designs for thinking
transforming how we see learning

Research Highlights from Student Successes With Thinking Maps® Edited by Dr. David Hyerle

This document is a selective collection of excerpts from Student Successes with Thinking Maps®: School-Based Research, Results, and Models for Achievement Using Visual Tools (Corwin, 2004) showing quantitative and qualitative evidence of student performance changes when Thinking Maps® are used systematically over time. At this time, Thinking Maps, Inc. is in the process of continuing research and collecting and reporting on data from schools that have implemented Thinking Maps® over the past five years. A previous collection of data was published in Appendix A in A Field Guide to Using Visual Tools (Hyerle, 2000: A.S.C.D.) showing significant gains in reading, writing, and mathematics from 1995 to 1999 in schools across many different states, including Texas, North Carolina, Florida, and Mississippi. For information about implementing Thinking Maps® and updates on research, please go to www.thinkingmaps.com. For more information on the authors of this book, excerpts and video clips about several of the chapters, please visit www.mapthemind.com.

From the Introductory Chapter: Thinking Maps as a Transformational Language for Learning, by David Hyerle Ed.D.

Much like a momentary respite before jumping back into an exciting journey, this book represents a resting place for present research, results and reflections from over fifteen years of bringing Thinking Maps into places of learning. The authors of the sixteen chapters before you bring forth deep insights grounded in practical examples and experiences from their travels. Together their work creates a compelling display of what can happen when Thinking Maps are used as a language for learning by students across different cultures and languages, for deepening instruction by teachers in classrooms, and for raising the quality of professional development and change processes within whole schools.

Thinking Maps are used as a language for learning by students, teachers, administrators and community members across different cultures and languages, for deepening instruction by teachers in classrooms, and for raising the quality of professional development and change processes within whole schools and school systems. This is because as a language of visual tools grounded in thinking processes, Thinking Maps ultimately unites a learning organization around a well documented need in classrooms and a central organizing principle for 21st century education: equity of access to--and explicit teaching of-- higher order thinking tools for every child and every adult on the journey of lifelong learning.

From the beginning, the focus of the work using Thinking Maps has been on all teachers immediately training all of their students across their whole school to become fluent with the tools. Over the years, approximately 4,000 whole school faculties have implemented the maps, thus representing a great multiplier effect as large numbers of students from kindergarten to college have become fluent with Thinking Maps. From first introductions to complex applications over time, students, teachers, and administrators move from novice to expert use in these tools, using maps independently, in cooperative groups, and as participants in schools for visually sharing ideas, and for creating final products.

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com

designs for thinking
transforming how we see learning

Chapter 3 Leveling the Playing Field for All Students
Bonnie Singer, Ph.D. President, Innovative Learning Partners
Pages 32-33

At the end of fourth grade, David had an updated neuropsychological evaluation before he moved away to another state. His WISC-III verbal IQ remained in the superior range (138), and his non-verbal IQ score rose 12 points from the below average to the average range (98). Interestingly, significant gains were evident in some key areas of
cognition – namely his attention to visual detail and his ability to perceive part-whole relationships, integrate information, and plan and organize an approach to a task. In our two years of working together, we used the Thinking Maps to develop each of these skills in natural and authentic learning contexts. When David moved and began to receive special education services, his learning center teachers could not determine what was wrong with him. Despite significant cognitive discrepancies, he was meta-cognitively, motivationally, and behaviorally active in his own learning process, which masked the severity of his learning disability and allowed him to function on par with his peers.

Chapter 5 Closing the Gap by Connecting Culture, Language, and Cognition
Yvette Jackson, Ed.D., National Urban Alliance
Pages 58-59

The Thinking Maps are a core component of the cognitive strategies we provide because they are tools that have a direct impact on how students construct, communicate and create meaning. In each district in which we work, we have witnessed how teachers immediately employ Thinking Maps as one of the most used tools of their instructional repertoire. The result has been what administrators and parents associate with the most impressive and valued impact our Literacy Initiative has on learning-which is significant growth in the achievement of students who have previously been labeled as "low achievers". In Indianapolis, schools have recently experienced a 12 to 20 point jump in scores, which is significant. While across the state of Indiana scores have fallen since 1998 by 1.2 percent, the "Vanguard Schools" in Indianapolis participating in the Literacy Initiative experienced an average increase of 10.4 percent, with seven of the elementary schools showing double digit gains. In Seattle, a study showed that African American students who failed the reading section of the Washington Assessment of Student Learning (WASL) in 1999 and then spent at least two years with teachers who participated in the initiative passed the 2002 test at twice the rate of those students who spent a year or less with participating teachers.

After our third year in the Indianapolis project, the Board of Education summoned the Assistant Superintendent to explain why they should continue to fund the Literacy Initiative. We decided that the most convincing way to respond would be for teachers from kindergarten through high school to share with the Board the effects of the strategies/practices they had been implementing in their classrooms. Everyone of the teachers talked about the impact the Thinking Maps had on the achievement of their students: a kindergarten teacher presented samples of her students' studies in science through each of the eight Thinking Maps; middle school literacy teachers shared examples of student expository and narrative writings; and a chemistry teacher demonstrated how he applied the maps in chemistry. Beyond the strong impression these presentations made on the Board, the real

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com

designs for thinking
transforming how we see learning

epiphany was experienced by the high school teacher who exclaimed, "Wait! The kindergarten teachers are using the same maps we are. If every teacher is working on this kind of thinking with their students, think how strong they'll be by the time they get to high school."

Chapter 6 Maps for the Road to Reading Comprehension
Thommie DePinto-Piercy, Ph.D. Principal Mt. Airy Elementary School
Pages 72-73

The central outcome of the initial training and ongoing follow-up design is represented not only in the high quality first grade classroom conversation at Mt. Airy School, but in the quantitative results on the school's state assessments. Following the first year's implementation of Thinking Maps, writing scores realized a 15% increase on the state mandated assessment, Maryland State Performance Assessment Program. Later, Mt. Airy Elementary came from being a school in the middle of the road school to becoming the highest performing school of the 21 elementary schools in Carroll County.

In addition, the No Child Left Behind legislation requires that each state test content knowledge and how well students perform. Maryland meets this requirement by using the new 2003 Maryland School Assessments. The corner stone for Maryland's accountability system is the measure of Annual Yearly Progress (AYP). Again this year, Mt. Airy Elementary is the highest performing school in the county. Mt. Airy's scores are higher than the Maryland state average and higher than the county average, remarkably achieving AYP in all eight Subgroups, including Special Education. The results across our student population shows that literacy and cognitive development work together as teachers help students across the road to reading comprehension with Thinking Maps as a new language for literacy.

Chapter 7 Empowering Students From Thinking to Writing
Jane Buckner, Ed.S.
Write From the Beginning (elementary)
Write for the Future (secondary)
Pages 78-79

Within one year, the number of students passing the writing assessment (In Florida) had risen to approximately 97%. At the end of the second year, every student taking the FCAT writing assessment scored at least a passing 3.0 and the school achieved a state grade of "A."

This same escalation of writing scores can occur all the way through secondary school as students are taught to plan and organize their writing using Thinking Maps. In 1995, Melba Johnson, a high school English teacher in Brunswick County, North Carolina attended a Thinking Maps Training and immediately utilized the maps in her classroom to teach her students how to organize for writing. Within one semester the scores of her students taking the tenth grade state English II Writing Examination on literary analysis rose five points. One year later, Melba attended training on the use of Thinking Maps specifically for the teaching of writing, and for the last five semesters of her teaching career one hundred percent of her students passed the high school English II Writing Examination. The only difference in her instruction was teaching her students how to use Thinking

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com

designs for thinking
transforming how we see learning

Maps to plan and organize for writing based on the specific purpose and thought processes involved in the assignment. In addition, Melba experienced the same success with her eleventh and twelfth grade Advanced Placement students by using this same process.

Chapter 8 The Challenge of High Stakes Testing in Middle School Mathematics
Janie B. MacIntyre, M.Ed.
Page 88, 90, 91-92

I used my opportunity as a Christa McAuliffe Fellow in 1999-2000 to conduct a control group study to determine the impact of Thinking Maps on math achievement. I found that after an entire year of Thinking Maps implementation, exceptional and regular education students End of Grade test results indicated developmental gains of up to four year's growth in one year's time.

In the 2000 post-test, given after Thinking Maps implementation, the results show a five-fold increase in the average developmental growth scores of the research participants at Nash Central Junior High School and a seven-fold increase in the average developmental growth scores at Southern Nash Junior High School. As expected, the more profound change in individual developmental growth occurred overall at our sister schools that had not previously used Thinking Maps at all. Of the 133 formerly labeled low-achieving students, 71 demonstrated proficiency on the first trial.

Chapter 10 A First Language for Thinking in a Multi-Lingual School
Stefanie Holzman, Ed.D.
Page 108

My experiences from seeing the maps in use in other schools in Long Beach Unified School District made me believe that I our students would learn the maps and the result of all this would be higher academic achievement. This did happen. The numbers are in from the standardized tests given in California. The state has a very complicated formula to determine expected growth. Roosevelt school was expected to gain 11 points overall. We exceeded that goal and the gain was 60 points overall. Not only did the school as a single unit make growth, but so did our significant subgroups: Hispanic students, English Language Learners, and students of low socio-economic status as determined by free lunches. Additionally, with the implementation of the No Child Left Behind legislation, the expectation has been that 13.6 percent of the students in our school should meet the standards in language arts (including reading, vocabulary, spelling, grammar, and punctuation), and that 16 percent should meet the standards in math including basic math facts and word problems. If a school does not meet the expectations, then it is identified as a Program Improvement school and must take a number of corrective actions. As of this writing, and with two of our four tracks test results in (including tracks with literacy classes for retainees and for students who entered school in 4th and 5th grade with no English skills), the results demonstrate that we are clearly not in program improvement.

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com

designs for thinking
transforming how we see learning

Chapter 13 Embracing Change: The Evolution of Thinking in a K-12 School
Gill Hubble, M.Ed.
Pages 136-137

The learning outcomes for our students based on fundamental thinking processes and learning approaches has been remarkable. Academic results in national league tables have risen consistently, with the College a national academic leader, placing first or second in New Zealand in every senior external examination category for the last 5 years, up from 12th at the start of our evolutionary process. Other indicators of success are improved results from international tests and PAT's (reading, listening and comprehension test), the high level of acceptance and approval from students and parents, and the continued use of double-processing using the maps and linear writing from our students who now attend universities.

Chapter 13 The Mississippi Story
Marjann Kalehoff Ball, Ed.D.
Pages 141-145

It may be concluded that mapping made a significant difference on reading test scores. Whether a person is characterized by age, social roles assumed, or other criteria such as traditional or nontraditional made no significant impact on reading test scores. These findings were published in my dissertation at the University of Southern Mississippi in 1998.

The ripple effect from the utilization of Thinking Maps is amazing. Based on the success of students in my college classes as well as the achievements of my student Diana and the interest of other nursing students and the nursing instructors, a pilot program was set up in Spring 2002 at JCJC by which entering Licensed Practical Nursing (LPN) students would be instructed in the use of Thinking Maps in their nursing courses. Upon taking the exit exam at the conclusion of the Structure and Function course, 100 percent of the students passed the exam, the first time this had occurred in 17 years. Another group of entering LPN students was taught Thinking Maps in Spring 2003 with a 100 percent passing rate on the Comprehensive Fundamentals of Nursing Exam (Educational Resource Inc. Fundamentals of Nursing) given at the end of the semester…

Located in a largely rural area of the state, the Jones County School District composed of seven elementary, three middle, and three high schools piloted Thinking Maps across the district in Grade 4. Twenty-five fourth grade teachers utilized the Maps, and after one year, the district's score increased from level 3.4 to 4.3 (with 5.0 being the highest) with the 4th grades' scores increasing most significantly. Because of this improvement in 4th Grade students' scores, implementation for the whole district began. Eight years later, Jones County continues to show growth and maintain high achievement scoring a level 4.0 in 2003.

As teachers utilized the maps, they noted significant improvement in scores on teacher-made and standardized test. This success peaked an interest in Write From the Beginning, a K-5 writing sequel to Thinking Maps, which they implemented in year two. At the end of the year, the writing scores of the students from this school on the state writing test were the highest in the district. Nicholson Elementary exceeded the state's average in both 2002 (.4 higher) and 2003 (.5

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com

designs for thinking

transforming how we see learning

higher). Roseland Park, who was Picayune's second year Thinking Maps school and Westside, a third year Thinking Maps school achieved Adequate Yearly Progress (AYP) in all areas (reading, language, math, social studies, and other indicators-growth index) as per federal guidelines in 2003…

After a little over a year using the Maps, the writing scores of 7th Grade students on the state writing assessment increased from level 2.2 to level 3.0 (with 4.0 being the highest level). Only two students received level 4 in 2002, while 40 students attained level 4 in 2003. Upon investigation of what had made such a difference, it was noted that most of the students achieving level 4 had been instructed in Thinking Maps and had been using them in their classrooms.

Larry Alper, M.S.
Co-Director

114 Abbott Road
West Brattleboro, VT 05303

802.254.5403 (ph/fx)
lalper@sover.net

David Hyerle, Ed.D.
Co-Director

144 Goose Pond Road
Lyme, NH 03768

603.795.2757 (tel/fax)
designsforthinking@valley.net

www.mapthemind.com