

Kick, Stroke and Swim: Complement Your Swimming Program by Engaging the Whole Body on Dry Land and in the Pool

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Historically, public, private and charter schools were the only places where children received swimming instruction and water safety education. However, liability concerns, lack of access to swimming pools, and budget cuts have caused many schools to eliminate swim programs. These issues have caused schools to change their curricula, which has decreased the quality and the importance of school-based learn-to-swim programs. Still other issues are preventing children from learning how to be safe in and around water and from learning basic survival swimming skills. Additional concerns include the lack of certified swim instructors and lifeguards, the lack of suitable aquatic facilities, and the financial barriers preventing schools from offering aquatics education. Furthermore, physical education programs struggle with limitations of space, time, large class sizes and student readiness (see Table 1).



Table 1. Barriers to Swim Instruction

- Limited pool space or no pool in the school
- Schools not able to afford to build and/or maintain a pool
- High cost of using community pools
- Difficulty hiring certified learn-to-swim instructors
- Difficulty hiring lifeguards during school hours
- Transportation issues between schools and community pools
- Lack of time in the physical education curriculum, especially at the elementary level where many schools do not meet their state's required number of minutes for physical education
- Self-confidence issues, such as body image and students not wanting to be judged by their peers

As a result, instructors have often been forced to find alternatives for teaching swimming skills, despite the recommendation from SHAPE America – Society of Health and Physical Educators that swimming should be part of a well-rounded physical education curriculum (National Association for Sport and Physical Education, 2003).

Swimming is a great all-around exercise with many benefits, but aquatic skills are not acquired easily and require instruction and training. Swimming incorporates complex

Table 2. Potential Benefits of Swim Instruction

- Helps learner to develop comfort in the water
- Introduces learner to the water
- Promotes stroke development
- Shifts responsibility from the parent/guardian to teach the child to swim
- Reduces parent/guardian stress
- Helps learner feel safe/secure in the water
- Increases physical activity
- Increases physical fitness
- Prepares learner for competitive swimming
- Promotes socialization for young children
- Provides health and fitness-related benefits
- Promotes lifetime fitness development
- Reduces the risk for drowning
- Boosts development of the whole child
- Improves motor development
- Accelerates cognitive development
- Increases memory capacity
- Expands cerebral communication
- Strengthens social confidence
- Enhances neurological development

movements that the novice or nonswimmer does not naturally possess (Holmér, 1992). To swim efficiently, one must have technical skill, coordination, muscular balance and at least a minimum level of fitness (see Table 2 for additional benefits of swim instruction). Due to its unique coordinated movements and its potential to be a life-saving skill, swimming instruction needs to be provided and developed early, revisited and practiced regularly. Studies have shown that long breaks between practice sessions reduce skill acquisition. In some cases, breaks from skill practice longer than three weeks significantly reduce retention and may cause complete loss of previously learned skills (Schmidt & Lee, 2005). It is essential for students to continue participating in swim lessons and other swimming-related activities. However, lack of time and lack of resources render schools unable to continually offer these programs to their students. Hence, there is a need for an innovative teaching approach for swim instruction. The purpose of this article is to offer a unique teaching tool for instructors — including physical educators and swim instructors in community programs, on athletic teams, and in virtual education — so students will be able to develop basic skills for swimming and water safety.

Complement Your Swimming Program with Dry-Land Activities

There is limited information in the literature regarding strategies for practicing swim strokes and techniques on dry land. But these strategies give all levels of swimmers — from beginner to competitive — a unique opportunity to practice the individual components of each stroke in a way that will enhance skill development and refinement. Traditional dry-land training for swimmers consists of flexibility, muscular endurance, strength training and cardiovascular fitness activities. According to Mike Mejia, from the U.S. Swimming Association, the five traditional and most effective dry-land exercises for swimming include planks, stability-ball reverse flies, goblet squats, stability-ball Russian twists with a medicine ball, and push-ups (U.S. Swimming Association, n.d.). Unfortunately, although many of these dry-land training activities provide swimmers with improved fitness levels, they do not assist with swimming-stroke development or skill acquisition (Sterlin, 2001). The Kick, Stroke and Swim (KSS) program has the potential to offer an alternative for physical education programs with limited use of a pool, overcrowded classes, and hesitant or resistant students. Implementing the KSS program as part of a regular swimming class and using rotations for students in and out of the pool would greatly enhance instructional opportunities. In addition, the KSS program provides students with a chance to practice skills without breathing and buoyancy challenges that affect initial performance. In the KSS program, students develop a level of comfort with swimming strokes practiced on a physioball on the pool deck before they enter the water.

The KSS program engages students in swimming-skill acquisition and fitness training by using a variety of modalities,

Table 3. The Use of Physioballs in Swim Instruction

- The use of physioballs is not new to the swimming world.
- Many swim instructors and coaches have employed physioballs in developing core and functional strength.
- Successful swimmers must have maximum core strength to stay streamlined longer in the water. If their abdominal muscles fatigue, their hips will drop, causing added resistance.
- Using physioballs allows the swimmer to maintain fluidity and momentum, which transfers to the water easier than typical weight-training programs.
- The use of a physioball also adds a rotational component pertinent to proper swimming technique.

strategies and techniques on dry land. It uses versatile pieces of balance and stability equipment — such as physioballs (see Table 3), playground balls, therapy rollers, therapy half-rollers and BOSU balls (see Figure 1) — to assist swimmers of all levels with stroke execution and refinement. The KSS program is designed to be used by educators before, during and after direct, in-water instruction. It is also used to complement the water experience for skill refinement and retention and as an alternative for those who do not have access to a pool. A lack of shallow water can affect and restrict participation of students in large classes. Learning specific strokes and techniques on dry land might reduce the initial fear of the water for some students.

Another advantage is more practice time with stroke refinement. Additional practice tasks might be used to include breathing as part of the stroke mechanics, which would be an opportunity to correct performance technique. In these instances, students can see, feel and hear specific instruction. Programming for classes with a large number of students might include endurance swims and refinement work on physioballs through a rotating system, with some students on the pool deck and some students in the water. This rotation could be used as

a recovery station after an endurance swim for some students, while staggering the start times of others. Students who are unable to participate in actual pool activities due to infection, menstruation, improper attire or other factors could use the KSS method to practice skills and not be relegated to “sitting on the sidelines.”

Traditionally, stability-ball training has been effective in building balance, stability and pillar strength. Practicing swimming skills and techniques on stability equipment not only improves the overall strength and fitness of the swimmer, but it also aids in swimming-skill acquisition. Swimming strokes can be practiced on stability balls on the pool deck or any other land-based space, such as during physical education class or at home. The KSS program also assists with demonstrating proper technique and then assessing swimmers’ stroke technique and improvement in each skill’s components. Quality on-deck instruction and practice ensure that all students can receive verbal feedback with cues while the instructor provides needed manipulation of mechanical movement. The KSS program can also be used with peer assessments and as a tool that parents may use to assist their child at home. The program provides specific skill task cards, techniques, strategies and ideas for educators and swim instructors. Descriptions of six stroke development and skill acquisition techniques are described and illustrated in the following section.

Stroke Development and Skill Acquisition

Front crawl — Step 1

Abdominals should lie evenly on top of the ball. One hand is on the floor for stabilization. Both legs/feet are on the ground for stabilization. Head is in a neutral position. Face should be looking down, with eyes looking forward and down. One arm extends, straightening, fingertips first (see Figure 2).



Figure 2. Front crawl — Step 1

Front crawl — Step 2

Abdominals remain evenly on top of the ball. Both legs are extended and straight with toes pointed. One arm is extended above the head. One hand is on the floor for stabilization. Head is in a neutral position. Face should be looking down.



Figure 1. BOSU balls

Both legs should move up and down in a quick, short motion (see Figure 3).



Figure 3. Front crawl — Step 2

Breaststroke — Step 1

Begin in a *front crawl* position. Face should be looking down. Arms should be in “scoop the ice cream” position (from the armpits). Palms are turned slightly out. Draw a line from streamline position to armpits with thumbs, with elbows beginning to bend (see Figure 4).



Figure 4. Breaststroke — Step 1

Breaststroke — Step 2

Abdominals should lie evenly on top of the ball. Both hands are on the floor for stabilization. Head is in a neutral position. Face should be looking down. Knees are straightened; legs form a “V”; toes are pointed (see Figure 5).



Figure 5. Breaststroke — Step 2

Elementary backstroke — Step 1

Mid-to-low back (lumbar to sacral) should lie evenly on top of the ball. Both feet are on the ground for stabilization. Head is in a neutral position. Face should be looking up, with chin toward the sky. Squeeze (snap) arms down against your sides. Cue word is “soldier” (see Figure 6).

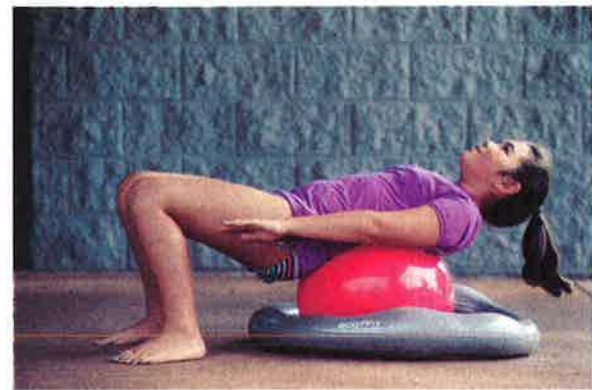


Figure 6. Elementary backstroke — Step 1

Elementary backstroke — Step 2

Mid-to-low back should lie evenly on top of the ball. Head is in a neutral position. Face should be looking up, with chin toward the sky. Hands are on the floor for stabilization. Begin to separate the knees (see Figure 7).



Figure 7. Elementary backstroke — Step 2

The Kick, Stroke and Swim (KSS) program provides students with a chance to practice skills without breathing and buoyancy challenges that affect initial performance.

Conclusion

The American Academy of Pediatrics (AAP) issued new policy guidelines calling for children as young as four years old or younger to receive swimming lessons (AAP, 2010). Providing all children with basic swimming and safety instruction and skills should be a critical goal for communities and schools. All children should have adequate opportunities to learn to swim and/or be provided with an opportunity to overcome their fear of water. In addition, the Centers for Disease Control and Prevention (CDC) contributing editor Julie Gilchrist has suggested that public health and medical professionals encourage and support swimming lessons as an important life-saving skill (CDC, 2012). Research has also supported the notion

that knowledge of swimming skills might reduce the risk for drowning among older adults and in other settings.

The KSS land-training program has the potential to be an intervention used in the physical education curriculum, in learn-to-swim programs, and by parents in the home. The KSS program provides strategies to practice swim strokes and techniques on land and gives all levels of swimmers a kinesthetic awareness of the individual components of each stroke that will enhance skill development. This land training provides an opportunity to improve practice sessions for swimmers. Effective instruction through the program also provides positive, immediate feedback to the swimmer. The skill checklist shown in Figure 8 can be used for reviewing student technique.

Dry Land-Training Practice Log				
Name: _____		Age: _____		
Please write the number of minutes spent on each activity; include any specific information, observations and comments for each skill practiced.				
Activities:	Date:	Date:	Date:	Date:
Front float				
Flutter kick (front)				
Front crawl (arms)				
Front crawl (arms & legs)				
Extension activities (front)				
Back float				
Flutter kick (back)				
Back stroke (arms)				
Back stroke (arms & legs)				
Extension activities (back)				
Breaststroke kick (whip kick)				
Breaststroke (arms)				
Breaststroke (arms & legs)				
Extension activities (breaststroke)				
Whip kick (back)				
Elementary backstroke (arms)				
Elementary backstroke (arms & legs)				
Extension activities (elementary back)				

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Figure 8. Skill checklist



When assessing skill acquisition, instructors can use the sample checklist provided or modify each section as needed.

Knowledge of swimming skills and how to refine strokes offers students the opportunity for a lifetime of water-based physical activity and enjoyment. The KSS program is a practical and common-sense means of providing easy access to swimming skills. The program has been implemented in a variety of physical education settings, private swimming programs and college-level aquatic lessons. Although additional studies are needed to further explore both the short- and long-term effects that the KSS program can have on accelerated stroke development, many physical education teachers in several states have identified improved outcomes in skill acquisition. Land drills allow the teacher to provide specific, immediate feedback while giving form correction. The KSS program complements aquatic instruction by engaging students in whole-body swimming skills on dry land and in the pool.

For more information about the KSS program, the authors encourage readers to visit the following website: <http://www.hawaiiswimming.org>. This website includes easy-to-use task cards when implementing the KSS program under the “Education” tab. For a direct link, readers should visit http://www.hawaiiswimming.org/land_training.php.

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