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Swim Instruction for Individuals with Developmental Coordination Disorder

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Abstract

Almost every swim teacher has encountered an individual who had difficulty learning to swim, whose movements appeared dissimilar from peers, or who needed to repeat swim course instructional levels many times. That individual might have had difficulty with sport activities, handwriting, and been clumsy in gross and fine motor tasks. Difficulty with coordination and control of movement may suggest a diagnosis of developmental coordination disorder (DCD). Individuals experiencing DCD may feel left out, inadequate, unhappy, frustrated, and embarrassed by his or her ineptness. These feelings may result in an individual withdrawing or refusing to join in and participate in physical activity. DCD also can lead to disruptive behavior out of frustration from his or her lack of competence. Individuals with DCD may be “labeled” lazy, slow, clumsy, stupid, or troublemaker. No matter what the label, the individual’s difficulty with movement coordination and control can have lasting effects in all areas of daily life. For the swim student with DCD, frustration can lead to refusal to participate, difficulty with learning swim tasks, and future negative attitudes about aquatic activity including fear of water later in life. Individuals with DCD may never acquire aquatic personal safety skills nor be able to use aquatics as a lifelong fitness activity. It is important to identify symptoms of DCD early and correctly to provide appropriate and timely swimming intervention. This article explores diagnosis of developmental coordination disorder (DCD), causes of movement coordination and control issues, how DCD relates to other disabilities, and how lack of or inappropriate remediation can negatively impact aquatic participation. This article will include techniques for assisting the individual with DCD to master swimming and water safety skills.

Keywords: swim instruction, adapted aquatics, disabilities, developmental coordination disorder (DCD)

Introduction

Almost everyone has experienced difficulty with movement coordination and control at some time such as when learning and practicing a new skill or when trying to remember how to perform a skill one has not used for some time. For example, very small children may use rudimentary coordination patterns or inaccurate control while acquiring fundamental motor skills for the first time. These are natural occurrences and with practice and experience, movement coordination and control normally develop into more advanced movement patterns.

For some other individuals the capacity to put together movements into well-controlled motor patterns (a.k.a., coordination) remains elusive due to a presence of a diagnosed or undiagnosed disability (Kadesjo & Gilberg, 1999). Individuals with cerebral palsy, for example, may experience motor planning and performance difficulties. Motor activities continue to be disorganized and poorly controlled with minimal or delayed developmental advancement. For another group of individuals, movement coordination and control remain delayed long past normal age-related milestones, even though no apparent disability is present. These

individuals may have a neurodevelopmental condition called developmental coordination disorder (DCD). It has been estimated that out of any typical school class of 30 children, at least one or two and perhaps even three children may have some degree of DCD (APA, 2013, p. 75). Likewise, in a swim class of 10-15 individuals between one and two individuals may have some degree of DCD. It is likely many swim teachers have encountered individuals with DCD and may have some in classes now.

Developmental Coordination Disorder Defined

The *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (DSM-V) (American Psychiatric Association, 2013) lists four criteria for a diagnosis of developmental coordination disorder (DCD):

- Acquisition and execution of coordinated motor skills are substantially below that of chronological age peers.
- These motor deficits interfere substantially with activities of daily living appropriate to the age of the individual.
- Onset of symptoms is in the early developmental period.
- These deficits cannot be explained by some other condition.

(APA, 2013, p. 74)

Differentiation

How is each DCD criterion evidenced? Examples of motor deficits must be considered in light of DSM-V the age of the individual. Therefore, it is appropriate to be well versed on developmental norms. Typical motor skills that may be noticed as being below that of normal age expectation include the large motor skills of walking, running, hopping, skipping, jumping, throwing, kicking, and catching, as well as fine motor skills such as handling objects, cutting food, using a scissors, buttoning buttons, tying shoe laces, and performing other self-care skills. (Haywood & Getchell, 2014).

While anyone can have instances of coordination difficulty, to be diagnostically significant events of aberrant coordination must substantially interfere with age-appropriate daily life. For an example, a child having difficulty handling a pencil may then have difficulty learning to write. A child continually tripping and/or falling may have repeated injuries, hospitalizations, and/or days missed from school. Unfortunately, we do not have developmental norms for acquisition of swim skills. Therefore, we must extrapolate from observations of land-based activity

Left untreated, developmental coordination disorder can continue to affect an individual's life for his or her entire life span. Inability to hold and manipulate a pen or pencil can affect an adult's ability to perform paperwork or even word processing. For an adult, difficulty with coordination could mean inability to

perform the manual tasks of a job on an assembly line, rendering a person unemployable. Similar difficulty with coordination can affect an individual's desire to participate in physical activities, thus affecting optimum health and wellness. Left untreated, coordination problems will carry over into adulthood and have a life-long effect, not only on work-related circumstances, but also on active leisure (Raz-Siliger et al., 2015).

Research has shown that individuals with developmental coordination disorder show a higher incidence of comorbid psychosocial disorders. (Wilson et al., 2014; Missiuna et al., 2014). Clearly, feelings of inadequacy can have a lasting impact. Many adults who never "finished" learning to swim dropped out of lessons due to lack of success. That lack of success can also contribute to poor self-esteem and alienation from peers.

Furthermore, lack of participation in vigorous large muscle activity, including swimming, can have a lifelong adverse effect on all aspects of physical fitness. The individual might suffer from lower strength and endurance, be less flexible, have diminished efficiency of cardio-respiratory function, and be more susceptible to increased levels of body fat. Ultimately reduced quality of life as well as a shorter life span can result.

According to DSM-V (2013), symptoms must appear early in childhood. Here, again, it is important to know at what age specific motor skills typically develop. The appearance of symptoms should not be confused with actual notice of this appearance. Left untreated, symptoms appearing in childhood and written off as "not good in sports" or "our family was always klutzy" or when referring to aquatics written off as "doesn't like the water" or "none of our family can swim" can result in age of onset being missed. Missing the age of onset can impede comparison with developmental norms, further complicating diagnosis and remediation.

In addition, children form attitudes, opinions, and perceptions early in life. Enjoyment of physical activity including swimming contributes to lifelong participation. Perceptions of success, accomplishment, acceptance, and belonging can be generated from participating in aquatic activities with peers. As long as swimming is pleasurable and fun, a child will most likely continue to want to participate. Once progression into higher levels of skilled swim strokes begins, the child with developmental coordination disorder will be at a disadvantage. Learning of skills will be impeded and the child may become discouraged and want to drop out. That individual will not only lack the activity foundation for life long aquatic participation, but also miss the opportunity for the benefits of successful peer interactions in aquatic activities while on family vacations and in school as well as at summer camp. Self-esteem can be permanently marred as a result of being viewed as less than competent in peer-related aquatic activity.

Many other disabilities have as a component where coordination is challenged. Intellectual, sensory, and physical disabilities can impede an individual's development of controlled and coordinated movement. In these cases, the primary disability is the chosen diagnosis, not developmental coordination disorder (DCD). For developmental coordination disorder to be the primary diagnosis it must appear as the only causative factor explaining an individual's difficulty with coordination. However, activities to improve coordination are important for everyone, whether a person has a primary diagnosis of developmental coordination disorder or not.

To make a primary diagnosis it is important to synthesize all aspects of any individual's life. Play skills, school academic performance, peer interactions, home life, work environment, and recreation engagement are all important to consider. In addition, standardized tests should be given to provide a complete picture. Acquisition of motor skills may be delayed for many reasons from illness to lack of opportunity. Delay is not permanence. Delay must be significant and interfere with daily life. If addressed early enough, that delay can be remediated.

According to DSM-V, developmental coordination disorder is not typically diagnosed prior to age 5 (APA, 2013, p. 75). This is because there are wide age ranges in the development of motor skills; in addition, assessment of younger children is relatively unreliable. Preschool children in parent/child swim activities can all participate together with assistance of parents and coordination is not generally an issue. In children ages 5-11 years the prevalence is that 5% to 6% of all children may be diagnosed with severe developmental coordination disorder and 3% with probable developmental coordination disorder. Males are more often affected than females, with a male:female ratio between 2:1 and 7:1 (APA, 2013, p. 75). This means 5% to 6% of children in swim lessons could be affected. Further, Cairney (2014) further estimated 1 in every 20 children are so affected. Zwicker et al. (2012) estimated 5-6% of school-aged children are so affected. This correlates fairly well with current statistics above. Kadesjo and Gilberg (1999) as well found that combining severe and moderate occurrences, a total of 14% to 15% of the population may have some form of developmental coordination disorder. They as well as Missiuna et al. (2014) found developmental coordination disorder was a common problem and was strongly associated with ADHD symptoms.

The first sign of developmental coordination disorder may come when a child does not meet the traditional infant developmental milestones (Cermak & Larkin, 2002). Additionally, they noted the inability to acquire common play skills and/or use small hand toys, including those used in water play. As learning later motor tasks is often reliant on mastering early motor skills, 50% to 70% of children continue to have problems on into adolescence (Kadesjo and Gilberg, 1999). Developmental coordination disorder can exist in teen, adult, and senior populations, particularly if no remediation has taken place during childhood.

In addition, attendant psychosocial problems can arise and persist stemming from unremediated developmental coordination disorder. Wilson et al. (2014) have documented these issues, making early diagnosis and management of developmental coordination disorder an even higher priority. The feelings of inadequacy, isolation, and over-all failure stemming from inability to participate successfully in physical activity can also have life-long effects.

Causation

Presumed causation of DCD is poorly understood and varied. Developmental coordination disorder is more common following prenatal exposure to alcohol and in preterm and low-birth-weight children (APA, 2013). It is also more prevalent in individuals with ADHD and children with autism spectrum disorders (Kadesjo and Gilberg, 1999). Children with the more severe instances of each are more likely to also have developmental coordination disorder even if it cannot be the primary diagnosis. As genetics plays a part in some disorders, genetics cannot be ruled out. Lastly, cultural factors such as lack of opportunity, poor nutrition, insufficient infant stimuli, and other prenatal factors can also have a causative effect (APA, 2013). In each of these instances, developmental coordination disorder would not be the primary diagnosis (and not included in the prevalence statistics). Individuals having developmental coordination problems secondary to another diagnosis have the added complication of several factors contributing to difficulty in learning and mastering swim skills.

Assessment

Assessment of an individual who is suspected of having developmental coordination disorder is a multi-step process. Remembering that diagnosis usually does not take place until after age 5 (APA, 2013, p. 75), assessment often begins with informal observations by parents and/or teachers. The child may not crawl, walk, run, or perform other gross motor skills at normally expected ages. At this point, comparison of the child with established developmental norms may be done, but despite the DSM-V definition, motoric delays in and of themselves are not definitively diagnostic. While it might be easier to compare one child with another child, particularly a sibling or classmate, without knowing if the comparison child is or has developed “on schedule” or early or late, such comparisons can be misleading. Screening can be done with acceptable developmental norms as long as caution is used (Gallahue & Ozmun, 2011; Halbach & Reid, 2011; Payne, 2011). Developmental norms do not exist for most of the motor skills associated with swimming which is not surprising because instruction in swimming does not have a history of using age to group students into swim lessons, but rather has used skill level groupings instead. In addition, teachers of swimming usually only see a child during swimming lessons. There are other ways of gathering information.

It is also important to remember that motor skills do not develop in isolation, rather they are progressive and develop in identified developmental sequences. Lack or delay in one skill area may relate to a delay in development of an earlier-

appearing motor skill, one necessary for development of the skill in question. For example, a child's walking development may be delayed if their pre-requisite postural/equilibrium reactions (e.g., right reactions) or other fundamental motor skills such as crawling, creeping, or standing are delayed. Similarly, in swimming, fear of the water, hesitation to float or submerge the face will delay acquisition of more advanced swimming skills such as treading water or doing rudimentary propulsion strokes.

Initial Screening

Once developmental coordination disorder is suspected, further details regarding the child's daily life are needed. The *Developmental Coordination Disorder Screening Matrix*, adapted from Grosse & Becherer (1975) (see Table 1) can be used for this purpose. A teacher of swimming can, in conjunction with parents, explore this matrix. This checklist is arranged so that if an individual has substantial coordination difficulty most of the even numbers will be checked always or almost always, and most of the odd numbers will be checked never or almost never. A scatter of ratings may indicate problems in any of the five sub-areas listed.

For a diagnosis of developmental coordination disorder to be made the coordination challenges an individual has must significantly interfere with activities of daily living. This matrix addresses the child's functioning on a daily basis. The teacher of swimming can talk with parents regarding the child's difficulty in mastering swim skills. Parents want to know why a child is not advancing with his or her class group. Designed to be teacher-friendly, the positioning of responses on the matrix makes this an easy instrument to use while providing a quick picture of the child's general strengths and weaknesses. When discussing a child with his or her parents this information will be useful in either making further suggestions for follow-up or ruling out developmental coordination disorder. While it is not the responsibility of the teacher of swimming to diagnose a problem, that teacher can suggest to a parent that additional screening might be beneficial to bring to light a hitherto unrecognized problem.

This screening matrix is easy to use because it is observational, needing no special instruction or assessment protocol for the child. It can be used by parents, teachers, activity leaders and coaches, as well as therapists. It will be particularly useful if the child is assessed by a variety of individuals who see the child in different situations. Behavior a child exhibits at home may differ from those exhibited at school or in the swimming pool. Combine all assessment screening results for the best picture of a child's movement coordination and control.

Table 1

*Developmental Coordination Disorder Screening Matrix**

Name: _____ Date: _____

	Behavior	Frequency				
		Always	Almost Always	Sometimes	Almost Never	Never
SKILL DEVELOPMENT	1. Learns new skills quickly 2. Trips or falls while performing land tasks 3. Follows verbal directions easily 4. Seems to perform skills slowly 5. Follows demonstrations easily. 6. Has below average scores on fitness tests. 7. Handles equipment with ease 8. Has excuses for not participating 9. Walks, runs, jumps easily 10. Looks uncomfortable while performing Comments:					
GROUP BEHAVIOR	11. Is attentive in instructional settings 12. Makes jokes about own performance 13. Can demonstrate skills for others 14. Behavior is disruptive in a group setting 15. Uses practice time wisely Comments:					
PEER RELACIONSHIPS	16. Is usually one of the last persons chosen for a group activity 17. Is chosen to be a leader or captain 18. Has few friends in the group 19. Participates in lots of different activities 20. Seems to with-draw from others during physical activity Comments:					

EMOTIONAL OUTLOOK	21. Enjoys physical activity 22. Gets easily discouraged 23. Responds readily to correction 24. Seems unsure of himself 25. Handles stress well 26. Gets angry frequently Comments:					
PAST ACHIEVEMENT	27. Has high grades in PE 28. Has negative reports from teachers 29. Had good school attendance 30. Has poor grades in manual dexterity subjects 31. Enjoys manual dexterity tasks 32. Avoids manual dexterity tasks Comments:					

* This checklist list is arranged so that if the individual has substantial coordination difficulties most of the even numbers will be checked always or almost always, and most of the odd numbers will be checked never or almost never. A scatter may indicate problems in any of the five sub-areas listed.

Medical Evaluation

If informal observations, comparison with developmental norms, and an initial screening of the child indicate a developmental coordination disorder may be present, the next step is a medical evaluation. A variety of medical conditions which include difficulties with coordinated movement exist as part of an individual's diagnostic profile (Kadesjo & Gilberg, 1999). These include, but are not limited to:

- | | |
|------------------------------|--------------------------------------|
| ADD/ADHD | Dysarthria |
| Alcohol abuse | Intellectual delay and/or disability |
| Amputation | Juvenile rheumatoid arthritis |
| Auditory impairment/Deafness | Learning disability |
| Autism | Muscular dystrophy |
| Cerebral palsy | Physical abuse |
| Concussion | Traumatic brain injury |
| Drug affects | Vision impairment/Blindness |

While many of these medical conditions are fairly easy to discern, some are not. Others may be discernable in more severe forms, but not in mild or early onset forms. When considering developmental coordination disorder, it is important to rule out existing medical conditions. Less easily discernable are deficits in

information processing. Wilson & McKenzie (1998) found greater deficiencies in visual-spatial processing in children with developmental coordination disorder. Again, the teacher of swimming is not in the position to make a medical diagnosis. Rather, the teacher of swimming can provide resource information to parents for them to share with the child's pediatrician.

Left undiagnosed, additional disabling affects can occur. For example, a diagnosis of developmental coordination disorder at age 7 years predicts developmental coordination disorder at age 8 years and restricted reading comprehension at age 10 years. Professionals need to acquaint themselves with developmental coordination disorder and its comorbidity so they can provide better services to affected children (Kadesjo & Gilberg, 1999).

Swim Activities

Coordination is not a discrete entity. Coordination has many different component aspects and manifestations, any or all of which can be included in swim activities to assist in development of coordination. Listed in random order, these include but are not limited to:

Hand-eye Coordination. The ability to integrate what the eye sees with motor activity of the hands and arms. Shooting a basket during water basketball requires hand-eye coordination. Moving the hand as part of swimming strokes also requires a degree of hand-eye coordination.

Foot-eye Coordination. The ability to integrate what the eye sees with motor activity of the feet and legs. Performing a springboard diving hurdle and landing on the very end of the springboard requires foot-eye coordination. Learning how to perform the kick of different swimming strokes also requires foot-eye coordination.

Arm-leg Coordination. The ability to move arms either with or in opposition to the legs. The breaststroke arm and leg movements require a type of symmetrical arm-leg coordination while front crawl arm and leg movements use an alternating form of coordination.

Total Body Coordination. The ability to combine arm action, leg action, and head-body turning to accomplish a task. Swimming front crawl with rhythmic breathing is one example of total body coordination.

Object Manipulation Coordination. The ability to use objects in an organized fashion to accomplish a specific purpose. Dressing before and after swim

requires object manipulation coordination. Using a kickboard also involves object manipulation coordination.

Further complicating having a developmental coordination disorder is the circumstance that impairment in any of the following factors also can affect coordination or lack thereof:

Perceptual-Motor Ability. Elements of balance, body image, laterality, directionality, spatial orientation, and reaction time when not part of a primary diagnosis of a learning disability may relate to DCD (Grosse, 2007). A child who cannot recover from a supine float, but rather flails randomly may have a spatial orientation problem which can be one of the perceptual-motor deficits.

Physical Fitness. Elements of physical fitness include muscular strength and endurance, cardio-respiratory function, flexibility, and body composition when not part of the primary diagnosis of a disability such as muscular dystrophy. A child who tires easily and much ahead of his or her peers may lack adequate muscular strength and endurance, a physical fitness component.

Sensory Integration. Processing different sensory inputs with past experience to generate appropriate motor output requires sensory integration. A child who does not recognize a physical cue and relate that cue to past instruction may have a sensory integration deficit.

Language Acquisition. The ability to receive, comprehend, and express information through spoken, written, or sign symbols, when not part of a speech and language disability, is part of language acquisition. A child who never seems to follow directions may have a receptive language deficit, part of a larger language acquisition problem.

Memory. The ability to utilize feedback and past experience in modifying motor behavior requires memory, when not part of traumatic brain injury. A child who does not appear to remember and apply pool rules may have a memory deficit.

Environmental Opportunity. Environmental opportunities involve nutrition (affecting obesity/body fat), safety (affecting movement environments), instruction (affecting feedback during motor development), security (affecting self-confidence in movement), cultural mandates (affecting clothing appropriate for movement, as well as beliefs about approved activities).

Selecting Developmentally Appropriate Swim Activities for DCD

Given the incidence of developmental coordination disorder as well as the prevalence of generalized coordination problems that can exist in school age children, it is advantageous to include coordination enhancing activities in all instructional swim programs. This can be done in a variety of ways. No matter what the age level or swim skill level of participants, two factors are critical:

Selection of Developmentally Appropriate Motor Activity

Selecting an advanced or complex activity for students who have not mastered the basics will only lead to frustration. It is critical to begin with activities that will be almost automatically successful and gradually progress to more advanced motor patterns and skills.

Emphasis on Preferred Performance of the Motor Skill Involved

Participation just “for fun” is great for leisure. However, instructional swim classes should be educational which implies the learning should include constructive instructional feedback on the efficiency and effectiveness of the performance. Coordination depends on mastery of earlier motor patterns and skills. Without that mastery of fundamental patterns and coordination, more advanced and complex coordination will not be acquired.

Warm-up and Fun. Activities to improve coordination can be included in swim instruction in a variety of ways. Warm-up activities as well as games and fun times could include:

Fundamental Gross Motor Patterns. These could include walking, running, jumping, skipping, galloping, and side sliding in shallow water.

Manipulative Gross Motor Skills. Using objects such as balls or rings to throw, catch, kick, hit, or retrieve are types of manipulative motor skills.

Fine Motor Skills. The use of small muscle groups mainly in the fingers, hand, and arm to grasp, release, place, wring out/twist, or manipulate small to medium sized objects involves fine motor skills.

Be specific about the component parts of each activity. For example, a relay race should be more than just a back and forth in the relay. Specify the motor pattern such as “hop across and jump back” the shallow end of the pool. Add a manipulative motor skill such as “toss and catch a tennis ball to yourself while hopping and jumping across the shallow end of the pool.” You may include a fine motor component such as “use only one hand (or one leg) to swim.” Start with just one specific component and gradually add specific challenges as children are successful. Vary the activity each time to keep interest and provide additional task practice.

These same recommendations apply to water play and water learning activities. Specifying which hand to use, providing equipment in a variety of sizes, shapes, and colors all can add variety as well as reinforce skills. Integrating physical fitness into tasks will assist children in developing not only basic motor patterns, but also muscular strength and endurance, flexibility and cardio-respiratory capability to apply and sustain more difficult motor patterns. (Grosse, 2007).

Select games that are similar to land games. This will allow for taking advantage of transfer of learning. In addition, this will provide the child with developmental coordination disorder additional practice time. The enjoyable environment of the swimming pool can often facilitate success in a land activity that has previously proved difficult. Choose games that include the use of different equipment. This can stimulate hand-eye or foot-eye coordination. Pool equipment is often more user friendly because it is light and floats in the water. This will encourage the individual with coordination problems to try a previously unpopular activity.

Instruction and Practice. While some individuals can learn and master swim skills by following general group instruction and watching and imitating peers, children with coordination deficits may not be able to do so. For these individuals, more detailed instruction and feedback is necessary as is. During the initial instruction phase it will be helpful if the teacher will:

- Include multiple demonstrations, both on land and in water.
- Make demonstrations as specific as possible, moving slowly and precisely with no extraneous movements.
- Add cue words to demonstrations, simple words and or two- to three-word phrases that are easy to remember and mentally repeat.
- Ask swimmers to repeat cue words back, thus insuring hearing and recognition of the cues.
- Allow for swimmers to explore movements on land and then again in water. This will provide opportunities for hands-on acquisition of more efficient and effective movements.
- When practicing on land, ask the swimmer to say the verbal cues as the skill is practiced.
- Provide positive, precise, and constructive feedback to allow more successful movement.
- When providing feedback, explain what the swimmer should be doing rather than telling the swimmer only what he or she was not doing as requested.
- Teach small component parts of a skill or stroke one part at a time, adding parts as mastery occurs.

- Teach parts of combined skills independently, prior to combining into the whole skill or stroke.
- Pair swimmers with each other, asking each to cue and/or give positive and constructive feedback to his or her partner.
- Provide a wide variety of practice opportunities with a variety of simple to more complex activities that the swimmer can choose for themselves. Repetition for repetition's sake is boring and may only emphasize inadequacy.
- When using swim lanes, assign swimmers needing feedback to the lanes closest to the deck for easy communication.
- Provide feedback as soon as a need for correction is detected. Waiting for completion of laps of error swimming may reinforce the errors, but also result in confusion for the swimmer during the motor learning phase.

Extensive drill and practice activities are important especially for children with developmental coordination disorder. As not every child will need the same amount of instruction and practice, this means a swim teacher must structure class so that more advanced students are challenged by more complex or difficult drills while other students participate in simpler activities that are more instructionally intensive. This can be accomplished in a variety of ways, including:

Use Learning Stations for Skill Practice. When rotating from station to station, start those needing more instruction at an easier station, staggering rotation times so that more time is spent at the rotation where the students needing more instruction spend more time at that station and less time as more difficult stations.

Vary the Size of Practice Groups. The students needing more practice and feedback should be in smaller groups, perhaps with a single classmate, so that more individual attention and practice time can be given.

Provide Individualized Feedback at Each Station. Individualized feedback to each swimmer, especially those who may have DCD, will enhance skill acquisition.

Conclusion

While developmental coordination disorder (DCD) has typically been diagnosed in childhood, children of almost any age can exhibit coordination difficulties that can affect learning and performance of swim skills and patterns. Through careful planning and lesson structure, teachers of swimming can include activities designed to enhance coordination while reinforcing aquatic participation. Statistics show the size of the population of individuals with developmental coordination disorder or generalized coordination deficits means any teacher of swimming will likely have swimmers with coordination deficits. This warrants attention be given to this issue.

Everyone deserves a chance to develop lifelong aquatic participation skills in spite of childhood coordination problems.

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