

ENLIGHTENED KEYBOARD TECHNIQUE

A DEFINITIVE MODEL FOR THE 21ST CENTURY

MTNA NATIONAL CONFERENCE, DENVER 2008

PANELISTS

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I. DEFINITION OF HEALTHFUL, INJURY-PREVENTIVE KEYBOARD TECHNIQUE

Healthful, “enlightened” keyboard technique is defined as the optimal coordination of the whole body, directed by the brain, with the instrument.

Two hallmarks of such a technique are

Optimal skeletal alignment

Efficient muscle use

II. ESTABLISHING A COMMON LANGUAGE & TERMINOLOGY BETWEEN SCIENCE & MUSIC

A. Remember and refer to the hallmarks of well-coordinated technique

Optimal skeletal alignment

Efficient muscle use

B. Language to Emphasize

tension (as necessary muscle) contraction

healthful technique

released (muscles)

alignment

efficient playing

smooth coordination

supple

stabilize

well-coordinated playing

Potentially Confusing Language

tension-free

healthy technique

relaxed (muscles)

posture (connoting rigidity)

effortless playing

graceful (connoting excessive motion)

loose, limp

fix, hold

relaxed playing

C. The Importance of Clear, Plain English

In order to build a common language, understandable by all, it is important to emphasize plain English wording and clear, specific and concise terminology. Avoid highly technical terminology or confusing, contradictory language in general.

III. EFFICIENT, WELL-COORDINATED BODY USE THAT HELPS PREVENT PLAYING-RELATED INJURY & MAXIMIZES ARTISTIC POTENTIAL

A. Optimal alignment and balance on sitting bones of the “central axis”

(spine/spinal cord and brain) as center of command and control of the periphery

- 1) Begin with reference point -- “neutral” balance and alignment of spine/neck/head over sitting bones, with released legs
- 2) Allow spine to lengthen naturally (not stretch or straighten)
- 3) Allow shoulders to remain released
- 4) Allow neck to be free of unnecessary tension
- 5) Allow head to be well-balanced on top of torso
- 6) When leaning forward on bench, rock forward on sitting bones with entire torso, instead of leaning forward from upper back and shoulders only

B. Optimal alignment of arms/hands/fingers for sound production

NOTE: The whole arm is usually in subtle but constant motion while playing. The optimal alignment defined herein is usually for the first note of multiple notes in any whole-arm cycle.

- 1) Support arms efficiently -- allowing upper arms to be pendulous and shoulder joint released when not stabilized for sound production
- 2) Release medial deltoid whenever possible for maximum mobility and ease of movement from the shoulder socket
- 3) Align bones of forearm (carpal) and hand (metacarpal) to form a natural arch for bearing weight at moment of tone production, usually forming a straight line on the top of forearm from crook of elbow to knuckle bridge (MCP joints).

IMPORTANT NOTE: There are historically slight variations on this alignment from one well-coordinated technique to another. Some approaches advocate a slight downward or upward slope of the top of the forearm from the elbow to the knuckles, rather than a line parallel with the ground. Such a variations are still within the realm of healthful alignment and range of motion.

- 4) In conjunction with the forearm bone alignment in 3, use the natural arch formed by the hand and finger bones for bearing weight at moment of sound.

C. Efficient muscle use

- 1) Continually allow muscles to release, refresh and recover while playing
- 2) Support whole arm efficiently with torso muscles by maintaining optimal spinal alignment
- 3) Support forearm efficiently, when pronated, with brachialis/biceps
- 4) Allow upper arms to be pendulous and shoulder joint released when not stabilized for sound production

- 5) Release medial deltoid whenever possible for power, maximum mobility, and ease of movement from the shoulder socket
- 6) Stabilize joints (shoulder, elbow, wrist, and fingers) only for weight bearing
- 7) Maintain relatively released joints for ease of movement (up and down, lateral and curvilinear) whenever possible
- 8) In general, use only the necessary amount of tension for the time needed
- 9) Use kinesthetic awareness to monitor and control muscle state at all times

IV. INEFFICIENT BODY USE PATTERNS THAT MAY LEAD TO TENSION, FATIGUE, PAIN OR INJURY AT THE INSTRUMENT

A. Torso/Upper Body

- 1) general imbalanced spinal alignment resulting in loss of torso support and compromise of neuromuscular system
- 2) failure to find optimal balance and mobility of torso on sitting bones
- 3) compressing torso, resulting in inadequate breathing, spinal misalignment, and inefficient support of the arms which limits free movement
- 4) unnecessary raising of shoulders and tightening of trapezius muscle
- 5) pulling neck forward and down and pulling head back in relation to neck
- 6) tightening jaw, tongue and facial muscles
- 7) unnecessary tightening of neck muscles
- 8) tightening legs, including pulling up or pushing down of feet
- 9) unnecessary tightening on buttock muscles

B. Arms/Hands/Fingers

- 1) continuously holding upper arms away from torso, or pressing arms in towards ribs, instead of allowing upper arms to be pendulous and release into gravity from the shoulder sockets
- 2) unnecessary and continuous contraction of triceps in opposition to biceps (co-contraction), thereby overstabilizing elbow joint and preventing ease of movement
- 3) excess or sustained tension and co-contraction of extrinsic hand muscles (extensors and flexors) in lower arm
- 4) hyperextension of hand/wrist, pressing on median nerve
- 5) overstabilizing wrist joints, inhibiting mobility
- 6) curling in (flexing) fingers while lifting (extending) them and attempting to move (= co-contracting)
- 7) failure to release instantaneously forearm muscles at moment of sound production and continuing unnecessary pressure on key
- 8) continuous fixation of any joint, resulting in muscle fatigue and loss of joint mobility, flexibility, suppleness and ease of movement
- 9) static contraction (continuous, nonfunctional, invisible muscular tension)

C. Legs (especially for organists)

- 1) misalignment of spine, failure to balance on sitting bones, resulting in overstabilizing the legs in the hip sockets
- 2) holding or squeezing together (overstabilizing) of knees, instead of allowing legs to follow the natural alignment from hip joints
- 3) unnecessary tightening of ankles and lower legs instead of allowing them to hang with gravity and move as freely as possible
- 4) pressing on or moving from the back of the heel bone, rather than from the ankle joint at the front of the heel bone

D. Poor ergonomics in general

- 1) non-adjustable bench height
- 2) inappropriate bench height
- 3) lack of cushioned support of sitting bones (leading to slumping back and creating pressure on tail bone, or hyperextending lumbar spine and balancing on upper legs)
- 4) overly elevated music rack (creating tension in cervical spine)
- 5) bifocals or poorly adjusted glasses (causing tightening of neck and pulling back of head)
- 6) inadequate lighting (creating neck and facial tension)
- 7) piano or organ action unnecessarily heavy
- 8) practice room too cramped for proper distance from instrument
- 9) overly resonant acoustics (leading to hearing loss)
- 10) overly muffled acoustics (leading to forcing tone)

V. THE CONNECTION BETWEEN WELL-COORDINATED TECHNIQUE & ARTISTRY

A. Healthful technique does not create musicality. Rather, it allows the player to listen better, and to be free of distracting physical impediments that block access to musicality.

- 1) Technical/Musical Benefits
 - a. enhances suppleness, speed and facility
 - b. broadens dynamic range and tonal palette
 - c. increases tonal power
 - d. facilitates smoother phrase shaping
 - e. enhances ability to play diverse and subtle articulations
 - f. facilitates ease and beauty of voicing
 - g. promotes natural sense of timing and rhythm
- 2) Physical/Mental/Psychological Benefits
 - a. helps prevent discomfort, fatigue, strain and injury
 - b. promotes a sense of physical well-being while playing
 - c. helps reduce performance anxiety
 - d. promotes greater focus and concentration
 - e. enhances the ability to listen continually and more acutely