech and language disorders, emotional behaviors, and children with mild intellectual disabilities to name a few.

Child athletes with hidden disabilities may have difficulty listening to, and following, instructions, display impulsivity (Alexander, 1990), have difficulty taking turns (Heil, Hartman, Robinson, & Teegarden, 2008) and show other such behaviors that not only interfere with socialization, but that also lead to poor peer relations and peer rejection (Bagwell, Brooke, Pelham, & Hoza, 2001). Such behaviors can lead to frustration within the sports arena. Coaches may mistakenly label these athletes as unmotivated, lazy, oppositional, defiant or even simply as problem athletes. Volunteer coaches may feel overwhelmed and unprepared to work with athletes displaying such behaviors (Wiersma & Sherman, 2005) and this may decrease their efficacy to work with such athletes (Kowalski, 2008), which would impact coaching behavior (Feltz, Chase, Moritz, & Sullivan, 1999).

Coaches spend less time providing quality interactions and quality feedback to athletes of whom the coach has low expectations (Horn, Lox, & Labrador, 2001). Research also notes that coach feedback is related to athletes' perceived competence and satisfaction (Allen & Howe, 1998). For athletes not receiving quality feedback,

their perceptions of their ability, and their satisfaction with the team, the sporting experience, and the coach, is often lowered. For individuals with HD, who already may have lowered self-esteem and lower participation rates due to poorer performance in gross motor skills (Harvey & Reid, 1997), this could lead to higher rates of youth sport attrition. However, if given the chance for a positive experience within youth sport, athletes with HD will often reap the rewards such as improved self-esteem, self-efficacy, peer acceptance, and social acceptance (Armstrong & Drabman, 2004) as well as benefits that extend to student achievement and beyond (Lullo & Van Puymbroeck, 2006). Such a positive experience can be created for ALL athletes through the use of Universal Design for Learning (Rose & Meyer, 2006) and other research-validated strategies and instructional methods. However, while these methods are often included in teacher preparation, they rarely, if ever, are included in coaching preparation. Therefore, the purpose of the current paper is to explore the recent research addressing attitudes and efficacy towards working with athletes with HD as well as to explain and present specific strategies to be incorporated into coaching education.

Current Research

Coaches' Attitudes on Hidden Disabilities

In a survey of 221 volunteer youth sport coaches, results showed that overall, coaches had positive attitudes towards youth sport participants with HD. Perhaps more importantly, coaches who had

previous experience with individuals with ADHD reported more positive attitudes than those coaches who lacked such experience. Coaches indicated that the majority of their experience came from previous encounters with former athletes, and that they were most likely to have learned the athlete had ADHD through parental communication (Beyer, Flores, & Vargas-Tonsing, 2008). These findings are similar to that of Hammond, Konjarski, and Young (2014) who found that Australian coaches who reported more inclusion of athletes with intellectual disabilities were more likely to report more positive attitudes towards these athletes. These findings underscore the importance of helping coaches gain experience working with diverse athletes as well as helping coaches learn the importance of strong parental communication. Coaches can gain these insights through coaching education curriculum that includes vicarious experiences, or modeling, through scenarios. Coaches would also benefit from learning new techniques to gather all relevant information about athletes from parents, such as a checklist indicating instructional techniques that the athlete responds to best (see Flores, Vargas, & Beyer, 2017).

It is also important to note that 36 coaching educators representing universities, national governing bodies of sport and other similar arenas also completed an attitude survey assessing the inclusion of coaching athletes with hidden disabilities into coaching education programs. Results indicated that 78% of the coaching educators did not believe that the current coaching education does an adequate job of preparing coaches to work with athletes with HD, 83% felt that coaches had little specific training in this area, and over 70% reported that coaching education should prepare coaches to work with athletes with HD. Respondents suggested the use of undergraduate curriculum and coaching clinics to help facilitate this education (Flores, Beyer, & Vargas, 2012).

Coaches' Efficacy for Working With Athletes With Hidden Disabilities

Findings from a study on volunteer youth sport coaches' efficacy beliefs for coaching athletes with ADHD indicated that coaches felt relatively efficacious in their ability to discipline and remain fair with all athletes (Vargas-Tonsing, Flores, & Beyer, 2008). However, they reported the least amount of confidence in their ability to recognize athletes with ADHD. Thus it is possible that coaches reported an inflated sense of efficacy. Additionally, consistent with attitudinal research, coaches who had previous experience with athletes with ADHD, reported higher efficacy levels. Similarly, Rizzo, Bishop, and Tobar (1997) found that coaches with greater perceptions of competence were more willing to coach an individual with mild intellectual disabilities (ID) and had more positive attitudes towards coaching individuals with mild ID. It would appear as if coaches would benefit from vicarious learning experiences, as well as learning new techniques for coaching all athletes to help increase efficacy levels.

In 2015, Vargas, Flores and Beyer showed coaches a series of video clips involving athletes exhibiting various challenging behaviors. Following the video clips, 55 youth sport coaches completed questionnaires that assessed their interpretation of the behavior, their proposed behavior management, and their efficacy in their ability to positively impact the athlete's behavior. Results found that while coaches were quick to indicate a need for demonstrations and checking for understanding, they often did not consider that the coach may have given faulty directions and would instead recommend repeating the instructions to make sure the athlete understood. Other times, the coach indicated that the

athlete must not know terminology or perhaps had not been taught the skill used in the drill; again, putting the "blame" on the athlete rather than considering faulty teaching technique. Interestingly, these coaches all reported very high efficacy in 1) appropriately redirecting the athlete(s), 2) effectively making accommodations to coach the athlete(s), and 3) preventing the athlete from interfering with coaching the other athletes. These findings indicate not only a need for coaches to add to their pedagogical skills, but perhaps also a need for improved reflective processes within coaching education.

Universal Design for Learning

One way for coaches to improve the learning and success of youth athletes is to adopt the concept of Universal Design for Learning (UDL) originated at the Center for Applied Special Technology (Rose & Meyer, 2006). UDL is a set of principles used to design instruction that meets the needs of diverse groups of learners. Educational researchers conceptualized and began to refine the principles of UDL within schools at a time when students with disabilities received instruction in inclusive rather than separate classrooms (Edyburn, 2010). Rather than focus on the learning deficits of students, teachers and administrators developed a new framework, focusing on the potential shortcomings of current instructional design so that learning is accessible. According to Edyburn, researchers, administrators, and policy-makers influenced the development of methods and strategies that educators use to design and implement instruction for diverse groups of learners. The principles of UDL have been used to create effective instruction classrooms for the past two decades and can be applied to other instructional situations, such as young athletes learning within recreational sports.

Coaches can use UDL to make their instructional practices accessible, rather than focusing on athletes' specific skill deficits or reacting to athletes' failure. Using UDL in coaching allows for proactive planning for learning differences as athletes come to sport with differing skills, interests, and needs and helps avoid frustration when instructional concepts are not understood and/or demonstrated by an athlete during practice or game situations. According to UDL, three networks form the neurological basis for this framework and combine for the learning process to occur.

Recognition Network

The recognition network affects how individuals take in and encode the information. Research in school settings shows that UDL leads to increased achievement for students with HD (Hall, Cohen, Vue, & Ganley, 2015; King-Sears et al., 2015). School-based studies implemented UDL within general education settings and teachers designed instruction by attending to recognition network principles. For example, students used technology to text-to-speech, online dictionaries, and highlighting tools to support reading. Teacher provided instruction using multi-media and video clips and programs were implemented using technology adjusted instructional pacing based on student performance (Hall et al., 2015; King-Sears et al., 2015; Marino et al., 2014). These tools made content more accessible to students with HD.

In applying these principles to recreational sports, coaches can make instruction accessible by using methods that allow athletes with a variety of learning preferences and strengths to process and understand. Rather than spending time re-teaching or clarifying instruction or activities, coaches plan initial instruction that is

accessible. For example, if verbal instructions are given, athletes process this auditory information. However, athletes with attention challenges or auditory processing challenges may not receive the verbal information successfully and may have numerous questions or make errors during the execution of the task, taking more time away from practice to reteach the activity. By incorporating strategies of UDL, a coach couples verbal instructions with a visual aid or demonstration and may even include physical prompts and guidance. Adding a few simple visual and kinesthetic components makes instruction accessible to everyone the first time.

Strategic Network

The strategic network relates to how individuals use information and show what they have learned or taken in through the recognition network. School-based research implemented methods addressing the strategic network and showed that students with HD performed as well as their peers without HD (Hall et al., 2015; King-Sears et al., 2015; Marino et al., 2014). Within these studies, teachers taught students strategies for systematically solving problems; thus, students had additional tools with which to organize their thinking and demonstrate learning. Another strategic network support was varying response format by providing options for oral and written descriptions.

Just as in educational settings, coaches can provide different options for skill demonstration. Coaches who use UDL principles are attentive to how their athletes use and show their knowledge and skills. Applying the strategic network involves allowing athletes to demonstrate fundamental skills in a variety of ways that match their performance level and abilities. Subsequently, if the skill is batting a ball, then the coach would plan a variety of practice opportunities, such as hitting different sized balls off a tee, hitting a ball hanging on a string, hitting off a soft pitch, or hitting a normally thrown ball. Through these different activities, the athlete can show knowledge and skills related to correct hitting form. If there was only one way to practice hitting (with pitched balls), an athlete may not be able to demonstrate the part of the hitting process that has been mastered because it would be overshadowed by missed contact with a pitched ball. Each variation allows practicing the same skill with success, but also offers the opportunity for challenge as the skill is adjusted for the individual ability level of each athlete.

Affective Network

The affective network involves interest and engagement in instruction. School-based research showed that instructional practices that included affective components taught through the use of video games led to increased student learning (Marino et al., 2014). With reference to the affective network, coaches plan activities that attempt to engage athletes and maintain their interest. Interest and enthusiasm for the sport allows athletes to persevere through challenging tasks. Learning new skills, including a new sport, involves challenges, and engaged athletes are more likely to continue and persevere rather than quit because the challenge outweighs the benefit of participation. Structuring different activities in practice that allows for everyone to have some success is an important aspect of motivating athletes to persist at the activity. But by giving athletes options and choices they are more likely to put forth effort because they are more interested in the outcome. An example would be to offer athletes options for their conditioning activity (e.g., lap around the field, shuttle lines, jump roping) and then let them have a choice of when in the practice they would like to incorporate this

conditioning. (e.g., before practice starts, after finishing a mastery drill, at the end of practice). Additionally, making activities relevant and authentic to game situations will positively influence motivation and interest (Jeffery-Tonsoni, Eys, Schinke, & Lewko, 2011). Explaining the benefits of drills and activities to athletes and how they translate over to game play may increase interest and motivation to persist at practice. Ideally, coaches should use individual goal setting for specific fundamental skills so athletes are motivated to continue their efforts to meet successive challenges and realistic goals.

UDL Coaching Guidelines

In the remainder of this paper we describe Universal Design for Learning (UDL) guidelines for coaches. The guidelines are based on a comprehensive review of the literature and our collective experience working with youth sport coaches. A summary of the guidelines is provided in Figure 1.

Behavioral Expectations for Athletes

To have the optimal practice environment so all athletes have the appropriate support, a variety of factors must be considered and prepared. Coaches should begin with having clear and reasonable expectations for their athletes. From the initial practice, a coach should establish player expectations for both practice and game play. Establishing expectations sets the stage for athlete engagement and allows athletes to be ready to use their recognition network. Clear expectations lay the groundwork for an organized and structured environment because athletes will have basic knowledge how to interact and behave, thereby decreasing distractions, frequent redirections, and interruptions. This allows athletes to focus on target activities or concepts. Including athletes in the process of establishing or defining expectations influences the affective network because athletes have a stake in planning how their team will function. Three to five clear and concise team expectations are adequate for helping to establish positive behaviors (Reinke, Herman, & Stormont, 2013). Expectations should be tailored to what a coach and athletes would like to have as their "optimal team." Broad behavioral categories such as respect, safety, and hard work, can encompass many practice and game time situations. For example, an expectation of respect might include appropriate interactions with team members, coaches, and officials but also includes proper preparation, punctuality, and treatment of the equipment/facilities. Youth athletes often have differences in their experiences and abilities in sports. It is not unusual for some youths to have little or no experience at playing on a sports team. Routine modeling, reinforcing, and recognizing athletes for demonstrating the expectations, and redirecting those who don't, emphasizes the importance of the behaviors and ensures time for all athletes to understand.

Physical Arrangement

Key to efficient use of practice time and facilitating on-task behavior is the organization of the practice space. A basic organizational schema is to start the coach in the middle of the practice space with the major activity and put individual or small skill groups on the outside in stations. This provides the coach the ability to view all athletes and maneuver efficiently to give recognition for being on task. This physical arrangement also lends itself to individualizing instruction by avoiding having all athletes doing

UDL Best Practice Tips

Behavioral Expectations and Management

- Establish three to five clear expectations with athletes.
- Use proximity control by moving in the immediate area of the athlete having behavior challenges.
- Provide positive reinforcement to another athlete that is doing what you asked to encourage on-task choices.
- Help athletes stay engaged by providing choices when appropriate.
- Explain how the drills relate to actual game play.

Physical Arrangement of Practice and Providing Directions

- Organize your practice space using stations when working in smaller groups, or when in a large group, with you in the middle.
- When designing activities to be included in the practice session, focus on establishing an environment of success.
- Offer an entry level and challenge level for each activity to promote development and inclusion of athletes. For example, when practicing striking a baseball, allow some athletes to hit off the tee, some hit off the toss up and others try to hit off live pitching.
- Use task cards and equipment modifications to best challenge athletes according to their skill level.
- Position yourself close to the athlete to gain eye contact with the athlete while speaking.
- Ask the athlete to re-state the directions to check for understanding and provide clarification if necessary.
- Provide directions using multiple modalities. The use of visual aids, gestures, and physical prompts should accompany verbal directions.
- It is often helpful to chunk directions into steps. After each chunk of information, ask the athlete to restate the step in order to ensure understanding before moving to the next step.
- Clarify terms that appear to confuse the athlete and use those terms rather than frequently changing the terminology.
- Have the athlete use other modalities to reinforce the skill. For example, when showing a soccer player how to pass the ball, cue the athlete to attend to the feeling of the ball as it hits his/her instep and then use correction cues to reinforce and improve the performance.

Evaluating Progress

- Provide variations of the same skill to allow for athletes of all skill levels to demonstrate their ability.
- Use rating sheets and checklists during warm up activities to quickly evaluate athletes' skills.

Parental Involvement

- Use the preseason meeting to share and gain information with parents.
 - Establish clear expectations for parental involvement and communication.
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Figure 1 — UDL coaching guidelines.

the exact same tasks, the exact same way. Differentiating instruction will influence athletes' use of their recognition and affective networks. With regard to the recognition network, opportunities for differentiated instruction allows coaches to provide specific strategies, and design instruction based on athletes' current functioning. Recreational youth sports teams are comprised of a diverse group with athletes with and without HD who come to the sport with varied skills; therefore, athletes will have different levels of skill. This impacts the affective network because athletes will likely be less interested in participating in the exact same activities and more interested in participating in activities that address their specific skill level. For example, athletes who have had experience with basketball and are refining their dribbling and shooting skills will not be motivated to relearn these skills, just as athletes will become frustrated if the instruction and skills are too challenging or complicated for them to perform successfully. Therefore, differentiating instruction by using small group and stations offer meaningful,

challenging activities that can be done independently. In attempting to impact the recognition network, differentiated instruction allows for accommodations for athletes such as pictures and performance. Examples include Task Cards which can increase understanding while making practice more meaningful and constructive.

An additional accommodation is the use of varied equipment. Equipment changes differ from sport to sport and are very individualized to the strength and skills of the athlete. Coaches may increase or decrease the size of equipment, use slower equipment, or make equipment brighter or more interesting. Whatever the accommodation, always have plans in effect for quick transitions and equipment changes that are designed to keep athletes engaged and reduce down time. Also, make different equipment part of all practice activities and allow choice. Allowing athletes to choose provides natural differentiation and lessens the spotlight on athletes who have different skills. Having established procedures and routines will also help everyone know what to expect at practice and reduce the need to redirect.

Evaluating Progress

To set realistic and measureable goals, systematic assessments of player improvements should be efficiently and effectively measured in both sports skills and game-play. It is common for coaches to measure progress and success from their win-loss record because it is simple, and ongoing evaluation can be cumbersome and time consuming. However, there are a variety of methods that can be used to make the evaluation process more feasible, effective, and valuable for improving practice sessions and setting reasonable, meaningful goals to motivate athletes to persist at practice. In order to be proactive in planning differentiated activities using the principles of UDL, coaches need ongoing data to inform their decisions. Initial planning is necessary to recognize the priority skills to assess and then determine the best methods for efficient documentation of results. Determining what to evaluate depends on the ability of the youth athletes. A good start is identifying the sport-specific skills that are fundamental to game play success. Examples of some basic skills for the game of soccer would be passing, dribbling, and shooting at goal. As athletes become more skilled, strategies, both offensive and defensive, would be introduced and measured to determine the understanding and implementation during game play. When introduced and implemented correctly, assessment results will be utilized as constructive feedback for tracking individual and team goals and guiding practice content. All athletes benefit from feedback, especially if it is introduced early and part of the normal practice routine.

To ensure age and developmental appropriateness for each youth athlete, a variety of reliable and objective assessments of fundamental skills can be used. This includes rating and check sheets that allows a coach/volunteer to use a set of criteria to assess the quality of a movement skill such as stepping in opposition and transferring weight in an overhand throw. Mastery sheets provide quantitative data by recording the amount of trials it takes to "master" a set goal. For example, how many shots does it take for an athlete to make 10 free throws, or kick 10 goals from a penalty kick? No matter the method for collection, all assessments must generalize to the game and be executed in a spontaneous, nonthreatening play-based environment. Independent activities must be planned to engage all athletes and minimize opportunities for peer comparisons of the performance of others.

It is always recommended that the skills be observed and measured in a variety of environments when possible (Horvat, Block, & Kelly, 2007). Acceptable formats include organized drills and team challenges, stations and loosely organized games. In most cases each format should be performed in a game-like atmosphere allowing an opportunity to observe the entire team demonstrating sport specific skills in a context. In addressing the affective network, athletes are more likely to enjoy participating alongside their peers in real-life contexts than performing drills while their coach observes. Playing the actual game is why athletes signed up for participation in the first place, but de-contextualized drills may foster stress and anxiety in athletes with HD or athletes who are less skilled, and in contrast, skilled athletes may perceive them as boring. An easy way to assess athletes in these situations is to use an informal checklist of skills (see Flores et al., 2017) and game play rules and strategies. By checking off skills demonstrated by athletes in the beginning, and then on a consistent basis throughout the season, a coach can narrow their focus and devote attention to specific instruction and refinements during practice activities.

There are a number of methods for planning efficient evaluation tools. Using group score sheets prepared with each of the athlete's names and a ranking or coding system so only one symbol

needs recording is an easy way to collect and then interpret scores after practice. An additional efficient and manageable method for ongoing measurement of team and individual progress is incorporating technology, such as a tablet or smartphone, with the necessary spreadsheet of athletes and criterion for evaluation. An additional advantage to the use of technology is the ability to download and manipulate data to discover team and individual trends and make necessary refinements in practice sessions and other game plans.

Parental Involvement

Parents can also be of great help to coaches, not only when working with athletes with HD, but when working with all athletes. Coaches should use the preseason meeting to not only share critical information and coaching philosophy, but to also gather information regarding individual athletes as well as set the expectation for parental involvement and communication (Flores et al., 2017). The coach should look to gain valuable information about all athletes, not just those that might need certain accommodations. For example, children will respond differently to the various teaching strategies as well as to reinforcement and redirection. Coaches can ask parents for methods that work best for their child, what situations are likely to cause distress for their child, as well as the best method for redirecting instances of misbehavior. Coaches can also indicate their desire for parents to share if any circumstances have changed that might affect their child's behavior. This knowledge allows a coach to better understand and work with the athlete. For example, knowing that a child dislikes being singled out, a coach will not ask that child to be part of the demonstration. A checklist, or form, may be helpful in gathering this information; coaches can generate this on their own, in which case it is recommended that questions be open ended, or they may use the form created by Flores et al. (2017).

Coaches should also use the preseason meeting to establish expectations for parental involvement and communication. In coaching using UDL, coaches need input from parents and open communication. The coach only spends a few hours with each athlete each week, so parents can provide invaluable information that coaches may not gather during their brief interactions with athletes. Ohrberg (2013) notes that open communication between parents and coaches fosters trust and can promote cooperation and understanding. With this trust, coaches can work with parents to solve problems, devise improved instructional activities, and improve their interactions with athletes, especially athletes with HD. For example, a coach may not understand why an athlete with HD does not follow directions, but parents can clarify needs and tell about previous successful experiences. With information from parents, coaches may come to find out that athletes with HD are not defying directions, but have not received adequate directions or instruction. Since, by definition, youth sports involves children, many athletes developmentally cannot articulate information about how or why they are having difficulty. Therefore, parents are an invaluable source of information that supports coaches' instruction and interaction with athletes.

Conclusion

Within the coaching realm, resources for coaching athletes with HD are few. Research on this topic is relatively new, and thus practical resources are even more limited. To date, there has been *The ADHD Affected Athlete* (Staberno, 2004) and more recently,

Effective Coaching for All Athletes within Youth Recreational Sports (Flores et al., 2017). Online, coaches can access discussion opportunities and resources available at <https://www.facebook.com/HiddenDisabilitiesInSport/> and <http://hidden-disabilities-in-sport.org/>. However, many more resources exist outside of sport, particularly within special education and adapted physical education, and it would behoove coaches to know where to locate them. Such resources include www.CHADD.org and Learning Disabilities Association of America <https://ldaamerica.org/>

The ability to coach, and effectively reach, all athletes is a skill, and one that should be fostered through continuing education and available resources. To date, there is a paucity of both, and this needs to be remedied. Misconceptions and misunderstandings of individuals with HD, rather than negative intentions, often are the root of negative interactions (Brostrand, 2006), and individuals with cognitive or emotional disabilities are less likely to receive favorable evaluations than their counterparts with physical disabilities (Bordieri, Drehmer, & Taylor, 1997). However, through active learning, and stimulated disability experiences and exposure, individual's attitudes and behavior may be altered (Brostrand, 2006). Coaching educators should assess and reconsider current curriculum to incorporate strategies and information that has been validated through research and implementation within the educational setting. This information is available through special education and adapted physical education, which underscores the need for collaborative research and sharing of information.

Much future research is needed. While initial findings have suggested that coaches hold positive attitudes (Beyer et al., 2008) and have high efficacy in working with athletes with HD, this research also indicated that coaches were least efficacious in their ability to recognize characteristics of HD (Vargas-Tonsing, Flores, & Beyer, 2008). Thus, future research should not only replicate recent studies, but should also seek to determine actual practices of coaches. Such research may then guide the creation of resources and coaching curriculum, drawing upon Universal Design for Learning, and the efficacy of each should be assessed to ensure effectiveness. As cross-disciplinary collaborations occur, research exploring the use of technology to assist coaches should also be explored.

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