MENTAL PRACTICE
Mental practice can be effective for learning skills, especially when combined with physical practice
Teachers, coaches, and therapists can apply mental practice to learning and performing motor skills.

- Gymnasts mentally rehearses routine before the event
- Paraplegic mentally rehearses walking down a flight of stairs
- Golfer mentally rehearses the upcoming shot
MENTAL PRACTICE

The cognitive rehearsal of a physical skill in the absence of overt physical movements

- It is not mediation
- It is not day dreaming

Involves imaging a skill or part of the skill
Mental Training Assessment (MIQ)

Use the scale and rate where you fall the following activities.

Record your 4 visual imagery and kinesthetic scores

6 and above average is high; 2 or below average is low
MIQ Test

5. Starting Position:
   Stand with your feet slightly apart and your hands at your sides.

   Action:
   Bend down low and then jump straight up in the air as high as possible with both arms extended above your head. Land with your feet apart and lower your arms to your sides.

   Mental Task:
   Assume the starting position. Attempt to feel yourself making the movement just performed without actually doing it. Now rate the easiness/difficulty with which you were able to do this mental task.

   Rating:

6. Starting Position:
   Stand with your feet and legs together and your arms at your sides.

   Action:
   Raise your right knee as high as possible so that you are standing on your left leg with your right leg flexed (bent) at the knee. Now lower your right leg so that you are again standing on two feet. Perform these actions slowly.

   Mental Task:
   Assume the starting position. Attempt to see yourself making the movement just performed with as close and vivid a visual image as possible. Now rate the easiness/difficulty with which you were able to do this mental task.

   Rating:

7. Starting Position:
   Stand with your feet slightly apart and your arms fully extended above your head.

   Action:
   Slowly bend forward at the waist and try and touch your toes with your fingers (or if possible, touch the floor with your fingers or hands). Now return to the starting position, standing erect with your arms extended above your head.

   Mental Task:
   Assume the starting position. Attempt to feel yourself making the movement just performed without actually doing it. Now rate the easiness/difficulty with which you were able to do this mental task.

   Rating:

8. Starting Position:
   Extend the arm of your nondominant hand straight out to your side so that it is parallel to the ground, palm down.

   Action:
   Move your arm forward until it is directly in front of your body (still parallel to the ground). Keep your arm extended during the movement and make the movement slowly.

   Mental Task:
   Assume the starting position. Attempt to see yourself making the movement just performed with as clear and vivid a visual image as possible. Now rate the easiness/difficulty with which you were able to do this mental task.

   Rating:

9. Starting Position:
   Stand with your feet slightly apart and your arms fully extended above your head.

   Action:
   Slowly bend forward at the waist and try and touch your toes with your fingers (or if possible, touch the floor with your fingers or hands). Now return to the starting position, standing erect with your arms extended above your head.

   Mental Task:
   Assume the starting position. Attempt to feel yourself making the movement just performed without actually doing it. Now rate the easiness/difficulty with which you were able to do this mental task.

   Rating:

Chapter 19
MENTAL PRACTICE AND IMAGERY ABILITY

- Mental practice effectiveness is related to one's imagery ability (Hall et al, 1983)
  - People with a high level of imagery ability will benefit more from mental practice than with a low level.
  - Measured by MIQ (Movement Imagery Questionnaire)
    - High visual/High kinesthetic group performed better.
TWO ACTS OF IMAGING

- Internal
  - “Images being inside their body and experiencing those sensations expected in actual situations”

- External
  - “Imaging the skill or part of skill from the perspective of an observer”
Internal & External
TWO ROLES OF MENTAL PRACTICE

- Improves the acquisition of motor skills

- Aids in performing a well-learned skill
  - A means of action preparation
  - A means of facilitating the storage and retrieval from memory of an action
MENTAL PRACTICE AIDS SKILL ACQUISITION

Mental practice combined with physical practice establishes optimal learning of motor skills.

- Physical practice and mental practice often involves only half as many physical practice trials as physical practice only.

- Why?

- Answer: All skills consist of both cognitive and motor components.
Mental Practice Benefits

- Rehabilitation setting
  - Used to improve walking balance in aged population
  - Improved postural form in patients with back pain.
  - Use in the therapy program of upper-limb hemiparesis due to a stroke

- Power training
  - Used to improve a 40-m bicycle sprint
Linden et al. Balance Study

- Used women 67-90 years of age.
- Task involved walking to a designated place via a activity course
- Eight days of training.
  - One group engaged in 6 minutes of mental imagery
  - One group did not engage in mental imagery
- Near and far retention test found imagery group walking balance was superior.
Posture Development

- 2 studies (Fairweather & Sidaway, 1993)
- Involved 17 years old males who had low back pain associated with lordosis & kyphosis
- 3-week training period where they visualized their buttock as unbaked loaves of dough and watch them slide downward toward their heels.
- Results showed improved postural form and reduction of pain
Hemiparesis Stroke Patient

- Mental practice with physical practice in a PT program involving a 56 year old male.
- Patients arm function had not improved since being discharged.
- Received 30 days of PT:
  - PT 3 days per week; 30 minutes
  - Mental practice 2 times per week after PT
- Results indicated improved wrist and finger movement, and prehersion.
Power Training Improvement

- Any motor skill where one needs to generate speed over a relative short distance.
  - Running,
  - Hockey, and
  - Bicycling sprints
- Mental practice combined with physical practice was better than just power training with out imagery.
Singer develop a five step learning strategy that integrated mental practice

- Step 1: Get ready physically, emotionally and mentally
- Step 2: Mentally imaging the performance
- Step 3: Concentrate on few critical cues
- Step 4: Execute the movement or activity
- Step 5: Evaluate the performance
Research Evidence

- Research has supported the use of this five step strategy
  - improved underhand toss accuracy, and
  - currently cited in many imagery research studies with Olympic athletes in both individual and team events.
Mental Imagery by Skilled Athletes

- Martins, Moritz & Hall (1999) review:
  - Improved free throw shooting
  - Improved 2 minute drill in football
  - Improved Batting in baseball
  - Rehearse routines in figure skating
  - Rehearse routines in wrestling
  - Improved putting performance in golf
  - Increased motivation to adhere to rehab program to manage pain
5 TYPES OF IMAGERY USED BY PERFORMERS

- **Motivational**
  1. Imagery related to a specific goal
  2. Imagery related to coping or mastery of challenging situations.
  3. Imagery related to feelings of relaxation, control of stress.

- **Cognitive**
  4. Imagery of performing specific skills
  5. Imagery of strategies related to an event
MENTAL PRACTICE THEORIES

- Neuromuscular Explanation (Jacobson)

- Cognitive Explanation
SUMMARY

- Mental practice is an effective aid for learning motor skills
- Use mental practice in combination with physical practice
- Neuromuscular and cognitive explanations for mental practice
- Mental practice is related to a person’s imagery ability