Application of Spiritual Quantum in Neurofeedback for Special needs children

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What is Neurotechnology?

Defined as

i) technical and computational tools that
- measure and analyse chemical and electrical signals in the nervous system to identify the properties of nervous activity,

- understanding how the brain works and diagnose pathological conditions or control external devices (neuroprostheses and brain machine interfaces), and

ii) interact with the nervous system to change its activity, for example to restore brain regulation using neurofeedback
Tools used in Neurotechnology

- Biofeedback such as Quantitative Electroencephalograph (qEEG),
- Neurofeedback,
- Audio Visual Entrainment
- Most of these application assist the educators and researchers in helping children and young adults with symptoms such as hyperactivity, learning problems, autism spectrum disorder, impulsivity and other neurological disorders.
Audio Visual Entrainment (AVE)
Quantitative Electroencephalogram (QEEG)
Neurofeedback Training
Neurofeedback

Neurofeedback is a specialty field within Neurotechnology, which is devoted to training people to gain control over electro-physiological processes in the human brain.

In neurofeedback training, self-regulation of specific aspects of electrical brain activity is acquired by means of immediate feedback and positive reinforcement.
Visual/sound Stimulus

• Games
• Colors
• Movie

• Al-Quran
• Music-mozart and beethoven
1st Case: ADHD
Hyperactive and attention

- One break through study of neurotherapy treatment to improve neuronal regulation of ADHD child

- The 14 years old girl were characterized with hyperactivity, tantrum, self injury and co-morbid conditions (dyslexia)

- Published by Elsevier sciencedirect (Fauzan, N., & Nazaruddin, M. S., 2012)
CASE 1

- Two treatment protocols were used. Firstly, increase SMR on a location over the Frontal lobe and, training to inhibit (decrease) slow activity in the range from 4-8 Hz over the same area.
- The subject took about 25 session (30-40 minutes each) to produce clinical changes in the brave wave patterns and behavior. The social behavior improved tremendously after 22 sessions of training with reduction of oppositional behavior and self injuries.
- NFT might have implicated on her amgydala, the subject shows her emotional reaction, reduction in self injuries and oppositional behavior and better social relationships.
Skills training

- 1st case_ADHD_Success.wmv
Case 2: Neurofeedback Guided NFT training

Phase 1:
ATEC
- To identify participants belong to which spectrum (severity)

Phase 2:
First QEEG session
- Task given during the session includes eye open, eye close, reading, problem solving, drawing, mathematic and listening to music.

Phase 3:
Neurofeedback training
- Suggested protocol used for 20 NFT sessions

Phase 4:
Second QEEG session
- Task given during the session includes eye open, eye close, reading, problem solving, drawing, mathematic and listening to music.
Neurofeedback

- Their brain topography was obtained using qEEG brain mapping.
- An average of 46 NFT sessions to monitor their brainwave. A neurofeedback protocol was designed to increase Alpha (4-10 Hz) to Beta (16-20) as well as to train the individual to normalize abnormal EEG frequencies.
CASE 3: Autisme

- Quasi Experimental study: One group pretest-post test design on 39 children at Kuching Autistic Association (KAA) show improvement
Case 4: Global Developmental disorders
Recovery Phase (T3, T4)
Activation Phase (c3,c4)
Case 5: Al-Quran /Arabic/Music As stimulus

Dan Kami turunkan dari Al Quran suatu yang menjadi penawar dan rahmat bagi orang-orang yang beriman dan Al Quran itu tidaklah menambah kepada orang-orang yang zalim selain kerugian (Al Israak 82)
### Brainwave frequencies while reciting to Al mulk

<table>
<thead>
<tr>
<th>Location</th>
<th>Delta (uV²)</th>
<th>Delta (Hz)</th>
<th>Theta (uV²)</th>
<th>Theta (Hz)</th>
<th>Alpha (uV²)</th>
<th>Alpha (Hz)</th>
<th>Beta1 (uV²)</th>
<th>Beta1 (Hz)</th>
<th>Beta2 (uV²)</th>
<th>Beta2 (Hz)</th>
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Figure 2. Maps of EEG power spectra for band ranges
Neurofeedback While reading ayatul Kursi
Neurofeedback & Al Quran

- Case of Autism Savant

- **Before Treatment:** Hyperactive, cannot write.

- **Al-Quran** as stimulus:

- **Treatment:** started with listening and followed by recitation of Surah Al Mulk.

- **After the treatment:** ?Autism s

- Autism_savant_reading_eng.mp4
Neurofeedback and Quranic Verse

• Case: Cerebral Palsy/Ataxia & scoliosis
Cerebral palsy

- zuhaira dgr al mulk.mp4
Quantitative Electroencephalogram (QEEG)-Brain topography
Alpha Training: Changes in the Brain wave
12/11/2015 – 01/12/2015
Changes in the Brainwave
9/12/15 - 17/12/15
Cerebral Palsy 2

- Dystonia CP
- Surah Al **Mulk/Yasseen**
- **M Nur.mp4**
Head Control
cases?

- ADHD
- Alzheimers
- Pedro willy
- Xyy syndrome
- Angelman syndrome
- Learning disabilities
- OCD
- dyslexia
Conclusion

- Neurofeedback helps to activate the brain wave with different visual or auditory stimulus to restore the normal waves.
- It is an adjunct therapy to other therapies in place of drugs.
- Can be used for peak performance such as golfers and normal children to enhance their learning.


I am not sleeping, I am thinking!