

**Youth Mental Well-Being and *Brain-based Holistic Education for Peace*
in Hawaii: An Examination**

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Research Report for the IBREA Foundation's Intervention in a public school in
Honolulu, Hawaii

Introduction

Schools today seem to emphasize only high-stakes standardized testing results when judging the success or failure of our students. Unfortunately, this singular approach leaves out many of the most important components of what we consider a good education and those related to socio-emotional learning. In the United States, student proficiency scores in Mathematics and English Language Arts may be increasing around the country, but there is also increased student stress levels, growing numbers of depressed students, increased bullying occurrences, and large numbers of students dropping out before earning a high school degree. These aforementioned findings show that we need a more holistic approach in our education system; one that enhances our student's self-efficacy and emotional well-being in addition to academic achievement.

This study examines the effect of the IBREA Foundation's curriculum on motivation, stress, self-efficacy, and self-esteem in sixth, seventh, and eighth grade students in a Hawaiian middle school. This paper will discuss findings from a pilot study, which lasted for two months. The intervention was designed to decrease stress, social, and emotional challenges that students encounter while increasing their motivation and self-esteem. This program evaluation was carried out by an independent researcher in concert with the IBREA Foundation staff.

In today's society, youth have many things to deal with. Between social pressures and demands placed on them by parents and teachers, youth often become stressed and overwhelmed with the ever-increasing demands of learning how to be successful adults and contribute to society. The curriculum of IBREA Foundation focuses on mindfulness and brain-based holistic practices. Founded in the United States in 2008, IBREA

Foundation programs have been taught in different countries and with a wide array of groups, including principals, teachers and students. IBREA programs are taught during the school day and teachers also may benefit from the program. The curriculum activities include breathing techniques, physical activity, group work, stretching, which together lead to decreased stress and increased focus in the students that participate in the program.

Literature Review

Yoga impact on school-age youth

Research on Brain Education in the United States has focused on emotional well-being and classroom behavior. Currently, there is limited rigorous, scientific evidenced-based research that outlines the effects of the brain education program components in the psychological, behavioral, and academic outcomes in American youth. Thus, there is a need for our research. However, there is an overwhelming amount of evidence which suggests that certain brain activities are associated with greater academic outcomes in students. Our goal is to understand how Brain Education influences the identity development and motivation of students and is associated with greater academic outcomes.

Social emotional learning (SEL) is paramount to adolescent success and is just as important as the focus on school achievement and academic learning. Kids have so many pressures and demands placed on them by adults that a focus on mindfulness and emotion regulation has been neglected (Khalsa & Butzer, 2016). Although limited, research has shown that some mindfulness activities and yoga are beneficial to students (Wang & Hagins, 2016).

Khalsa and Butzer (2016) have conducted a review of the extant literature on yoga in schools and have found that yoga practices tend to be beneficial to students, although there has been limitations to some of the methodology used to study the topic (i.e., no consistent randomization, subjective outcomes versus physiological measurements of yoga practice on heart rate, blood pressure, etc.). There are some methodological concerns regarding this.

Mental health/psychological well-being and schooling

Youth mental health and well-being affects academic outcomes and motivation in students (Ryan & Deci, 2000). Butzer, LoRusso, Shin, and Khalsa (2016) conducted a randomized control trial study in which middle school students were randomly assigned by classroom into treatment and control groups to measure the effects of yoga on substance use. The study had some significant findings where students in the control group reported more negative behaviors (i.e. smoking) than students in the treatment group. These findings, while preliminary, do show that yoga and mindfulness activities play an instrumental role in the development and behavior of adolescents. Factors associated with mental health, such as emotional regulation, are part of what students need to learn and can affect how students interact with others and the choices that they make (Butzer et al., 2016).

Brain-based holistic education and mindfulness programs

Previous research studies on brain-based holistic education have shown that it does have a positive effect on outcomes such as stress-coping strategies (Oh, 2009); self-regulation and concentration (Shim & Ko, 2009); and learning ability and emotional stability (Kim, 2006). Brain-based holistic education provides an overview of body and

brain functions at a biological/scientific level and allows the students to experience those functions, become more aware of them, and maximize their potential through continued practice and focused attention on themselves.

Research Questions

This study seeks to investigate the effects of IBREA Foundation's *Brain-based Holistic Education for Peace* program on student psychological and academic outcomes. Previous research has established a link between psychological factors and academic achievement. This research is founded at the intersection of cognitive and educational psychology. Research questions are as follows:

1. Between Time 1 and Time 2, how do students who received the *Brain-based Holistic Education for Peace* curriculum differ on measurements of motivation, self-efficacy, self-esteem, academic self-esteem, and stress?
2. To what extent are there significant differences between students in the control and treatment groups?

Methods

The experimental research design employs a pretest-posttest control group design where classes are randomly assigned to either the treatment or control group. Our sampling design is known as cluster sampling where classes were selected and every student in that class was asked to participate in the study. The classes were randomly selected and school principals directed us to the classes we should target for our research. This study had two phases: 1) the implementation of the *Brain-based Holistic Education for Peace* curriculum program and 2) data collection and analyses of survey data and focus group data.

Using the *Brain-based Holistic Education for Peace* program, teachers and students participated in teacher-led exercises and activities designed to improve sensory awareness, motor control, balance, emotional regulation, peer-relations, attention, and unleash imagination and creativity. Physical flexibility exercises were used to strengthen mental/cognitive flexibility as communication and interaction between the brain’s right and left hemispheres improves. The lessons then proceeded towards self-awareness of the students as individuals and how they can make the right choices and decisions to be successful. As this inner awareness is strengthened, the student’s ability to concentrate and focus on the task at hand is enhanced.

Participants

The present study was conducted during the 2015-2016 school year. Middle school students participating in Advancement Via Individual Determination and Leadership electives received the IBREA Foundation’s curriculum during the spring of 2016. The students are considered to be the top-performing students in the school. There were 91 students total that participated in the study. 61 students were in the treatment group and 30 students were in the control group. Table 1, below, provides demographic information about students in the control and treatment groups.

Table 1. Demographic information on study participants

	Control Group	Treatment Group
Gender	Boys: 9 students Girls: 21 students	Boys: 25 students Girls: 36 students

Grade in school	All students in 7 th grade	Grade 6: 13 students Grade 7: 6 students Grade 8: 42 students
Age	12 years old: 22 students 13 years old: 8 students	11 years old: 8 12 years old: 8 13 years old: 33 14 years old: 12
Average GPA	3.42 (on a 4-point scale)	3.12 (on a 4-point scale)

Site

The school is a public middle school in Honolulu, Hawaii. It is a recipient of a School Improvement Grant (SIG) from the HI Department of Education to assist with their efforts to improve student performance, student engagement, school climate, and the professional development of staff. The school serves grades 6, 7, and 8. In 2015, the school ranked worse than 97.2% of middle schools in Hawaii. It also ranked last among 40 ranked middle schools in the Hawaii Department Of Education School District. In 2014, 77.3% of students received a free or discounted lunch.

Instruments

The survey for the study included several questionnaires. Each questionnaire is described below.

- Motivated Strategies for Learning Questionnaire (Pintrich & DeGroot, 1990)

- Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item scale which measures respondents degree of stress when presented with scenarios.
- General Self-Esteem (Rosenberg, 1989)
- Academic Self-Esteem (Hare, 1977)
- Children’s Self-Efficacy Scale (Bandura, 2006)

Procedure

In order to participate in the study, students had to submit their signed informed consent to their classroom teachers. Middle school students were randomly assigned by class to receive the *Brain-based Holistic Education for Peace* curriculum (treatment group) or not at all (control group). Once students were randomly assigned to the treatment and control groups, they completed a survey about their motivation, self-esteem, stress levels, and efficacy at the beginning of the intervention. Treatment group students received the *Brain-based Holistic Education for Peace* curriculum one day a week for 11 weeks (the original curriculum is designed for a 12-week program). The sessions lasted for approximately 55 minutes. The *Brain-based Holistic Education for Peace* curriculum stresses, among others: the importance of focusing inside ourselves; the importance of sharing and caring; the importance of working together; and the importance of mind-body connection for focused attention and better results in school and life.

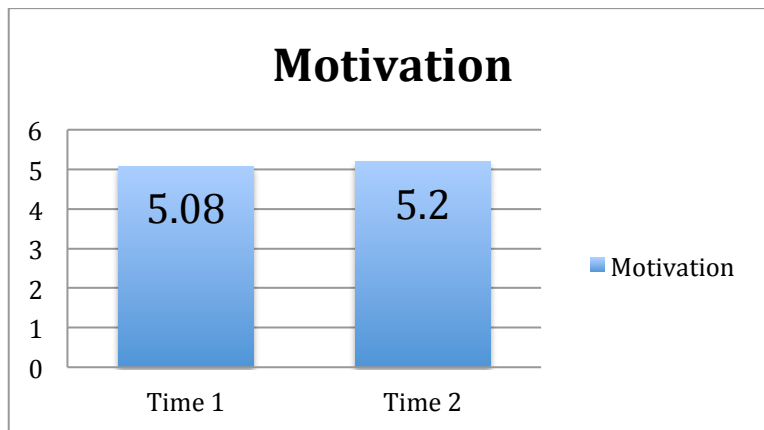
Results

Study results are organized by the previously stated research questions.

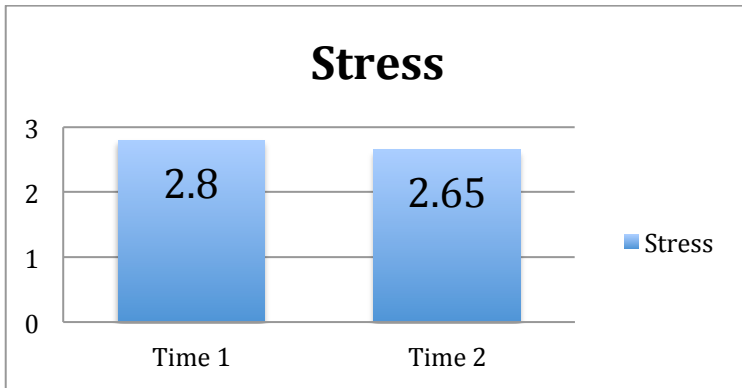
Research Question 1: Between Time 1 and Time 2, how do students who received the Brain Education treatment differ on measurements of motivation, self-efficacy, self-esteem, academic self-esteem, and stress?

To answer this research question, repeated measures ANOVA revealed that there were significant differences between Time 1 and Time 2 in motivation ($p=.04$), stress ($p=.01$), general self-esteem ($p=.01$), and self-efficacy of social resources ($p=.00$) for students in the treatment group. Although the graph is included below, there were no significant differences for academic self-esteem.

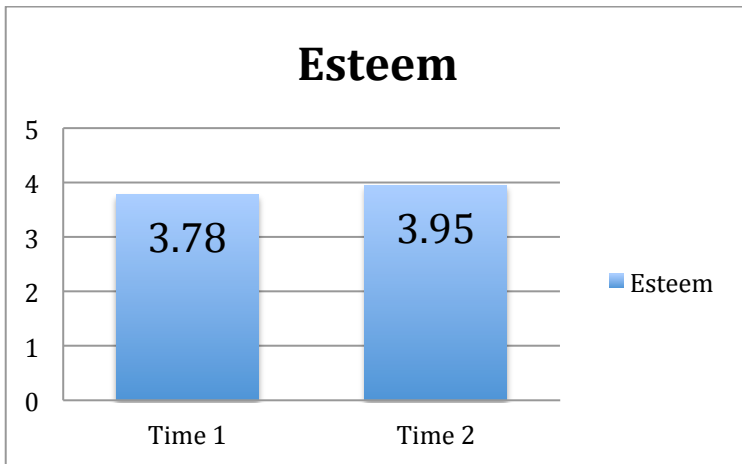
For students in the treatment group, their Time 1 ($M=5.08$) was significantly lower than the Time 2 ($M=5.2$) levels of motivation.



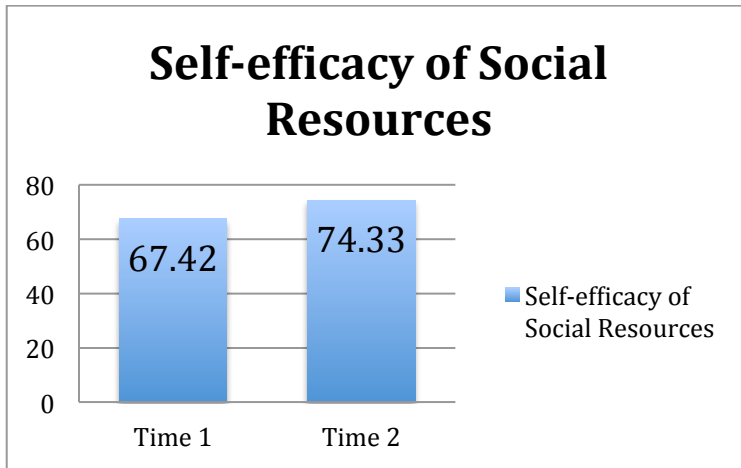
For students in the treatment group, Time 1 ($M=2.8$) was significantly higher than the Time 2 ($M=2.65$) levels of stress.



For students in the treatment group, Time 1 (M=3.78) was significantly lower than the Time 2 (M=3.95) levels of general self-esteem.



For students in the treatment group, Time 1 (M=67.42) was significantly lower than the Time 2 (M=74.33) levels of self-efficacy of social resources.



Research Question 2: To what extent are there significant differences between students in the control and treatment groups?

There were no significant differences on study variables for students in the treatment and control groups.

Discussion

The IBREA Foundation program has been proven to be effective in enhancing the mental, physical, and emotional health of study participants. These findings can be projected with a larger sample to give more insight into how IBREA Foundation's program can positively impact students' performance. Although we did not conduct student focus groups, we were able to capture student perceptions of the *Brain-based Holistic Education for Peace* curriculum through the participating student's written testimonies.

- "I started to be more respectful and started doing more work and pay attention in my classes. I've also learned how to relax and calm myself."
- "My major learning that I had since I did IBREA program is there are different things you can do to relax your body or to calm. The changes that I have since I

- did IBREA is that every time I'm angry I let myself calm first and clear my mind for a little while so that I can focus on things.”
- “IBREA made a lot of changes with me. I am more confident in myself. They also taught me how to control my stress so my head is cool, my chest is open my stomach is warm. I'm a happy COW. The exercises we did made me calm and focus on me. For example the sleeping tiger we had to hold it for 3 mins (minutes) and I did because I only focus on me by closing my eyes and breathing.”
 - “I learned many things. It helped me prove to myself that saying 'impossible' is like saying 'I'm possible', All the exercises helped me build stronger muscles. It helped me control my feelings and calming myself down.”
 - “Before IBREA I was kind of a mess. I had school, sports, distractions. I couldn't really think straight when it came to things like deciding. Should I play games? I was very stressed because of school. I overworked my body with volleyball. I never ate breakfast. It was all too much. IBREA really opened my eyes as to what decisions to make IBREA taught me endurance and how to handle stress.”
 - “Since I did the IBREA program, my major learning and changes was that I focus more on my goal instead of focusing on others. When things are hard, I stop and think what I should do to fix the problem. I feel more confident and proud of what I do. I don't give up on things anymore.”
 - “In the IBREA program, my changes included being more confident, being more focused, happy, outgoing, friendly, hard of a worker, and I've been understanding much more clearly, things I had trouble on got easier, and I don't need much help as before.”

We also gathered observations from the teachers of the 5 treatment groups as follows:

Teacher of Treatment groups 1, 2 and 3 (Leadership classes)

“Overall I see students maturing and developing more responsibility for their learning. There is less of the blame game for not doing assignments individually and group work. What is valuable from this program is not only the exercises but the big picture understanding of how the brain and body works and how they have the ability to control their emotions as most of them say to turn negative into positive.”

Teacher of Treatment groups 4 and 5 (AVID classes)

“As students complete group activities/relaxation exercises together, students have been able to work better as a group. Crayon exercises and the debrief we had without IBREA instructors gave students an opportunity to focus on being ONE and to understand the purpose behind these exercises. As a group, students focus much more easily with using simple techniques from our IBREA sessions. Students' posture has also been improved.”

Closing/Implications/Recommendations

Based on study results, we believe that Dole Middle School should agree to expand the IBREA brain education curriculum school-wide. An increase in the number of students who participate in the curriculum might have produced more significant results. Some of the results were not significant possibly due to the program being offered to

students in leadership electives and college preparation courses. Therefore, students in all grades and all class types/subjects should take part in the curriculum.

Regarding ideas for future research, the intervention team would like to conduct repeated measures analysis focused on gender differences in motivation, self-esteem, and self-efficacy, as well as, examine how student GPA and other academic outcomes may have changed as a result of the intervention. Ultimately, we would strive to make further connections between the intervention and changes in the students and impact at the social level (in the family/community).