GSRtDCs Biofeedback Cortical Excitation Stimulation Increases Insight in Students – with Eductor 2015

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Institution: International Medical University
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Abstract:
28 subjects, male and female ages 16 to 63, were asked to use Insight to solve a mental puzzle. They were also asked to report any changes in focus, perception, creativity and confidence after the therapy.

The subjects were asked to solve the nine dot problem to cover each of the nine points with four connected lines. The points of the problem are shown here on the left and the solution on the right. To solve this problem one must develop the insight to go outside the box of the lines.

The 28 subjects were shown the problem and give 5 minutes to solve it. 3 solved it with no stimulation and they were thus removed from the study. 25 could not and were thus entered into the study. The subjects were then given 5 minutes of single channel and the 10 minutes of the 2\textsuperscript{nd} wave form generator (WFG) making a total of 15 minutes of stimulation with the Eductor. 5 solved it in the first 5 min. and 13 did it with the 2\textsuperscript{nd} WFG. 18 total of the subjects could solve the puzzle in the 15 minutes all subjects were asked to rate their focus, perception, creativity and confidence.

The Eductor 2015 with single signal generator and double signal generator setting were compared. The lack of signal stimulation at the start of the test was used as a control. Cybernetic autofocusing of micro-current stimulation and biofeedback correction is used to maximize the insight effect.

There was a measurable performance increase in the treatment group. There was a dramatic 77% increase in confidence and focus. Confidence and focus is key for children in school.

We analyzed speed, accuracy and stress during insight problem solving. Once a base-line was established, the trans-cranial GSR Biofeedback cybernetic operation was turned on. After stimulation there was a significant noticeable increase in accuracy and speed of the insight problem solving. The second wave form generator performed better in the test.

Many new studies have shown the safety and efficacy of GSR trans-cranial stimulation inducing improved performance in mental acuity. These devices showed superior effect largely due to the autofocused cybernetic loop technology first developed in the 1980’s and first clinically proven in 2002 and proven again in several studies over the last two decades.
The technology has used a single wave form generator for CES since first registered with the US FDA in 1989. After over 35,000 such devices with not one reported significant risk, safety is obvious. Hundreds of studies have shown this technology to be effective, and now a second wave form generator will be tested.

**Introduction:**
IT HAS BEEN PROVEN IN THE RESEARCH THAT AN ELECTRO-STIMULATION TO THE BRAIN CAN STIMULATE INSIGHT AND CREATIVITY. TRANS-CRANIAL STIMULATION HAS BEEN DONE TO PUT A POSITIVE CHARGE INTO PART OF THE BRAIN FOR DC STIMULATION, AND A NEGATIVE CHARGE TO SEDATE PART A DIFFERENT OF THE BRAIN. THIS tDCs STIMULATION HAS BEEN PROVEN TO STIMULATE INSIGHT. WE NEED TO PROVE THAT IT CAN WORK WITH THE EDUCTOR AS WELL.

WE HOWEVER APPLY OUR POSITIVE CHARGE TO THE WHOLE CRANIUM AND THE NEGATIVE TO THE ANKLE THUS STIMULATING THE WHOLE BRAIN. WE USE A VARIANT VOLTAMMOMETRIC PULSE THAT IS DESIGNED FOR EACH OF A VARIETY OF USES.

IT IS ALSO OUR BASIC HYPOTHESIS THAT A SMALL DC PULSED MICRO-CURRENT APPLIED TO THE CRANIUM CAN STIMULATE OSMOSIS AND THUS IMPROVE SYNAPTIC ACTION AND INSIGHT. THIS EFFECT CAN BE MAXIMIZED WITH AN AUTOFOCUSED CYBERNETIC PULSE. THIS HAS BEEN PROVEN WITH THE EPFX, QXCI, SCIO AND A HOST OF OTHER RESEARCHERS HAVE MADE SUCH TECHNOLOGY. NOW WE ARE TESTING THE NEWEST ADVANCE THE EDUCTOR WHICH HAS AN EXTRA TWO SIGNAL GENERATORS.

WE FIRST USE THE EDUCTOR DEVICE TO MEASURE THE BODY ELECTRIC FOR VOLTAGE, AMPERAGE, RESISTANCE, HYDRATION, OXIDATION AND ACID ALKALINE BALANCE PLUS OUTPUT OF DISSIMILAR CONDUCTION MATERIALS. AND ONCE WE KNOW THE BODY ELECTRIC FACTORS WE CAN APPLY AN APPROPRIATE TAILORED ELECTRO-POTENTIAL SIMILAR SIGNAL TO THE BODY. THEN WE MEASURE THE ELECTRO RESPONSE AND USE IT TO MAKE THE NEXT STIMULATION. THIS MAKES AN AUTO FOCUSED CYBERNETIC LOOP WHERE THE BODY ELECTRIC CAN GUIDE THE DEVELOPMENT OF THE STIMULATION OF THE SYNAPTIC FUNCTION. THIS HAS BEEN SHOWN TO BE ABLE TO INCREASE MENTAL ACUITY.

**Brief History:**
Micro-current Cranial Electro Stimulation MCES is a new advance in Cranial Electro Stimulation CES and energetic medicine. "Electrotherapy" has been in use for over 2000 years, as shown by the clinical literature of the early Roman physician, Scribonius Largus, who wrote in the *Compositiones Medicae* of 46 AD that his patients should stand on a live black torpedo fish for the relief of a variety of medical conditions, including gout and headaches. Claudius Galen (131 - 201 AD) also suggested using the shocks from the electrical fish for medical therapies. There is evidence of electro-therapy in ancient Babylon and Egypt. The body works on electro signals and electro stimulation of low current helps homeostasis.

Low intensity electrical stimulation is believed to have originated in the studies of galvanic currents in humans and animals as conducted by Giovanni Aldini, Alessandro Volta and others in the 18th century, Aldini had experimented with galvanic head current as early as 1794 (upon himself) and
reported the successful treatment of patients suffering from melancholia depression using direct low-intensity currents in 1804.

Modern research into low intensity electrical stimulation of the brain was begun by Leduc and Rouxeau in France (1902). In 1949, the Soviet Union expanded research of CES to include the treatment of anxiety as well as sleeping disorders.

In the 1960s and 1970s, it was common for physicians and researchers to place electrodes on the eyes, thinking that any other electrode site would not be able to penetrate the cranium. It was later found that placing electrodes on the forehead was far more convenient, and quite effective.

CES was initially studied for insomnia and called electro-sleep therapy; it is also known as Cranial-Electro Stimulation and Transcranial Electrotherapy.

One of the mechanism of action for CES is that the pulses of electric current increase the ability of neural cells to produce serotonin, dopamine DHEA endorphins and other neurotransmitters stabilizing the neurohormonal system. Since a slight stimulation of a pulsed milliamp current increases osmosis it is shown that neurhormones work better from the increased osmosis.

Once we have learned to resolve problems by one technique, we often have complications in generating answers involving a different kind of insight. Yet there is confirmation that people with brain lesions are sometimes more resilient to this so-called mental set effect. This inspired investigation whether the mental set effect can be reduced by non-invasive brain stimulation.

It has been demonstrated that through CES, an electric current is engrossed upon the hypothalamic region; during this process, CES electrodes are placed near to the face with the ground at the lower body.

Current research shows an increase of the brain’s levels of serotonin, norepinephrine, and dopamine, and a decrease in its level of cortisol. After a MCES treatment, users are in an "alert, yet relaxed" state, characterized by increased alpha and decreased delta brain waves as seen on EEG.

In 1972, a specific form of addiction release CES was developed by Dr. Margaret Patterson, providing small pulses of electric current across the head to ameliorate the effects of acute and chronic withdrawal from addictive substances. She named her treatment "NeuroElectric Therapy (NET)".

Working with Margaret the SCIO system has had the MCES capacity built in.

The SCIO is a descendent of the EPFX system US FDA registered in 1989 still in registered for sale in America. Since 1989 we have sold over 31,000 such systems under the registered name of EPFX, QXCI, and SCIO. There have been well over 500,000,000 patient visits with all getting some MCES, and not one reported case of any significant risk. Over 200 studies and articles have been written and published on these systems and no report of any risk. It has passed all safety tests since 1989 and all risk analysis has proved it to be insignificant risk.

The systems outlined have a potential of 0-4 volts which is beneath the human threshold of perception, and 0-7 milliamps which makes it safe and for most subtle and undetectable.

For over 26 years reports of stress reduction, relaxation, anxiety reduction, emotional balance, addiction release, insomnia reduction and sleep induction have been reported from the users and doctors.
The Eductor has a second wave form generator that can further intensify the CES effect. All this was done with a cybernetic loop technology guided by the patient body electric reactions to the stimuli. Thus we can further intensify the CES effect over older antiquated non-cybernetic technology.

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Flash of fresh insight by electrical brain stimulation

February 3, 2011

Richard Chi and Allan Snyder from the Centre for the Mind at the University of Sydney have found that participants who received electrical stimulation of the anterior temporal lobes were three times as likely to reach the fresh insight necessary to solve a difficult, unfamiliar problem than those in the control group.

According to the researchers, our propensity to rigidly apply strategies and insights that have had previous success is a major bottleneck to making creative leaps in solving new problems. There is normally a cognitive tradeoff between the necessity of being fast at the familiar on one hand and being receptive to novelty on the other.

Chi and Snyder argue that we can modulate this tradeoff to our advantage by applying transcranial direct current stimulation (tDCS), a safe, non-invasive technique that temporarily increases or decreases excitability of populations of neurons. In particular, tDCS can be used to manipulate the competition between the left and right hemisphere by inhibiting and/or disinhibiting certain networks. Their findings are consistent with evidence that the right anterior temporal lobe is associated with insight or novel meaning and that inhibition of the left anterior temporal lobe can induce a cognitive style that is less top-down, less influenced by preconceptions.

While further studies involving brain stimulation in combination with neuroimaging are needed to elucidate the exact mechanisms leading to insight, Chi and Snyder can imagine a future when non-invasive brain stimulation is briefly employed for solving problems that have evaded traditional cognitive approaches.

Ref.: "Facilitate Insight by Non-Invasive Brain Stimulation," PLoS ONE 6(2): e16655 (open access)

Adapted from materials provided by the University of Sydney

Topics: Biotech | Cognitive Science/Neuroscience
Are we on the verge of being able to stimulate the brain to see the world anew – an electric thinking cap? Research by Richard Chi and Allan Snyder from the Centre for the Mind at the University of Sydney suggests that this could be the case.

They found that participants who received electrical stimulation of the anterior temporal lobes were three times as likely to reach the fresh insight necessary to solve a difficult, unfamiliar problem than those in the control group. The study published on 21st February in open-access journal PLoS ONE.

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Story Source:
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Journal Reference:
1. Richard P. Chi, Allan W. Snyder. Facilitate Insight by Non-Invasive Brain Stimulation. PLoS ONE, 2011; 6 (2); e16665 DOI: 10.1371/journal.pone.0016665
Method:
All subjects are volunteers who gave informed consent in writing. We used ages from 16 to 63 male and female. Subjects with extreme disease were excluded.

28 subjects were shown the problem and give 5 minutes to answer it. 3 cracked it with no stimulation and they were thus detached from the study.

25 could not and were thus put into the study. The subjects were then given 5 minutes of single channel and the 10 minutes of the 2nd wave form generator (WFG) making a total of 15 minutes of stimulation with the Eductor.
The Eductor 2015 with single signal generator and double signal generator setting were compared. The lack of signal stimulation at the start of the test was used as a control. Cybernetic autofocusing of micro-current stimulation and biofeedback correction is used to maximize the insight effect.

There was a measurable performance increase in the treatment group. There was a dramatic 77% increase in confidence and focus. Confidence and focus is key for children in school.

We analyzed speed, accuracy and stress during insight problem solving. Once a base-line was established, the trans-cranial GSR Biofeedback cybernetic operation was turned on. After stimulation there was a significant noticeable increase in accuracy and speed of the insight problem solving. The second wave form generator performed better in the test.

Then the same researcher asked the questions to the subjects. The subjects were read an example, then asked to solve with no stimulation, then with a single generator and then with two signal generators.

**Pre Questions:**

Do you usually have good insight???

Do you have confidence while doing word problems???

Can you Focus while doing word problems???

**Here is the problem used:** cover each of the nine points with four connected lines. **Solution on the right**

![Problem Diagram](image)

Start stimulation tell them to try to solve the puzzle for 5 minutes while getting one channel of CES

Next we tell them to try to solve the puzzle while getting one channel of CES for 5 min.

**Post Questions after 5 min of single wave form generator:**

Do you now have more confidence while doing the Puzzle???
Can you now Focus better while doing Puzzle???
Can you now Creativity better while doing Puzzle???
Does your ability to think seem clearer????
Anything else you feel.

Next we tell them to try to solve the puzzle while getting 10 min of two channels of CES. After 15 minutes total the study was over.

Post Questions after double wave form generator:
Do you now have more confidence while doing the Puzzle???
Can you now Focus better while doing Puzzle???
Can you now Creativity better while doing Puzzle???
Does your ability to think seem clearer????
Anything else you feel.

Results:

5 solved it in the first 5 min. and 13 did it with the 2\textsuperscript{nd} WFG. 18 total of the subjects could solve the puzzle in the 15 minutes all subjects were asked to rate their perceived difference in pre- post focus, perception, creativity and confidence. 8 subjects could not solve the puzzle after the allotted 15 min. but all 25 felt improvements in insight, focus, confidence, and creativity.

In the Eductor treatment group first wave form generator there was a reported increase in performance in insight %, confidence %, and focus %.

In the Eductor treatment group 2nd wave form generator there was a reported increase in performance in insight %, confidence %, focus %, creativity%.

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<th>Insight</th>
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<th>Focus</th>
<th>Creativity</th>
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This shows a dramatic increase in performance, insight, creativity, confidence and focus over placebo control.

The GSRtDCs part of the Eductor program works to stimulate the brain for insight, focus, creativity and confidence as well.
Get Better Math By Disrupting your Brain

Can electrical jolts to the brain produce Eureka moments?

Electrical brain stimulation improves math skills

A Vast History of Peer Review Medical Journal Validation and Verification for The Eductor

Research Shows How it Stimulates Learning Memory and Insight
Discussion:
There were no reported risks during the study.

The study showed clearly that the GSRtDCs - CES can stimulate insight, focus, confidence and creativity. The history of micro-current GSRtDCs CES positive effects on learning dates back decades. There have been no safety issues in the literature. There has been subtle but positive effects demonstrated on thousands of research documentation. This research shows the extra boost of positive effects of the second wave form generator.

References:

1. Smith RB, Cranial Electrotherapy Stimulation: Its First Fifty Years
11. DOI: 10.1007/s11940-008-0040-y


27. FDA medical device classifications

