

# Blow Your Mind

- a Textbook for Brass Players  
by Professor Kristian Steenstrup

"Blow Your Mind" takes up where Steenstrup's previous book "Teaching Brass" finished. Whereas "Teaching Brass" primarily focused on the physiological aspects of brass pedagogy from the teacher's perspective, "Blow Your Mind" has a stronger emphasis on the mental facets and provides practical instructions for students.

## Chapters

### Music in and out of the brain

*From sound waves to neural signals to perception. From perception to neural signals to sound waves*

### The acoustics of brass instruments

- *How lip vibration becomes music*

### Song and Wind

- *Arnold Jacobs' educational concept for playing brass instruments*

### Pitch, duration, loudness and timbre

- *The four basic elements of psychology of music and how to improve them*

### The Embouchure

*The vibrating lips and how to train them*

### Breathing

- *Physiology and physics of breathing*
- *Posture and its effect on breathing and neurochemicals*
- *The psychology of breathing controlling the physiology*
- *Equipment for improving breathing*
- *Breathing Exercises*

### The tongue and articulation

- *The consonant*
- *The illusion of staccato*
- *The vowel*
- *The Bernoulli and Venturi-principles and how the tongue influences air speed*

### Practicing

- *A Myelin Concerto - how to strengthen neural connections to maximize learning*
- *Neurons that fire together wire together*
- *The Flow Zone - the optimal learning zone*
- *Deliberate practice versus mindless practice*
- *Time-blocked practice versus random practice. Constant practice versus varied practice*
- *Neurochemical aspects of physical exercise influencing learning*

### Mental practice

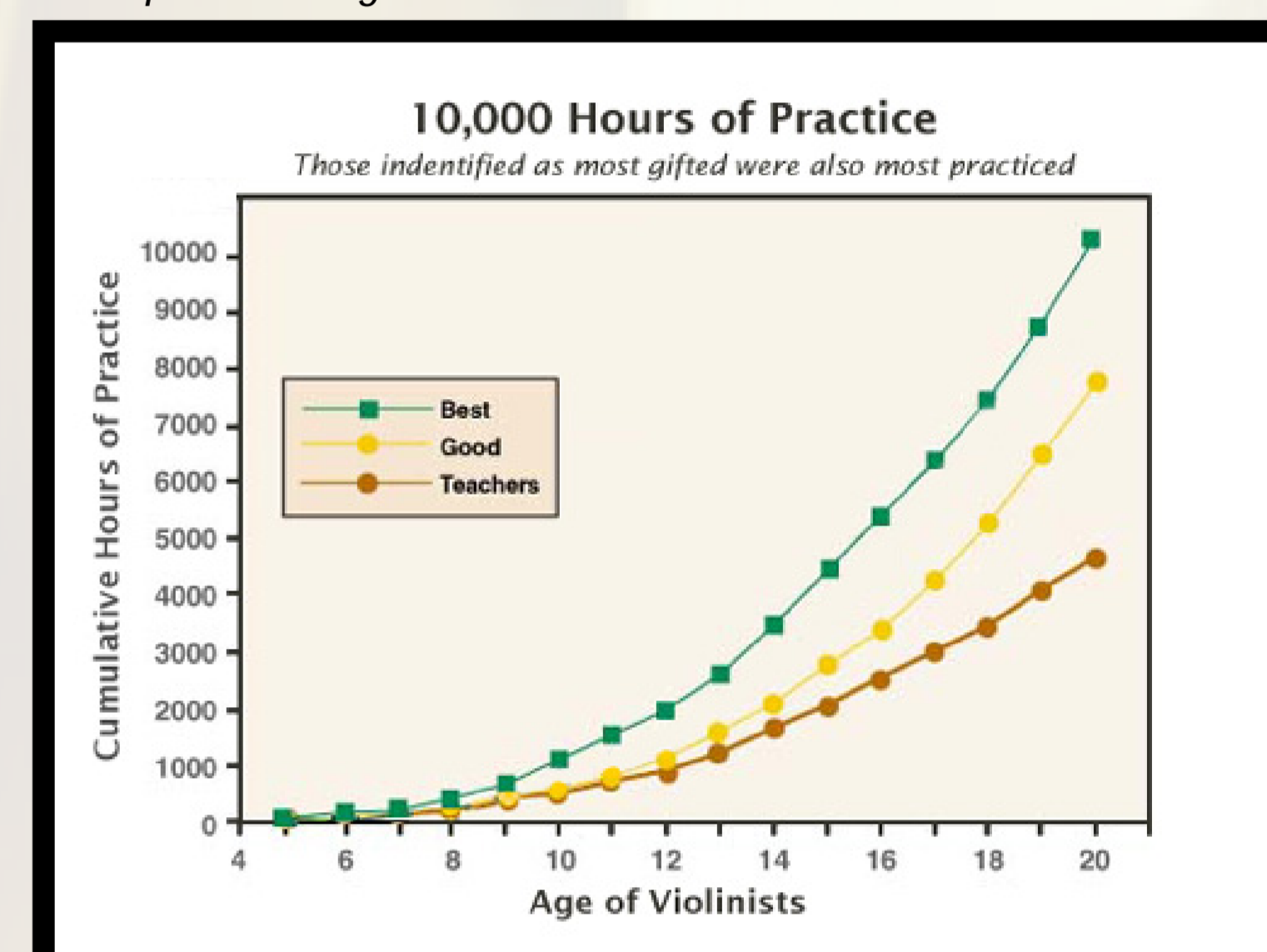
- *Optimal mental states for practicing and performing*
- *Brain hemispheres*
- *Alpha and beta waves*
- *Centering*
- *Overcoming performance anxiety*



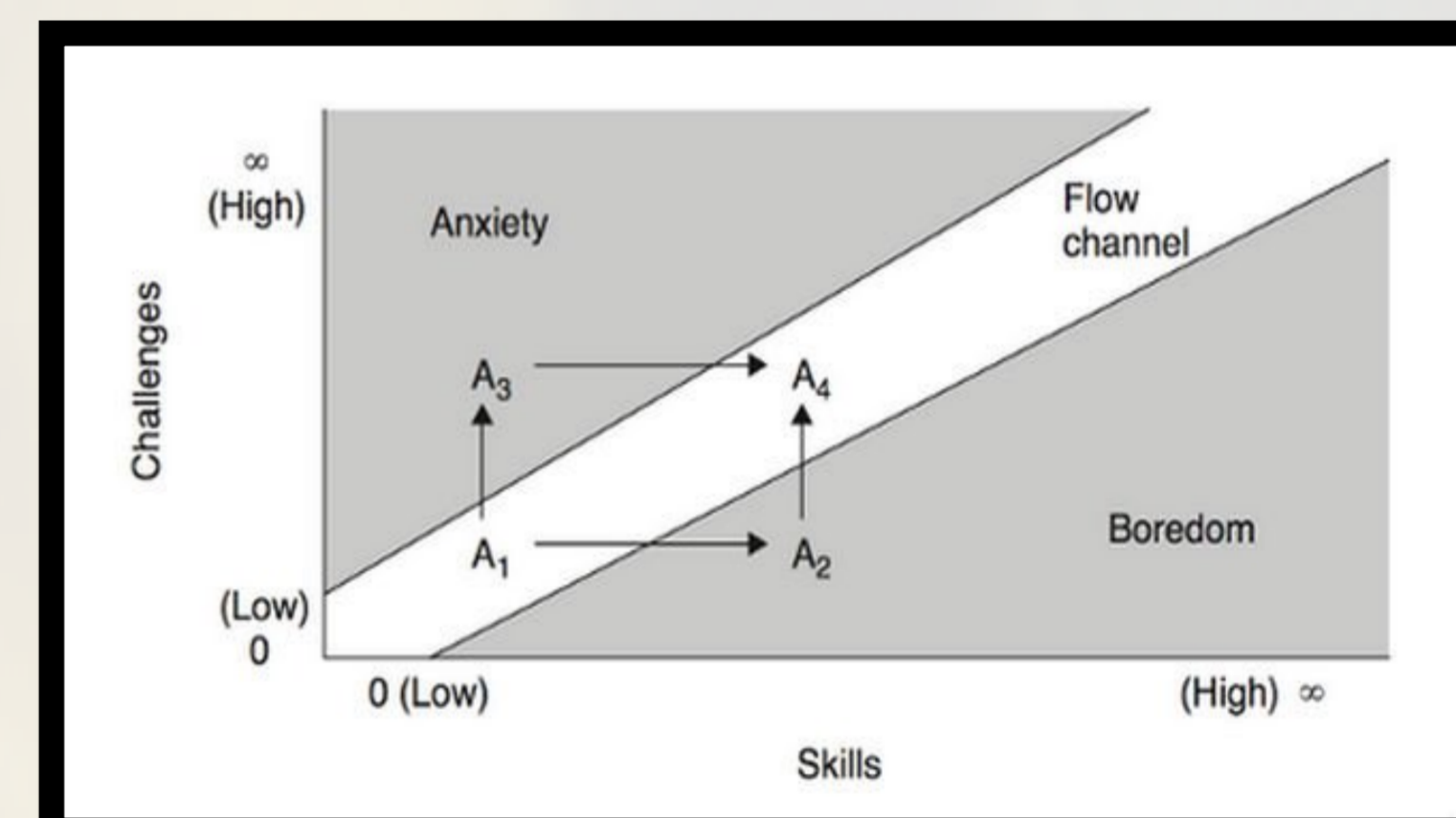
Equipment for improvement of breathing.  
Left: Rebreathing bag; Right: Breath Builder.



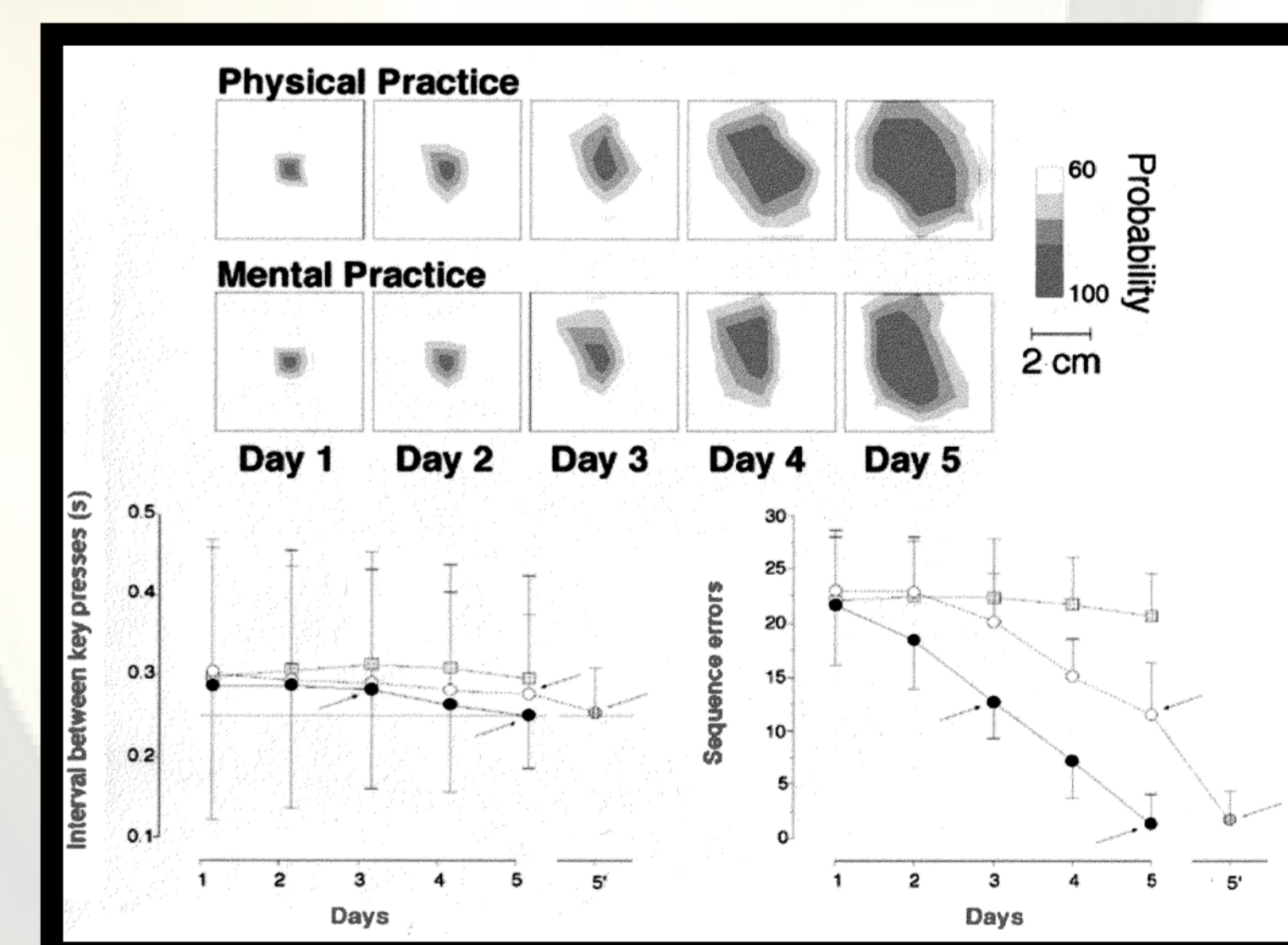
Equipment for improving of breathing: Variable Resistance Compound Gauge.



10,000 Hours of Practice. Anders Ericsson's research at Universität der Künste in Berlin showed the relationship between accumulated practice hours and later career consequences among violinists at the university.



Flow Zone: Mihály Csikszentmihályi's research shows a correlation between choice of practice material in relation to difficulty and the learning outcome of the practice: too easy is boring, too difficult is anxiety provoking and involves undesired muscle tension, where challenging but not overwhelming material gets the student in "The Learning Zone" where the outcome is optimal.



Mental Practice: Top) Cortical output maps for the finger flexors of the trained hand in a representative subject with physical versus mental practice alone. Note the parity of changes with either form of practice. (Bottom) Graphic representation of behavioral data in a group of control subjects (no practice, squares) and a group of test subjects performing mental practice (open circles) versus physical practice (filled circles). Note the behavioral advantage of the physical practice group, but the significant improvement of the mental practice group as compared with controls. The last data point (5) represents the performance achieved by the mental practice group after 5 minutes of physical practice at the end of day 5. Note the apparent advantage of mental practice, because subjects go from a performance equivalent to day 3 of the physical practice group to matching their day 5 performance with only 5 minutes of practice. Modified from Pascual-Leone et al.