

General Motor Ability Test

Purpose

To demonstrate that a general motor ability does not exist by comparing the performance of different people on both static and dynamic balancing tasks.

Background

Chapter 6 introduces the discredited notion that people have a general motor ability that can be used to predict performance across a range of tasks. Table 6.3 in your textbook presents the results of a study that measured performance on a variety of static and dynamic balancing tasks and then correlated the scores to determine the strength of the relationships between any two tasks (Drowatsky & Zuccato, 1967). If people did have a general motor ability, it would be expected that they would perform similarly on all of the tasks. The results did not support this idea, showing that the correlations were very low (indicating a weak relationship) and sometimes even negative (indicating that a higher score on one task was actually associated with a lower score on another).

Instead of performing a correlation analysis as reported in your textbook, a general motor ability test can also be conducted by ranking the performance of several participants from best to worst for each balance task. This can be accomplished by timing each participant individually using a stopwatch. Because there is no such thing as a general motor ability, results typically reveal that any person who is the best at one of the tasks is not the best at the others.

Equipment

1 stopwatch
1 tape measure
1 textbook
Masking tape

Instructions

The tasks you will complete for this lab will be slightly different than those listed in table 6.3, but three of them will assess static balance and three will assess dynamic balance.

You will work in groups of at least four students (seven is better if possible). One student will be designated as the official judge and recorder for your lab group. All other students will serve as participants. Each participant will be tested individually. When not being tested, each participant will help the judge or recorder monitor technique of other participants. You will collect three trials of data for each of the tasks. You can practice each task a couple of times before the first official trial. It is very important that all participants follow the procedures for each task in the same manner.

Once all lab members have been tested, you will rank your performances by comparing the best scores of each participant. A description of each task follows.

Stork Stand

Stand on your preferred foot while hooking the instep of your other foot behind the knee of your support leg (your bent knee points forward). Place your hands on your hips and rise to the ball of your foot. Your score is the amount of time you can hold the position with good form.

Diver's Stand

Stand with your feet together and your arms extended in front of you (90° shoulder flexion). Close your eyes and rise to the balls of your feet. Your score is the amount of time you can hold the position with good form.

Heel Stand

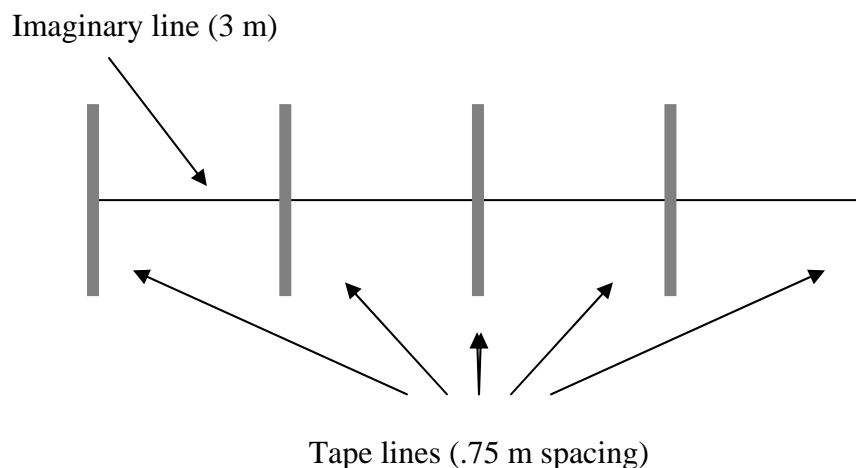
Get into a *ready position* with your feet about shoulder-width apart. Crouch slightly so that your hands rest on your knees. Keep your head up and rock back onto your heels so that your toes do not touch the ground. Your score is the amount of time you can hold the position with good form.

Sideward Leap

Use tape to mark two spots on the floor about 1 meter apart. Balance on your left foot on the left tape mark. Leap sideways to the other mark, landing on your right foot. Balance for a *two-count* and then bend down to touch the outside of your right ankle with your right index finger (while still balancing). Stand up again and after another *two-count*, leap back to your left, bend down, and touch the outside of your left ankle. Stand up and continue this process. Your score is the number of times you touch an ankle in 30 seconds without falling. If you fall, move back to the starting point and begin the action again. Continue counting where you stopped when the fall occurred. Technique is important. Make sure that you move from one line to the next in a leaping motion and that you follow the procedures for bending to touch your ankle.

Bass Stepping-Stone

Use tape to mark five lines (about 30 cm long) on the floor oriented so they are perpendicular to an imaginary line about 3 meters long. Space the five tape lines about .75 meter apart from one another. See the following diagram.



Begin a trial by balancing on the ball of one foot on the first spot. Leap forward to the next spot, landing on the ball of your other foot. Hold your position for a *two-count* (count out loud) and then leap to the next mark. Continue leaping to each spot, switching back and forth between your feet. When you get to the end, stay on one foot and turn around slowly by hopping, and return in the other direction. Your score is the number of lines you cross in 30 seconds. If you fall or fail to complete the *two-count*, move to the tape line from which you fell (or leapt too soon) and continue until time expires.

Book-Balancing Walk

Place a strip of masking tape (3 m long) on the floor. Beginning at one end of the tape, walk heel to toe while balancing a book on your head. Your score is the amount of time it takes you to walk the full length, turn around, and come back without dropping the book or stepping off the tape. If you drop the book, place it back on your head and continue from the point at which it was dropped.

Lab 6.1

Name: _____

Discussion

Describe what the rankings for your group illustrated about each person's range of balancing abilities across all six tests. Did your results match what would be expected based on the information presented in chapter 6? If not, discuss a few factors other than abilities that might have influenced the results.