

HeartMath® Education



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For the past 4 years John and his expert team of dedicated HeartMath trainers have been working within schools and colleges across the UK to help teachers, mentors and support workers embed HeartMath in school culture with amazing results.

- Improved Learning
- Improved classroom attention span
- Improved Exam results (SATS and GCSE)
- Improved Attendance
- Improved Behaviour

"The more educators come to understand the nature of the relationship between emotion and cognition, the better they may be able to leverage this relationship in the design of learning environments."

M.H. Immordino-Yang & A. Damasio,
"We Feel, Therefore We Learn: The Relevance of Affective and Social Neuroscience to Education," *Mind, Brain, and Education*, 2007, 1(1):3-10.

Dear Educator,

Thousands of students and teachers in schools and colleges in the United Kingdom and in countries spanning 5 continents are using the Institute of HeartMath's educational programs and methodologies to reduce stress, raise academic performance and improve classroom climate.

The Physiology of Learning and Performance

HeartMath research has identified a measurable physiological state that underlies optimal learning and performance. In this state, our emotions are calmer and our brain, nervous system and other bodily systems function with increased efficiency. In simple terms, we're more in sync. This in turn facilitates the higher cognitive processes critical for focused attention, reasoning and creativity – all essential for school success. Being in sync also improves behaviour, relationships and general well-being for students and teachers.

Research Based

Ultima Performance Ltd along with The Institute of HeartMath Research Centre has conducted studies on a broad range of subjects, including optimal performance, emotional regulation, heart-brain interactions, health and well-being, and human relationships. This research has been published in a variety of books and peer-reviewed journals. (See research pages).

I invite you to explore the array of HeartMath products and programmes described in this brochure and to consider ways in which you can bring more coherence to your school or organisation.

Sincerely,

JPS-Wright

John Sunderland-Wright MA

Director of Education
Ultima Performance Ltd

WHAT ARE THE FEATURES OF THE EMWAVE PC & EMWAVE MAC?

Ear sensor
 Real-time heart-rate-variability monitoring,
 coherence scoring and ratios
 Three colourful interactive games
 Emotion Visualizer®
 Coherence Coach® (skill-based tutorial)
 Session-by-session progress review
 In-depth tutorial, applications, and reference menus
 Audio feedback, music player

WHAT IS INCLUDED IN THE PURCHASE PRICE OF THE EMWAVE PC & EMWAVE MAC?

emWave® PC or Mac 1.x software CD
 In-depth computer-based tutorial
 USB sensor module (interface device)
 Ear sensor
 Practice Plan
 Free technical support
 Free telephone orientation class
 * USB finger tip pulse sensor sold separately

WHAT ARE THE EMWAVE PC SYSTEM REQUIREMENTS?

Pentium® II compatible processor or faster
 Microsoft® Windows® 2000 SP2, XP SP2 or Windows Vista™
 256 MB of RAM (512 MB or more on Windows 2000, XP and Vista)
 300 MB available disk space
 32 MB of Video RAM (required for use of Emotion Visualizer™)
 CD-ROM drive (for installation)
 One available USB port (USB 1.x or 2.0)
 Internet compatible (Ethernet or WiFi LAN card)

WHAT ARE THE EMWAVE MAC SYSTEM REQUIREMENTS?

Mac OS X v10.4 or later
 1.2GHz or faster G4 or G5 processor
 2GB free hard-disk space recommended for application and data storage)
 CD drive
 Internet access
 One available USB port

emWave® Stress Relief System — Available for PC and Mac

The emWave® PC/emWave® Mac Stress Relief System is an award-winning computer technology proven to enhance learning, performance and behaviour. For many educators, it has become an important and fun part of classroom behavioural management and high-stakes test preparation. Using an ear sensor or an optional finger sensor, the emWave Stress Relief System allows students to see how emotions and attitudes affect their heart-rhythm patterns in real time and confirms when they are in the state of coherence. This feedback enables users to more effectively manage their stress levels and negative emotions, leading to improved cognitive performance, learning ability and creativity.



Ideally, students should use the emWave technology a minimum of 6 to 10 times over a school year. Sessions of as little as 3-5 minutes per student can be beneficial. The goal is to have students gain proficiency in this technology and then be able to transfer what they have learned to real-life situations.



"All year 11 students are introduced to the Em-Wave PC as part of their preparation for GCSE's. We have the Em-Wave technology available on our server so all students can benefit. We have used Heartmath for the past 3 years, with amazingly positive impact on reducing anxiety and improving performance."

— Dave Cregreen- Teacher,
 Range High School Formby,
 Merseyside.

Pricing Guide: emWave PC and emWave Mac

PC Item#	Mac Item#	Product Name	£
6006	6010	emWave Stress Relief System (single unit boxed)	175.00
6006-L	6010-L	5-station lab (single unit + 4 sensors)	775.00
6006-L10	6010-L10	10-station lab (single unit + 9 sensors)	1400.00
6006-L25	6010-L25	25-station lab (single unit + 24 sensors)	3375.00
6010-F	6010-F	optional finger sensor	20.00



emWave® Stress Relief System Applications in Education

Regular classrooms — Instructors have incorporated the emWave Stress Relief System into biology, life science and psychology courses, math programs and health, nutrition, wellness and life-skills classes. Typically, teachers arrange for the program to be installed onto one or two classroom computers from which they can rotate students throughout the year or at select times. Many schools have acquired multiuser site licenses for emWave PC/Mac technology in computer labs, where up to 25 students can use the emWave PC/Mac simultaneously.

Counselling programs — Counsellors use the emWave to help improve students' emotional health. They also incorporate this versatile technology into larger programs that address bullying, conflict resolution, test preparation, drug and alcohol prevention and more. In classroom presentations, counsellors connect the emWave PC/Mac to an LCD projector or TV monitor to demonstrate how emotions affect physiology and how HeartMath skills can improve stress management.

After-school programs — Students supplement academic work with regular practice on the emWave PC/Mac to help with test preparation and decrease frustration from learning and behavioural challenges.

Behaviour support programs — Schools with behavioural specialists use the emWave PC/Mac to help students adjust more easily to classroom learning climates and address Educational Technology personal

issues such as anger management, peer conflict, classroom motivation and communication.

Special education classrooms — Many special education classrooms employ the emWave PC/Mac to help their students gain greater impulse control, academic focus and confidence and learn better emotional management when actively engaged in the learning process.

Administrative offices — Administrators use the emWave PC/Mac to help manage stress and sustain resiliency and focus on their mission in the face of challenging job demands and long hours.

Learning and tutoring centres — Numerous learning and tutoring centers use the emWave PC/Mac as a support tool for students with learning disabilities or those performing below their academic capability.

Therapy offices — Therapists and psychologists use the emWave PC/Mac to help children deal with symptoms of ADHD, autism, anger management, anxiety and depression.

Athletic programs and sports camps — Athletic programs and sports camps use the emWave PC/Mac to train athletes to improve focus, self-control, and performance.

Research/studies — Many universities use the emWave PC/Mac as both a training and data-collection technology to improve and measure outcomes in a variety of contexts.

"Through the Em-Wave Desktop my year 5 and 6 children were able to identify what emotions interfered with their performance and then using the Heartmath techniques, control those negative emotions, so their brains could function better."

Pam Fletcher, Hesleden Primary,
County Durham

"I use it with my kids when they are feeling upset, angry or anxious. They come to me and go on the Em-Wave. All of them feel the benefit quite quickly and calm down and become happier."

Alkenka Hazlewood - The Strand
Community School, Grimsby.

"We met expectations all over. Progress from SK1-KS2 was particularly pleasing. Our SATs math results were the best yet achieved and English second best yet. So we are pleased we are continuing with Heartmath in yr 5 and 6 next year. The children said they had learned a lesson for life through learning the technique."

Stephanie Grimshaw, Head
Teacher at Spring Hill Primary,
Accrington.

CONTENTS

- How do you feel about taking tests?
- Feeling words
- Body Map: common stressors for kids
- Appreciation
- Freeze-Frame® Technique
- Just Right Me survey
- Building a test-prep breakfast
- Practice exam
- Test-taking strategies

TEACHER'S KIT INCLUDES:

- TestEdge Teacher's Manual
- TestEdge Student Activity Book
- 2 full-colour, 11-by- 17-inch posters
- 16 poster-sized laminated photo lesson cards

STUDENT ACTIVITY BOOK:

- 8½ by 11 inches
- 24 pages
- Soft cover

TestEdge® Classroom Program Year 3-5

Improves Test Scores, Learning Readiness and Attitudes

Many students are not properly prepared for the pressure of high-stakes tests such as those mandated under the No Child Left Behind Act. They can become emotionally and/or physically upset weeks before an exam, thus inhibiting their ability to learn new information and use what they've already learned.

With TestEdge tools and strategies, students learn to overcome test anxiety and discouragement while improving motivation, comprehension, memory and focusing skills.



Easy to Teach



Teachers use 16 poster-sized photo lesson cards that include fully scripted lesson plans to teach key tools and core concepts. All lessons can be taught in 10- to 20-minute sessions several months in advance of a big exam.

"Our modern foreign languages students felt significantly more able to tackle the challenge of the speaking exam after using Heartmath. They felt much less stresses and nervous and performed better as a result. They used Heartmath before nearly all of their exams and reported the benefits in terms of being less stressed in the exam itself. The MFL results, support this too, especially in the speaking exams."

Jon Comyn, Head of languages, Fallibroome Academy, Cheshire.

Pricing Guide:

TestEdge Classroom Program: Year 3-5

PC Item#	Product Name	Price
5310	Teacher's Kit	£100.00
5311	Student Activity Book (24 pages)	£1.95

CONTENTS

- How do you feel about tests?
- Types of smarts
- Stressed out?
- Ways people respond to stress
- Freeze Frame® — It's your movie
- Test anxiety
- Attitude Breathing
- Food for thought
- Taking stock: preparing for your best performance
- Practice exam
- Test-taking strategies

TEACHER'S KIT INCLUDES:

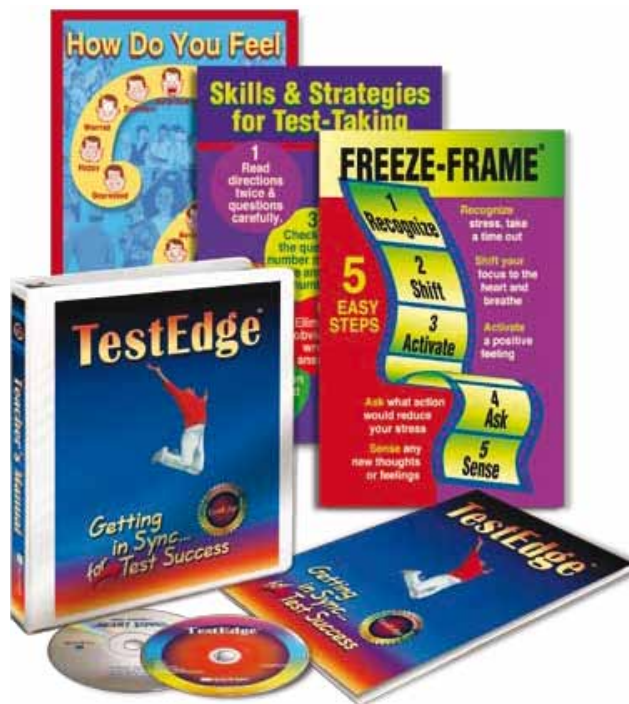
- TestEdge Teacher's Manual
- TestEdge Student Activity
- Book, 18 lessons
- 3 Full-color posters
- 11- by 17-inch
- HeartZones (Music CD)
- CD-ROM
- (overheads, worksheets)

STUDENT ACTIVITY BOOK:

- 8½ by 11 inches
- 48 pages
- Softcover

TestEdge® Classroom Program Year 6-8

In the challenging middle school years, students grapple with the onset of puberty and the adjustment to new schools, multiple teachers and changing peer relations. Helping them overcome test anxiety and reduce stress can make an enormous difference in these critical years. TestEdge focuses on Stress Smarts and Test Smarts to help students improve school participation and performance.



Stress Smarts

Positive motion-refocusing techniques that lower Stress and test anxiety and increase focus and comprehension.

Test Smarts

Advanced test-taking skills and strategies for higher test scores.

Fact Smarts

Subject knowledge and skills in math and reading comprehension. TestEdge helps students improve their ability to

absorb and remember facts and skills taught in their core academic curricula.

Easy to Teach

TestEdge is presented in a flexible format. Its fully scripted lessons can be taught once or twice weekly over 2 to 3 months to prepare students for an important exam.

Pricing Guide:

TestEdge Classroom Program: Year 3-5

PC Item#	Product Name	Price
5310	Teacher's Kit	£100.00
5311	Student Activity Book (24 pages)	£1.95

CONTENTS

- What are your goals?
- Three brains are better than one
- Emotional memories
- In sync/out of sync
- Chilling out in Neutral™
- What's your background music?
- Key qualities for high performance
- Performance blocks
- The Freeze-Frame® Technique
- Freeze-Frame skills and learning
- Achieving your goals

TEACHER'S KIT INCLUDES:

- TestEdge Teacher's Manual
- TestEdge Student Activity Book
- 3 full-colour 11-by- 17-inch posters
- CD-ROM and videotape

STUDENT ACTIVITY BOOK:

- 7½ by 10 inches
- 64 pages, 12 lessons
- Softcover

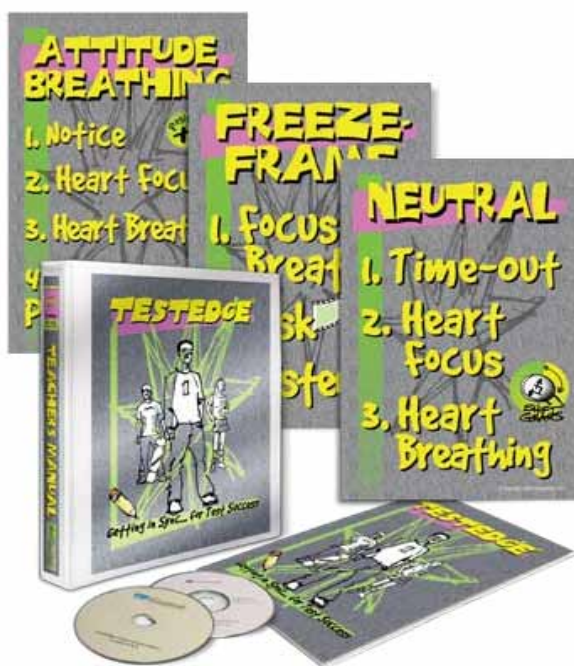
TestEdge® Classroom Program Year 9-12

Improves Test Scores, Learning Readiness & Attitudes

As students mature, tests become more challenging and results more important. TestEdge 9-12 gives students an edge in learning and test-taking by helping them experience less fear about taking tests and increasing focus and comprehension skills. It helps them find their personal zone of optimal performance. Similar to athletes who learn to perform their best when they're "in the zone," students who are in the zone focus, learn, reason and perform better.

TestEdge has shown in a controlled study to improve:

- Test Scores
- Attitudes
- Motivation to Succeed
- Comprehension
- Listening Skills
- Memory Recall



Easy to Teach

The Teacher's Kit includes fully scripted lesson plans designed with flexible teaching schedules to help meet the varying time demands of educators, teens and their families.

Pricing Guide:

TestEdge Classroom Program: Year 9-12

PC Item#	Product Name	Price
5320	Teacher's Kit	£100.00
5321	Student Activity Book (64 pages)	£4.00

EARLY HEARTSMARTS KIT INCLUDES:

- Leaders Guide
- Introductory Program CD
- Music CD
- Anatomical Model Heart
- Bear Heart Puppet
- Stethoscope
- Heart Ball
- Heart Pillow
- The Kissing Hand Book
- Photo Emotion Cards
- Emotion Spinner
- Problem-Solving Cards
- Problem-Solving Poster
- Heart Stickers

Early HeartSmarts® for Ages 3-6 -KS1

Piloted and reviewed by preschool teachers, administrators, and early childhood experts, Early HeartSmarts guides young children through key

goals:

- how to regulate emotions
- ways to improve peer relations
- skills for problem-solving
- ways to strengthen the expression of positive feelings
- how to recognize and better understand basic emotional states



Young children are naturally heart centred and eager learners of new social and emotional skills and information. These capacities will serve them well not only in their academic work, but also in their personal development and relationships as they grow up in our technologically advanced world. Research has shown that children who are educated in social and emotional skills perform better at school, develop better relationships, experience greater confidence, persevere with challenging tasks and communicate their needs more effectively.

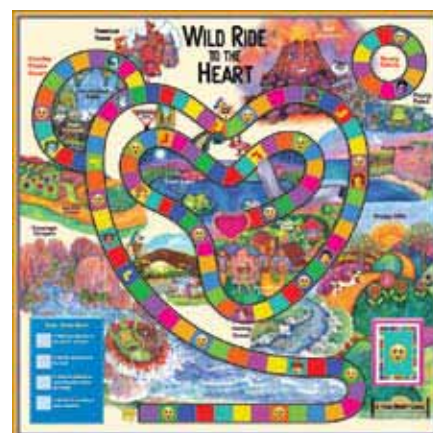
Additional features include: literacy reminders, follow-up support activities, parent/child activities at home, recommended support books, song lyrics and parent letters (English and Spanish).

Pricing Guide: Early HeartSmarts Ages 3-6

PC Item#	Product Name	Price
5335	Early HeartSmarts Teaching Kit	£155.00
4900	Heart Bear Puppet (with HeartMath logo-sold separately)	£15.00

Wild Ride to the Heart™ – Game for Ages 4 and up

For both the family and the classroom, Wild Ride to the Heart introduces children to the language and understanding of emotions along with a simple emotion regulation tool. Active and unpredictable, this game will engage and animate players while facilitating opportunities for heartfelt communication. Package includes large game board, Surprise Cards, markers, a spinner, optional dice, instructions, and definitions and examples of 19 emotions.



Pricing Guide: Wild Ride to the Heart for Ages 4 and up

PC Item#	Product Name	Price
5360	Wild Ride to the Heart – A HeartMath® Game	£14.40

“As I began to make it part of our daily routine to get in sync for learning, it made both teaching and learning easier. The children are quite excited about their ability to feel better quickly when they get upset and calm themselves in stressful situations, instead of just reacting. I also noticed that my students are kinder to each other.”

Evelyn Bradley, Year 5 teacher

TEACHER'S KIT INCLUDES:

- Leader's Guide
- 5 module booklets
- Student worksheets
- 3 full-colour 18-by-24-inch posters
- 2 presentation flip books
- Assessment tools
- CD ROM: includes introductory video for teachers and a short movie
- A rubric for skill development

HeartSmarts® for Ages 7-11 -KS2

A New Curriculum for Helping Students Bridge

Academic and Emotional Learning HeartSmarts is a new social and emotional learning program that teaches upper-elementary students how to manage stress, improve learning and strengthen relationships. Based on the Institute of HeartMath's cutting-edge research on the physiology of learning, students learn a core set of tools and strategies that become part of meaningful rituals and routines in the classroom, intervention group or after-school program. HeartSmarts is organized into five modules. Short lessons within each module use experiential learning for problem-solving and collaborative discussion on topics related to school performance.

Through minimal practice and reflection, students develop “habits of the heart” that improve learner readiness, motivation, behaviour management and overall classroom climate.



Pricing Guide: HeartSmarts Ages 7-11

PC Item#	Product Name	Price
5330	HeartSmarts Teaching Kit	£99.00

HEARTSMARTS PROGRAM CONTENTS

• Exploring Emotions

- What emotions do you experience in a day?
- Where are you on the Emotional Window?
- Calming yourself when upset: The HeartShift™ tool
- How do clear roles help us work well together?

• Getting in Sync for Learning

- How do emotions affect your body?
- How emotions get in the way of learning
- Shifting negative self-talk
- HeartSmarts Tool: Get in Sync

• Listening with Your Heart

- What does listening look like, sound like and feel like?
- Role play
- HeartSmarts tool: Heart Listening
- Changing a stressful situation

• Becoming Your Best Self

- What does it mean to be your best self? Discovering my strengths and exploring my future.
- Improving my personal best: creating an action plan
- Who and what do you appreciate?
- Building-more-care HeartSmarts tool – Shift & Shine™
- What makes a good friend?

• Sharing What You Know

- How can you make better choices?
- Discussing everyday dilemmas
- How will you share what you know?
- Choosing a performance task
- How have you grown?
- Student presentations

Benefits of Social and Emotional Learning (SEL)

Researchers have identified the following benefits for students who experience social and emotional learning:

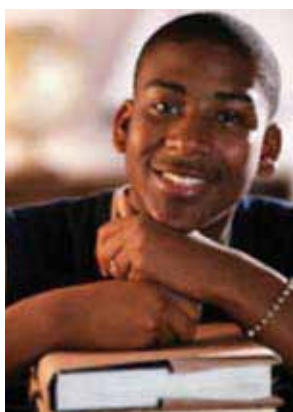


School Performance

- Improved math, literacy, and social studies skills
 - Higher achievement test scores and grades, and no decreases in standardized test scores
 - Improved learning-to-learn skills
 - Better problem-solving and planning ability
 - Use of higher-level reasoning strategies
- Improvements in reading comprehension

School Behaviours

- Participate in class more
- Demonstrate more pro-social behaviour
- Have fewer absences and improved attendance
- Show reductions in aggression and disruptions
- Stay on track to graduate and are less likely to drop out
- Students more likely to work out their own way of learning



School Attitudes

- Stronger sense of community
- Higher academic motivation and educational aspirations
- Better understanding of consequences of behaviour
- Better ability to cope with school stressors
- More positive attitudes toward school and learning

THE HEARTMATH TRAINING PACKAGE

Also your school will receive:

- Supply (10) of Em-wave PC software User License
- Supply (2) of Learning resource packs – HeartSmarts and or Test Edge Classroom Resource packs
- CD-Rom with “Heart zones” music for personal use
- Each school delegate will receive:
- Detailed workbook and explanation of the science and techniques

Becoming a HeartMath School The HeartMath Training Package

To gain the full benefits of the HeartMath system for your staff and your pupils why not take advantage of our cost effective HeartMath training packages.

We come to your school and train a number of your staff (teachers, teaching assistants, behaviour support workers, SENCO's, SERIS Workers and Learning Support mentors or whoever you think would benefit). They will learn all about the HeartMath system of techniques, the biofeedback technology and how to embed into school culture to the benefit of both staff and children.

The Programme is delivered over 2 days (on 2 separate one day courses, usually one month apart).



Workshop 1: Being the Resilient Educator – Using HeartMath

This programme is your full introduction into the HeartMath system and how you as adults can benefit from using the techniques. We do explore how this system can be used in the classroom and one-to-one environment with children, but the main focus will be on you understanding and learning the system and techniques for yourself. Following this session you will have time to practice.

Workshop 2: HeartMath – Working with Students – Being your Best self

This workshop shows you how to apply HeartMath techniques and tools within the classroom and in one-to-one sessions with students. This session will be split into a half-day spent with the staff, demonstrating how use the in-class learning resources. The second half of the day's session will focus on working with children from a number of classes to help them to use HeartMath. This will allow teachers, Mentors and TAs to see how HeartMath is taught and make it easier to continue the follow-up after the training.

TestEdge National Demonstration Study

U.S. Department of Education-funded study shows significant gains in test scores.

The primary purpose of this study, funded by the U.S. Department of Education, was to investigate the effectiveness of the TestEdge program in reducing stress and test anxiety and improving emotional well-being, quality of relationships and academic performance in public school students. TestEdge was implemented in nine schools (California, Delaware, Florida, Ohio, Maryland, Texas, Wisconsin and Pennsylvania). Age-appropriate versions of the program were delivered to select classrooms covering the third through eighth and 10th grades. The primary study was conducted among 10th graders at two California high schools. Quantitative and qualitative data were gathered using survey questionnaires, interviews and structured observation, along with student test scores from two California standardized tests – the California High School Exit Exam and the California Standards Test. A total of 980 students participated in the primary study, with 636 in the experimental group and 344 in the control group.

Main Findings of the Primary Study

- 61% of all students reported being affected by test anxiety, with 26% experiencing high levels often or most of the time.
- There was a strong negative relationship between test anxiety and test performance; students with high levels of test anxiety scored an average of 15 points lower on standardized tests in mathematics and English-language arts than students with low test anxiety (Figure 1 top right).
- In four matched-group comparisons (involving samples of 50 to 129 students) there was a significant increase in test performance in the experimental group over the control group, ranging on average from 10 to 25 points.
- In two of these matched-group comparisons, this significant increase in test performance was associated with a significant decrease in test anxiety in the experimental group.

To view the executive summary of this report or to view the full 372 page e-book version of the study, go to www.heartmath.org, click on research and then publications.

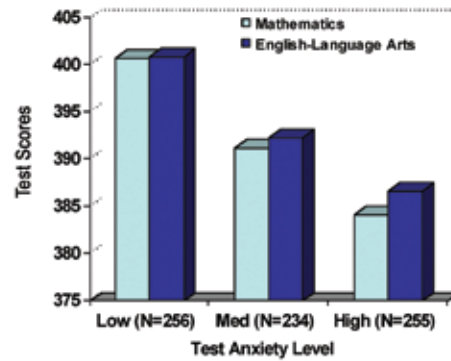


Figure 1: High school exit examination scores by baseline test anxiety level.

Student midterm California High School Exit Exam (CAHSEE) scores in Englishlanguage arts and mathematics have been classified into three groupings (N=number of students) according to the baseline test anxiety, as measured by the Spielberger Test Anxiety Inventory Global Scale score. A strong, statistically significant ($p < 0.001$) relationship is clearly evident between mean level of test anxiety and mean performance on the standardized tests. The higher the anxiety, the lower the test score.

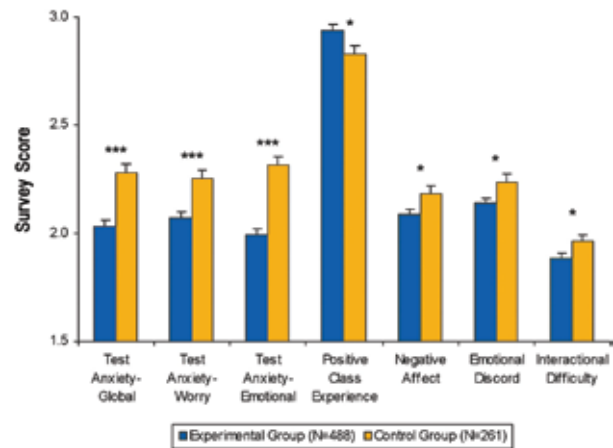


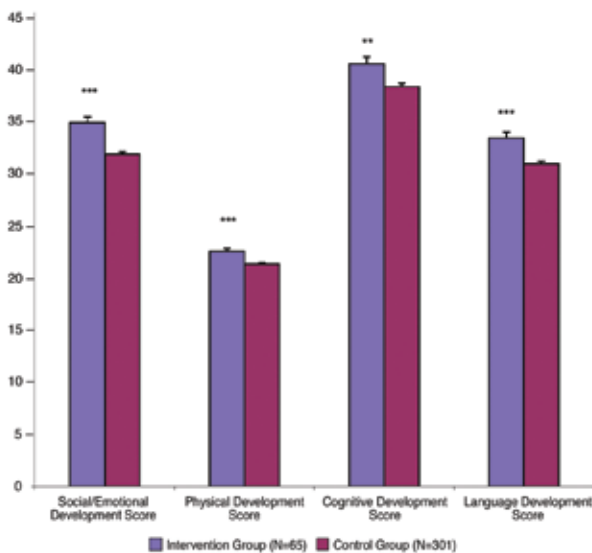
Figure 2. Pre- and post-intervention changes in test anxiety and socioemotional measures comparing intervention and control schools.

Results of pre-and post-intervention changes in measures of test anxiety (Global scale, Worry component and Emotionality component) and socioemotional scales (Positive Class Experience, Negative Affect, Emotional Discord and Interactional Difficulty) showing significant differences between the intervention and control schools. * $p < 0.05$, *** $p < 0.001$.

Other Research Studies

Early Childhood Study

An evaluation study on the impact of the Early HeartSmarts (EHS) program was done in the 2006-2007 school year with preschool children in the Salt Lake City School District. The study was conducted using The Creative Curriculum® Developmental Continuum with three measurements recorded throughout the school year. This teacher-scored 50-item instrument measures student growth in four areas: social/emotional, physical, cognitive, and language development. Children in 19 classrooms were divided into intervention and control groups, with the intervention program targeting a smaller group of children of lower socioeconomic status. There is compelling evidence showing the efficacy of EHS in increasing psychosocial development in all four developmental areas.



Early HeartSmarts Study

Results of Early HeartSmarts implementation with an intervention group compared to control group as measure by the Creative Curriculum Developmental Assessment. N-number of participants.

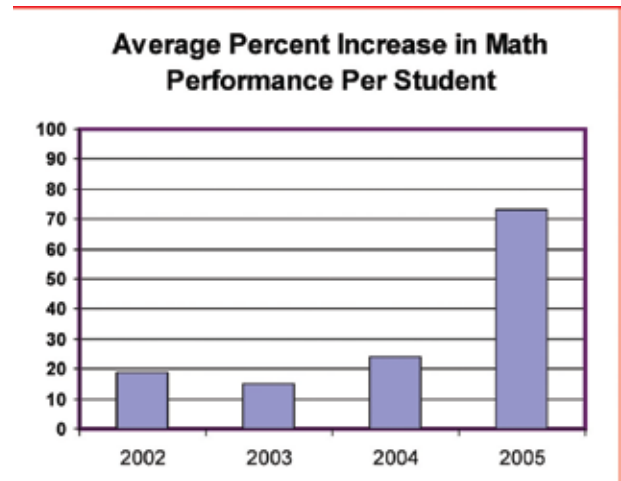
Teacher Resiliency

A HeartMath intervention program for students at four Nottinghamshire, elementary schools included Resilient Educator training for 82 teachers. A pre-Personal and Organisational Quality Assessment (POQAr) was administered prior to the Resilient Educator training and a post-POQAr was administered at the end of the school year with 76 of the same school staff. Noticeable shifts in perception, sense

of health and quality of emotion were evident as a result of the training and overall intervention. Fatigue dropped from 48% to 33%, anxiety went from 30% to 20%, reports of inadequate sleep went from 38% to 27%, muscle tension from 28% to 13%, reports of good or excellent health increased from 56% to 72%, job accomplishment increased from 78% to 91%, sense of not enough time decreased from 80% to 60% and reports of excellent work results went from 65% to 76%.

Algebra Test Performance

In 2002, the University of Cincinnati Clermont College (UCCC) and the Greater Cincinnati Tech Prep Consortium (GCTPC) formed a partnership to help high school seniors perform better on the college math placement test (COMPASS). UCCC and local high school staff have woven HeartMath tools and technology into their algebra programs to help students improve performance. Based on the COMPASS pre-and post-tests, the following results were obtained with 46 students over a 4 year period. The results improved dramatically in the year 2005 because of more intensive teacher training.

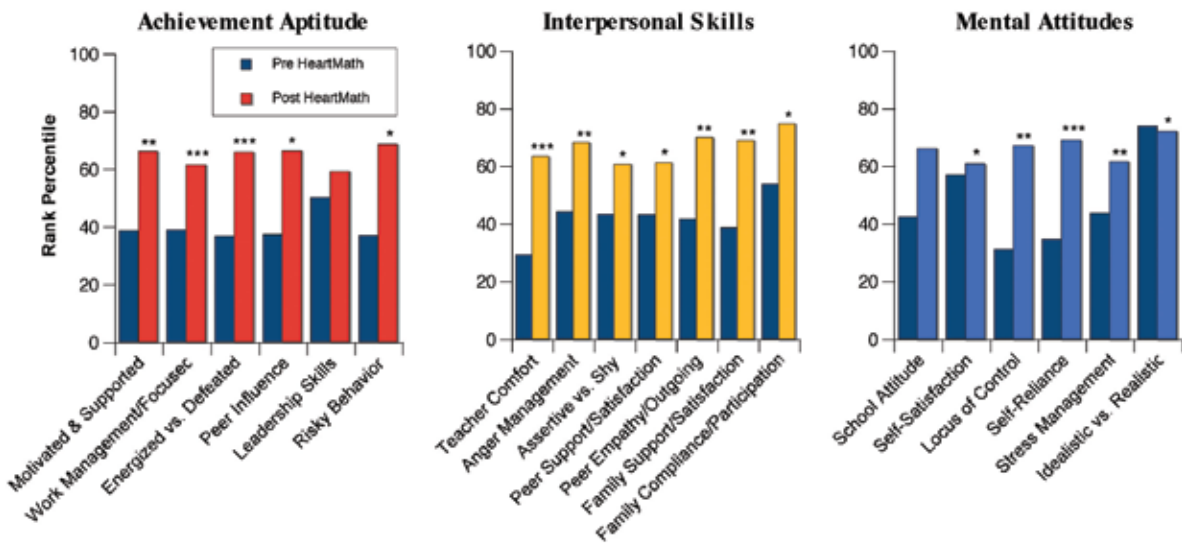


Algebra Test-Improvement Scores

The figures above represent the average increase per year among algebra students using HeartMath skills to improve performance on the COMPASS pre- and post-tests.

Improved Attitudes and Behaviours

A joint study conducted by the Institute of HeartMath and the Miami Heart Research Institute examined the impact of a Heart Math program on psychosocial functioning and physiological responses to stress in 32



students at Palm Springs Middle School near Miami. Pre- and post-evaluations of students' achievement aptitude, interpersonal skills and mental attitudes (see graph at the top of page) were conducted using the Achievement Inventory Measure (AIM). Results indicated significant improvements in 17 of the 19 areas of psychosocial functioning measured by the inventory. Published in *Integrative Physiological and Behavioural Science*.

ADHD Study in England

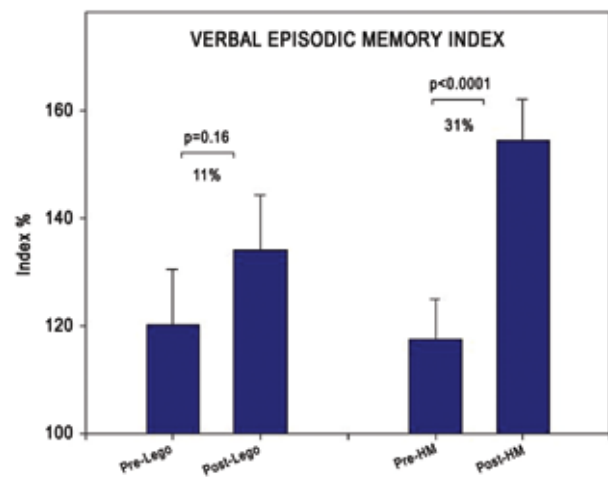
HeartMath's United Kingdom partner, Ultima Performance Ltd., in collaboration with Plessington Technical College and the CDR Ltd. research organization, conducted a double-blind, placebo, controlled study with 38 students, ages 10-12, identified with AD/HD. The study's hypothesis was that HeartMath behavioral training would improve cognitive function, as independently measured by CDR to a level of significance ($p > 0.05$) in the intervention group. All children received a noninvasive cognitive function test and a standardized 10-minute protocol on HeartMath's emWave® PC technology, which established levels of cardiovascular coherence. These tests acted as baseline measurements.

Both groups, working individually with a research assistant, would spend 15 minutes a day either playing with LEGO® toys or using one of the HeartMath tools followed by one of the games in the emWave PC software. At the end of six weeks, those being assessed completed the same baseline measurements, as

well as a teacher-rated "Strengths and Difficulties" test and the short version of the Connors Teacher Rating Scale. Published in *Journal of Research in Special Education Needs*.

Summary of Results for HeartMath® Group Intervention

- Immediate word recall task improved overall by 24%.
- Delayed word recall task improved overall by 45%.
- There was a 50.8% improvement overall in the HeartMath group, compared to a 3.1% improvement in the control group



Quality of verbal episodic memory is a key to a person's ability to learn and recall information. $p = 0.16$ represents 1 in 6.25 probability, $p = 0.0001$ represents 1 in 10,000 probability.



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