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ABSTRACT

The Mem-ExSpan Accelerative Cognitive Training System (MESACTS) is described as a cognitive skills training program for schools, businesses, and industry. The program achieves extraordinary academic results in reading and mathematics with 1 semester of input 4 days a week for 30 minutes a day. Intensive versions of the program accelerate information processing for individuals aged 10 years to adulthood. The program builds on the manuals, software, and workbooks of other cognitive skills training by adding auditory components to form an interactive multi-media technology. The system teaches left-brain sequencing of complicated information that is essential in mathematics, reading, writing, and critical thinking. When integrated with right-brain pattern detection skills, the system creates a method for rapidly encoding and decoding information. Research studies involving 583 subjects aged 10 years to adulthood demonstrate the effectiveness of the program. The MESACTS is useful in developing the cognitive skills needed for learning achievement. Fourteen references are included. (SLD)

Cognitive Skills Training Improves Listening and Visual Memory for Academic and Career Success

by Jan Erland

1990 ushered in the "Decade of the Brain" and with it came research to further explore how intelligence can be improved. Intelligence requires high levels of information processing capability for an individual to excel academically, and rapidly learn systems and new technologies in the workplace.

When we cannot quickly process complex information and think critically, we find ourselves behind in world economic competition, at the bottom of the educational ladder, and not qualifying for better paying jobs. Trapped at certain career levels, we wonder how to increase income and job satisfaction.

Searching for answers, we overlook the obvious: we must create a process for learning (Creating the Future, Dickinson, 1991).[1] Individuals will benefit, reaching optimum levels of learning proficiency. Problem-solving and critical thinking cannot be left to chance or incidental workbooks and seminars. We must look at the foundation of learning: *training information processing, thus creating higher levels of intelligence and critical thinking.*

Available Cognitive Skills Training Programs

From the late 1950s, into the 1980s, two significant cognitive skills training programs existed: (1) Reuven Feuerstein's *Instrumental Enrichment/Mediated Learning (IE/ML)*[2] and (2) Mary and Robert Meeker's *Structure of Intellect (SOI)*[3] which was applied in Japan in the 1970s through the 1980s. A third cognitive skills program, The Guilford SOI Education Institute's (Japan) *Structure of Intelligence Education* (GSIE), will be marketed in the U. S. as *Intelligy, Inc.*[4]

Now, a fourth cognitive skills training (curriculum-and-instruction, C & I) program is available for schools, business and industry. Since 1981, learning specialist Jan

Erland has researched, developed and implemented the *Mem-ExSpan Accelerative Cognitive Training System*. For learning centers, clinics, schools, and industry, the program achieves extraordinary academic results in reading and math with one semester of input, four days a week, thirty minutes a day. *Mem-ExSpan's* 10- & 15-Day intensive programs accelerate information processing for individuals ages 10-to-adult.

Mem-ExSpan's system of *Pattern-Detection* and *Sequencing-Skill* training promotes being "Quick on the Uptake" when learning new material for systems and technologies. By rapidly encoding and decoding information, high retention rates result.

The Meeker program uses visual manuals with computer software applications, and the Feuerstein program applies visual workbook lessons. *Mem-ExSpan* builds upon this instruction by adding auditory components forming an interactive multi-media technology. *Mem-ExSpan* coding drills on video-, audio-tapes and computer programs, with manuals, pave the way to higher-order thinking.

Media Applications Offer Entertaining Instruction

According to Albert Bandura's Social Learning Theory, [5] if material is interesting and motivational, it will be retained. Bandura's precepts and J. Piaget's Theory of Intelligence (1950) [6] require models with star qualities to enhance learning. The *Mem-ExSpan* inter-media system, The Bridge To Achievement, applies these theories using celebrity identities.

A French comic art theme dominates. On video, large ventriloquist characters, who mimic celebrities, teach information chunking. By choosing and identifying with favorite celebrities, the student eliminates self-consciousness when speaking with the videoed characters. One-by-one, the character faces appear close-up on the screen and speak chunks of information. By identifying with the actor's personality, the participant models after the videoed characters. This sequencing-synthesis is the basis for The Bridge To Achievement's training.

The technology of using vocal intonation by the character impersonators expands upon Suggestopedic (Lozanov, 1978) [7] accelerative learning. Computer sound-language

is mechanical, and cannot offer the fluid intonation needed for auditory memory improvement.

Mem-ExSpan's exclusive chunking system teaches left-brain sequencing of complicated information essential in algebra, reading comprehension, written communication, procedures, spelling, computer processing, and critical thinking. When integrated with right-brain pattern-detection skills, it creates a method for rapidly encoding and decoding information.

This media method is an application of Kaufman & Kaufman's Simultaneous vs. Sequential Dichotomy (1983). [8] Global right-brain learners are taught to think sequentially. Analytical left-brain individuals learn to engage in global, visual thinking. The rapid shifting of information, through the video and audio chunking systems, facilitates whole-brain learning.

A Solid Research Base

Two published research reports on the application of the *Mem-ExSpan* System (including a subsequent longitudinal report, Erland, 1989) [9] indicated that 40 experimentals, ages 10-55, made robust improvement on standardized cognitive skills test measures. Test instruments for the pre- and post-tests included the Detroit Tests of Learning Aptitude-1 (1935;1967), [10] and the Woodcock-Johnson Psycho-Educational Battery (1977). [11] The entry level intellect of the 40 ranged from mentally handicapped to gifted. Fifteen were learning disabled with a variety of learning problems.

Participants were assigned to small instructional groups according to age and pre-testing entry ability levels. Each group was drilled on *Pattern-Detection* and *Sequencing-Skill* training lessons, 75 minutes daily, five days a week, for three weeks. This was less than 20 hours of intensive training, excluding assessment time.

Post-treatment assessment immediately followed the training, and additional longitudinal testing one-to-three years post-training. All ability levels, from low to high, benefited from the training by increasing their information processing ability.

The Gifted students, including some Gifted-Dyslexics, excelled in school. They have entered professions, or embarked on prestigious careers. Many of the learning disabled went on to college and, without tutorial assistance, graduated and obtained self-supporting jobs. Some became professionals. IQs increased by 20 - 40 points. No failures were apparent in the treatment group, and the improvement was enduring.

A subsequent *Mem-ExSpan* data-base of 523 individuals ages 10 - adult was administered the Woodcock-Johnson Psycho-Educational Battery (1977). Before the training, the group's average was at the 64th percentile in visual processing, and at the 58th percentile auditory memory processing. Following The Bridge To Achievement training, the average was at the 84th percentile for visual memory processing, and at the 89th percentile for auditory memory processing. The published longitudinal report verified that memory and thinking retention maintained.

A fifth-grade public school class of twenty students made up a field test study (in publication process, Erland, 1991) [12]. A no-training control group was randomly selected from the teacher's previous four of fifteen teaching years. The experimental fifth grade class had the media-driven *Pattern-Detection* and *Sequencing-Skill* training; the other group did not. The training consisted of 30 minutes of first-thing-in-the-morning brain drilling, four days a week, for 12-weeks in the Spring semester.

Achievement was measured by the Science Research Associates (SRA, 1985) [13] standardized achievement tests. Changes were stated in Grade Equivalent (G.E.) values. The amount of learning growth expected in one year is 1.0 G.E. Following the *Mem-ExSpan* cognitive skills training, there were 2.44 to 4.00 years G.E. gains reported on the Reading and Math SRA subtests, significant at the $<.001$ level. The class began the school year with a Mean fifth grade ability, and left with a Mean functioning level between eighth - ninth grade in Reading and Math.

Comparison of reading and math results of the 20 fifth-grade students in the field test study, stated in G.E. year gains:

	Training	No Training
Reading Total	3.76	1.66
Comprehension	3.79	1.86
Vocabulary	3.16	1.28
Math Total	3.22	0.96
Computation	4.00	0.65
Concepts	2.66	1.13
Problem Solving	2.44	1.56

The reading and learning disabled students in this experimental fifth-grade classroom setting also showed marked improvement. Six of the seven RD/LDs made 1.1 - 7.2 years G.E. gain in Reading. Four of the seven RD/LDs made 1.0 - 4.9 years G.E. gain in Math. By junior high, several had their RD/LD classifications removed, and became independent learners.

Longitudinal data was obtained for 16 of the 20 students in this pilot fifth-grade study, for the two years subsequent to the training. Data showed that the gains maintained. While in the subsequent sixth and seventh grades, the students were still performing at elevated eighth to ninth grade levels in Reading and Math.

Information Processing Is Foundational To Learning Achievement

Many learners have difficulty with mathematics and science. As few as 12% of high school seniors enroll in calculus, physics and chemistry. [14] Information processing is foundational to this complex area of learning. Specialized cognitive training should be a two-stage process. First, information processing needs to be strengthened for higher-order thinking skill improvement. When these levels are elevated, insuring basic reading and math skill proficiency, then, complex science, technological and other higher-order skills can be taught incrementally.

The forthcoming book, "Your Brain in High Gear: Ready To Compete" by Jan Erland, eliminates "pigeon-hole" labeling. The book includes self-tests with patterns and systems games, inviting readers to understand their own information processing. Fast ways to sharpen the mind are explained to eliminate information overload.

Further information: ***Mem-ExSpan*** **The Image Builder, 2002 Quail Creek Drive, Lawrence, KS 66047, (913) 749-5402.**

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