



CONCEPT OF FUNDAMENTAL MOTOR SKILLS

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ABSTRACT:

Motor behavior—specifically motor control, motor learning, and motor development—traces its roots to psychology. These fields emerged in the mid-1960s and 1970s from the parent discipline of psychology and developed identities as sub disciplines in the growing academic discipline of physical education, now referred to as physical education, exercise science, and sport. Motor behavior is a broad term, encompassing motor control, motor learning, and motor development. Motor control is the study of the neural mechanisms and processes by which movements are learned



and controlled. Motor learning is the acquisition of motor skills as a consequence of practice and experience. Motor development is the study of the origins and changes in movement behavior throughout the lifespan. Many theories and models have been advanced to de-scribe learning. One popular theory is the information processing model. According to this model, learning and performance of skills can be described as a series of information-processing tasks consisting of input, decision making, output, and feedback. Individuals pass through three stages when learning a motor skill: cognitive, associative, and autonomic. Learning is influenced by readiness, motivation, reinforcement, and individual differences. To facilitate motor learning, physical education, exercise science, and sport professionals should incorporate concepts from motor learning into the design of their practices. Fundamental motor skills form the foundation for learning more complex skills. In developing these fundamental skills, individuals move through three stages: initial, elementary, and mature. Professionals should understand how motor skills develop so they can design learning experiences to facilitate their acquisition.

KEY WORDS: *Fundamental Motor Skill, Locomotors movement, Non Locomotors Movement , Manipulative Skills.*

INTRODUCTION :

Fundamental motor skills encompass a broad range of skills that form the foundation for successful participation in games, sports, dance, and fitness activities. These skills can be categorized into locomotors, non locomotors, and manipulative skills. Locomotor skills are those in which' the body moves through space and include running, jumping, and sliding. Non locomotors skills, or axial movements, are typically done from a relatively stationary position, using a stable base of support. Generally performed in place, non locomotors skills include bending, stretching, and pushing. Manipulative skills are skills used in handling objects; throwing, catching, striking, and kicking are

examples of manipulative skills. Fundamental motor skills are combined to create the specialized movement necessary in many activities. For example, the softball throw requires a combination of sliding (locomotor skill) and throwing (manipulative skills) and twisting (non locomotor skill). The triple jump in track is a combination of a hop, step, and jump. Other specialized sport skills require more complex combinations of movements. The next section contains a brief analysis of selected locomotor, non locomotor, and manipulative motor skills. As children learn the skills, they should also acquire knowledge of the critical elements important to skill performance. This knowledge increases children's understanding of the technique and forms the foundation for future learning.

1. LOCOMOTOR MOVEMENTS:

The following locomotor skills are discussed: walking, running, jumping (for distance and height), hopping, leaping, skipping, sliding, and galloping. These are the skills most commonly used by elementary school children. Opportunities for students to explore and use these skills by themselves and in combination with non locomotor movements create a sufficient foundation for more complex movement skills.

(i) Walking: Walking involves the transfer of weight from one foot to the other while moving. The weight of the body is transferred in a forward direction from the heel to the ball of the foot and then to the toes. The feet should move parallel to each other, with the toes pointing straight ahead. One foot is in contact with the ground at all times; this is the support foot. The body is erect, with the head up. The arm action is coordinated with leg action; the opposite arm and leg move in the same direction. These movements should be rhythmic and natural.

(ii) Running: Running is similar to walking in several ways. However, some critical differences exist. In running, the speed of the movement is faster. The length of the stride is longer, the flexion and extension of the legs are greater, and there is a momentary period of flight when the body is not supported at all. The body leans slightly forward to place the center of gravity above the front foot in the stride. The arms swing forward and back, opposing the legs, and contribute power to the movement.

(iii) Jumping: Jumping varies according to the goal of the task. Jumping for distance and jumping for height are common skills. The standing long jump, for example, is done by bending the knees and lowering the upper body into a crouched position. As the body rocks back on the feet, the arms are brought down and beyond the hips. At takeoff, the forward and upward swing of the arms is coordinated with the powerful extension of both the feet and legs. The body is propelled forward as if reaching for an object in front of the body. The knees bend in midair so that the feet do not touch the ground prematurely. The landing is on the feet, with the knees bending to absorb the impact, and the body falling forward.

(iv) Hopping: Hopping involves forcefully pushing off the ground from one foot, a brief suspension in the air, and landing on the same foot. The push-off from the ground is made from the toes and the ball of the foot (supporting foot), with the knee of the opposite foot bent and the foot off the ground (non supporting foot). The arms are thrust upward to aid in body lift. The landing is on the toes, ball, and heel of the foot in that order. The knee is bent slightly to help absorb the shock of the landing. To aid in balance, the arms and non supporting foot are used. Hopping should be practiced with both feet.

(v) Leaping: Similar to the run, a leap is a long step forward to cover distance or to go over an obstacle. It is an exaggerated running step, with the stride longer and the body projected higher in the air. In the leap, the toes of the takeoff foot leave the floor last, and the landing is on the ball of the opposite foot. The arms should be extended upward and forward to give added lift to the body during the leap. Often the legs are extended in the air. Before the execution of the leap, usually a short run is taken to gain momentum for the leap itself.

(vi) Skipping: A skip is a combination of a step and a hop, with feet alternating after each step. A long step is taken on one foot, followed by a hop on the same foot, and then a step with the opposite foot. Fundamental motor skills are the foundation for skills used in many different sports activities. Z--- / foot, again followed by a hop. Balance is aided by swinging the arms in opposition to the legs.

(vii) Sliding: A slide is a sideways movement in which the weight of the body is shifted in the direction of the slide. In a slide to the right, the right foot steps sideways (leading foot); then the left foot (trailing foot) is quickly drawn close to the right foot. Weight is shifted from the lead foot to the trailing foot. The same foot continues to lead in sliding movements. The body maintains an up-right posture and the arms are used for balance. The legs should not be crossed. The slide should be practiced in both directions.

(viii) Galloping: Galloping is similar to sliding, but the movement is performed in a forward direction. One foot leads in the forward direction (leading foot). After a step by the leading foot, the rear or trailing foot is brought quickly forward and close to the lead foot. The stepping leg is always the lead leg. Opportunities to lead with the right foot and with the left foot should be included in practicing the gallop.

2. NONLOCOMOTOR MOVEMENTS:

Non locomotor movements are generally performed using a stable base of support. The non locomotor movement skills discussed are bending stretching, twisting, turning, pushing, pulling, and swinging. Generally, they are performed in place and can be done from a variety of body position: (e.g., standing or sitting). They can also be combined with locomotor movements.

(i) Bending and Stretching: Bending is a movement occurring at the joints of the body in which body parts are brought closer together. For example, by bending the body at the hips to touch the toes, a person is decreasing the angle between the upper and lower body at the hip joint. This is called flexion. Bending movements may be in several directions: for example, forward, backward, side-ways, or in a circular motion. The range of bending movements is determined by the type of joint at which the movement occurs. Ball-and-socket joints permit the greatest movement. Hip joints and shoulder joints, are examples of ball-and-socket joints. Hinge joints permit only backward and forward movements. The knee joint is a hinge joint. A stretch is an extension or hyperextension at the joints of the body. Stretching is the opposite of bending. Most movements require complete extension only where the body parts adjacent to the joints are at a straight angle (180°). However, in movements such as the wrist cock before a throw, hyperextension is needed to give added impetus to the throw. Bending and stretching are necessary to maintain flexibility—the full range of movement about a joint. Bending and stretching are common to most of the activities of daily life (e.g., dressing and bathing), and they are very important to physical education activities. Teachers should provide daily activities in which these skills can be practiced and refined.

(ii) Twisting and Turning: Twisting is a rotation of the body or a body part around its axis while maintaining a fixed base of support. Twisting movements can take place at the neck, shoulders, spine, hips, ankles, and wrist. The body can be in different positions: for example, standing or lying down. As in bending and stretching movements, the range of a twisting movement is determined by the type of joint. Turning generally refers to a rotation of the body around in space. When the body is turned, the base of support is shifted from one position to another. Jumping up and landing facing the opposite direction and pivoting are examples of turns. A twisting action is typically used to initiate a turn. Turns should be practiced in both directions, left and right or clockwise and counter clockwise.

(iii) Pushing and Pulling: Pushing is a forceful action directed toward increasing the distance between the body and an object. A push can be used to move an object away from the body or the body away from an object. Pushing an opponent away in a wrestling match or a box across the floor are two examples of pushing. Proper body position enhances the effectiveness of a push. A forward stride position enlarges the body's base of support, and bending the knees lowers the center of gravity and increases the body's stability. Proper body alignment helps prevent back injuries. Pulling is a forceful action designed to decrease the distance between the body and an object. A pull brings the body and the object closer together. As in pushing, widening the base of support and lowering the center of gravity increase effectiveness. In a tug-of-war, participants widen their base of support and dig their heels in as they try to pull their opponents across the dividing line. Partner resistance exercises and rowing use both pushing and pulling. Steady, controlled movements are recommended for both pulling and pushing.

(iv) Swinging: A swing is a circular or pendulum movement of a body part or of the entire body around a stationary center point. The center point may be a joint, such as the shoulder in swinging the arm; or an outside axis, such as the swing on a high bar. When the force necessary to hold a body stationary is released, the force of gravity will cause that body part to swing. In most body movements, the force of muscular contractions is necessary to maintain body swing. Swinging movements should be continuous, rhythmical, and free flowing.

3. MANIPULATIVE SKILLS:

Manipulative skills involve the propulsion and control of objects. The body is used to apply force to an object and to absorb force when receiving or controlling an object. The manipulative skills of throwing, catching, kicking, and striking are briefly described.

(i) Throwing: An object may involve the use of the underhand, sidearm, or overhand pattern. Since the overhand throwing pattern is most frequently employed by children and adults, this movement will be described. When throwing, the ball is held in the fingers of the throwing hand. As the throwing action is initiated, the ball is brought back and the body rotates so the opposite side is toward the target. Weight is transferred back to the foot on the same side as the throwing hand. The arm is bent at the elbow, and the elbow leads slightly as the arm is brought forward for the throw. As the arm accelerates, a step forward onto the opposite foot is taken and the hips rotate forward. The arm quickly extends, the wrist snaps, and the ball is released. The arm follows in the direction of the throw, coming down and across the body.

(ii) Catching: Catching involves the use of hands to stop and gain control of an object. As the object approaches, the individual makes a judgment about where it can be intercepted and moves to a location directly in line with the object, placing the hands in a position for effective reception. The eyes follow the flight of the object, and both hands reach out toward it. The object is grasped by the hands and pulled in by the arms and hands toward the body to absorb the object's force.

(iii) Kicking: Kicking is imparting force to an object by the foot and the leg. The kicking of a stationary object is the foundation for the kicking of a moving object and for punting. In kicking, the supporting foot is placed alongside the object. The kicking leg, knee bent, moving freely from the hip, swings through an arc toward the object. As the foot contacts the object, the knee is extended and the body leans back for balance. The kicking leg follows through, continuing its movement toward the direction of the flight of the object. The arms, relaxed, move in opposition to the legs. The eyes focus on the object throughout the kick.

(iv) Striking: Striking involves using a body part (e.g., hand) or an implement (e.g., paddle, racquet, bat) to apply force to a stationary or moving object. The length, size, and weight of the implement as well as characteristics of the object being struck influence the nature of the movement pattern. Kicking, described earlier, is also considered a striking task. For the striking action typically seen in batting, the body is positioned perpendicular to the line of flight of the oncoming ball. The feet are placed in a forward-backward stride position, approximately shoulder-width apart. The trunk is rotated back, the weight is shifted to the rear foot, and a backswing is taken. The flight of the ball is followed by the eyes until just before making contact. Body weight is shifted onto the forward foot in the direction of the intended flight of the ball. With the hips leading, the hips and trunk are rotated in the same direction as the weight shift. Arms move forward into contact, and the follow-through action occurs in the direction of the line of flight.

Fundamental motor skills are the foundation for the development of specialized game, sport, dance, and fitness activities. These skills are the building blocks for the future. Acquisition of skills for lifetime participation begins with the mastery of these fundamental motor skills. All children, the skilled and the unskilled, need sufficient opportunities and a variety of experiences to master these important movement basics. (See the online learning center for more information on the development of motor skills.)

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