

PROCEEDINGS OF THE

Jerusalem International Conference on
**Neural Plasticity and
Cognitive Modifiability**

Jerusalem (Israel), 2-5 June 2013



The
Feuerstein
Institute



Step Forward.

MEDIMOND

INTERNATIONAL PROCEEDINGS

Mediating Musical lexical Functions Prepares Children Minds for Textual Reading

Carmon, Y.

PhD Graduated Bar-Ilan University, ISRAEL carmoni@013.net

Abstract

Feuerstein cross disciplines mediation tool included in first reading. Researchers consider first reading as most difficult task that change audio language into visual symbols, building reading Schemata in minds. Intrinsic built-in instruction error is implicitly teaching the general abstract lexical functions to children with concrete concept, causing most difficulties. These functions can be taught explicitly via music concrete playing, enable to build first reading schemata in minds, to simplify any further reading. Music contribution to enhance academic learning is known and fits children natural development, was not tried being itself too complicated. Toy-Musical-Notes easy method integrated computer used in three studies, resulted in significant abstract grasp enhancing of lexical functions taught explicitly in Feuerstein mediation

Keywords: First/second reading schemata; Musical innovative easy notation; implicit/explicit mediating; concrete/abstract concept.

Introduction

All researchers agree that the first time a child reads, is his/her most difficult task of learning. Aiming to understand what does a child take from 1st to 2nd language to ease the later, the author analyzed dozens of reading instruction methods, all found divided into three approaches: phonetic, holistic or eclectic-from both, according to child's needs. All approaches teach three components: letters (consonants/vowels), spelling and syntax, in a *concrete explicit* way. These components are *specific* at each language and need to be relearned at any new reading besides lacking to provide all needed tools for reading.

A second kind of ten reading components was found basic, general, and common to all alphabetical languages including music. They provide first reading schemata which are a series of mind activities resulting in reading, and used in second reading to ease it, but are too abstract and taught implicitly.

The problema

The Problem is that 5-6 years old children have concrete grasp; while enabling to read needs also the second kind of abstract components. Imagine a child that cannot grasp abstract components and is *sentenced to learn them implicitly!* This *intrinsic error* occurs in all approaches and hinders children reading. Though today we label deficiencies better than ever, this intrinsic error is still ignored and leads millions to illiteracy.

Towards solution

Playing music is concrete by activating audio-visual-motor senses. Thus in music even the second kind of reading components can be instructed in explicit way and enhance reading abilities towards easier learning of verbal reading as a second one. It seems a paradox: music language – known as most abstract art - is free of semantic for beginners, and its reading is concretely played, enabling all common reading-components to be instructed concretely. Besides, they create in children's minds the first reading schemata that ease second language reading.

Music is known in educational literacy as fitted to early children and a tool for enhancing academic abilities (Rauscher, 2000). Even though, no school uses music as the first preceding reading to verbal text. The reason lies in the conventional notation system too complicated for young children (Schafer, 1980), and used generally to be instructed after a child acquired verbal reading.

Our solution

The author dedicated nearly two decades to develop an easy music-reading system. Only after 10.000 children, from low SES (Social Economy Status) underwent the TMN (Toy Musical notes) method pioneer study, and no one was found dyslectic, ADHD, or any other learning deficiency, she made her PhD study. The pioneer study's result was unusual hence the average percent of deficiencies at the low SES, are 20-40%. The PhD's significant results encouraged more studies which had also significant findings and the method became established. Once a workable system is discovered, it has many positive aspects one of which is detailed here in the next paragraph:

The development of children's hearing

Music is primary; hearing is a prenatal sense; newly born children recognize their mother's timbre voice happily, listen eagerly to soft voice and are afraid of alien harsh ones. Three-four months old babies enjoy pitch changing in tunes and soon respond by rhythmical motor movements, preceding their mimicry of speaking. So, four musical components order: timbre, volume, pitch and rhythm, precede natural consonants and vowels. This order of universal order, proved in studies as important tool of language comprehension development, and won general consensus (Adams & Bruck, 1993). Mother tongue is learned *by hearing only*, but when children learn to read teachers focus on letters only; the natural order of development is not kept and harms reading understanding. Ignoring pitch/ rhythm of text reading results in monotonic robotic reading. Preceding naturally reading of pitches and rhythms to consonants and vowels is therefore necessary.

The ten functions

The tenfunctions of second components kind, taught in music explicitly, provide the common components that create first reading schemata in children's minds, and ease further reading. They are a) Audio-memory; b) Audio-visual integration; c) Accumulating *decoded data into meaning* d) *The alphabetical principle* that says: each sign has its specific sound in every context; e) *Reading comprehension*, the main cognitive reading goal; f) *Accuracy*, the right base for knowledge; g) *Fluency and velocity* assist comprehension; h) *Directivity and sequence* organize order, showing how to read; i) *Inclusion* - cognitive learning from known to varied develops independent thinking. j) *Structure analyzing of: repeated -varied -similar*, is the base of cognitive analyses that build smart pupils.

The Lexical functions are *divided into senses*: hearing, seeing and movements that a child *feels*. The *cognition* is built on the *feelings*; only then, the higher cognitive functions (as meta-thinking) are developed. All these are taught concretely in music, facilitate playing-reading by finger contiguity on keyboard; using hearing, visualizing, touching and motor movements; while on the other hand, the text reading is abstract.

The TMN way is revolutionary: it precedes music reading before text which becomes a second easy language, while using Feuerstein mediation tools.

Considering musicality- children who started to learn music with T.M.N. method and moved to the conventional script notation, achieved much higher musical level compared to control conventional notation group. TMN enabled the transfer to conventional music *script within 2 to 4 lessons*. Kindergarten-children enjoy playing tunes and integrated computer games with TMN system, not being aware they're learning to read. Children learn 8 signs only (instead of text 26), internalize the common functions and become easily prepared for text-reading.

Feuerstein tools:

In the TMN method we use five general principles from the mediating tools of Prof. Feuerstein (Feuerstein & al, (2013) assigned by Prof. Klein to be relevant for early children. 1) *Focusing*: Concrete keyboard touching uses audio-visual-motor senses to activate reading; eyes focus between notation; keyboard; hands; cognitive control; including the teacher's eye contact and mediating. 2) *Reciprocity* between teacher and pupil: *Feeling excitement* is what real music does with insight, increasing memory and emotional involvement. 3) *Distance, extension*: an example to extend and internalize learning is repeating the *played tunes by singing*. 4) *Encouraging*: the *easy way* of reading increases self confidence in the ability to succeed, which leads to *motivation, satisfaction and Joy of learning*. 5) *Organizing behavioral regulation*: playing together causes listening to others, match playing-times together, and incorporate social relationships.

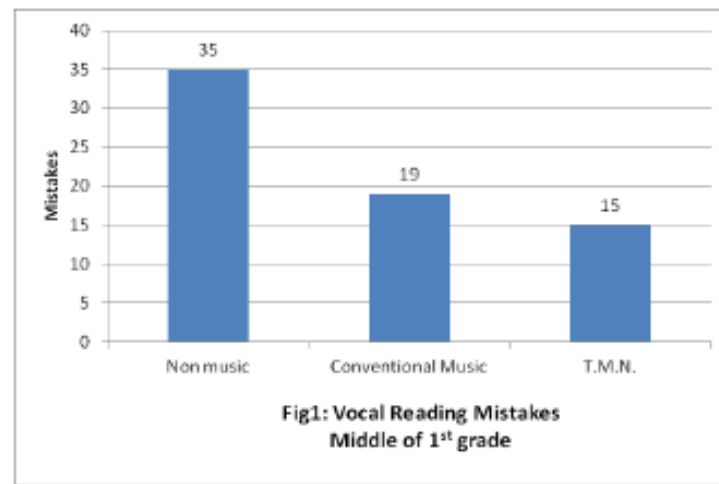
The next after explaining the main intrinsic error and our solution, is to detail how every mediating principle works on the abstract lexical functions, in our concrete TMN way. This full course is in preparation with the new technology of E-learning.

Results:

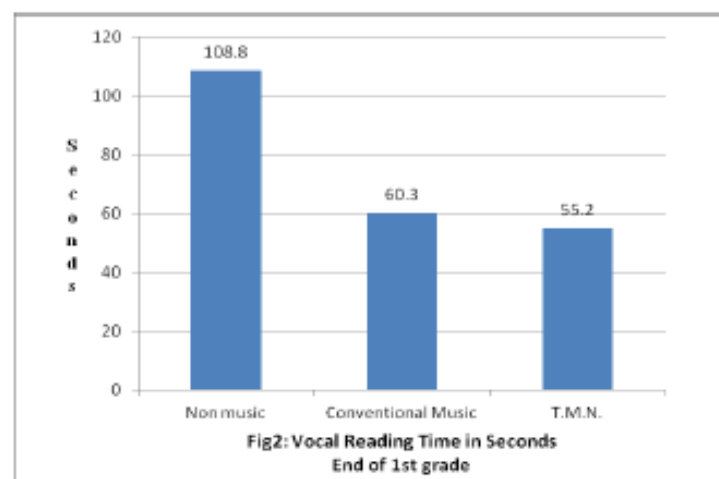
Ten thousand children of low-medium SES have experienced T.M.N. during the trial years and had no reading difficulties at school, while the average percent of deficiencies at that SES, are 20-40%. (OECD)

The 1st interventional study

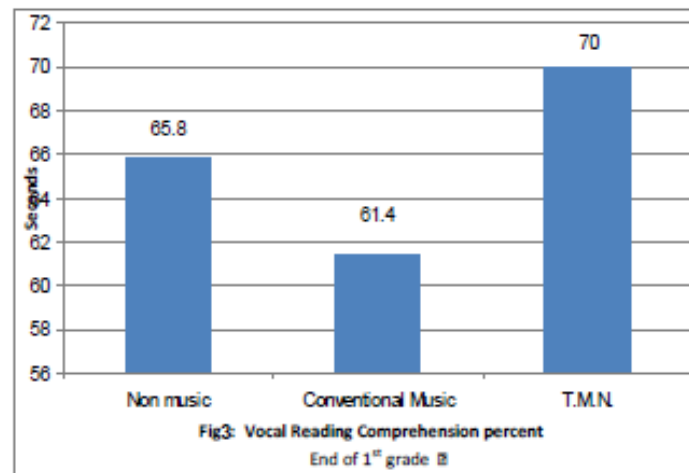
First study (Carmon, 2002) took place with 150 kindergarten children equal numbers of boys and girls from low-medium SES, divided into three groups: TMN; Conventional music; and Non-music programs. Reading acquisition follow-up at the middle of 1st grade showed *mean number of vocal reading mistakes*: TMN 16; Conventional music 19; and Non-music 35 mistakes.



At the end of first grade, *vocal reading* of same stories, were taped. The average *velocity and fluency* was found: TMN – 55 seconds; Conventional music - 60 seconds; and non-music - 108 seconds.

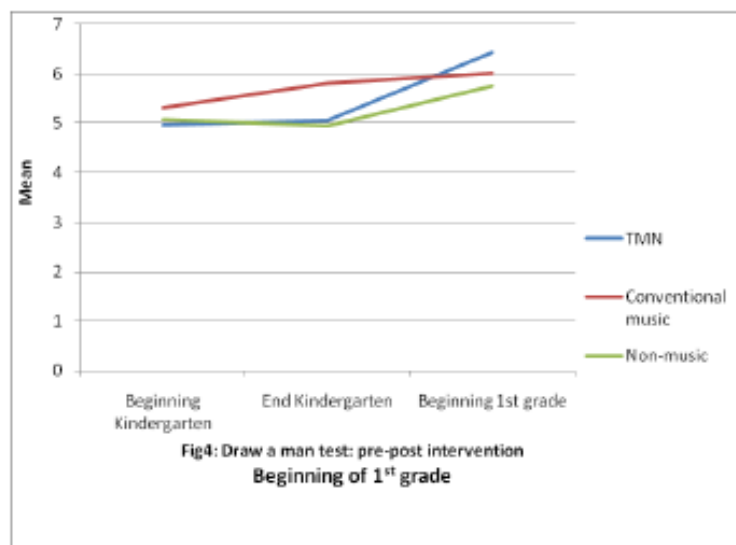


Up to this point conventional music group was behind TMN since music helps anyway. But the *comprehension* questions on the taped vocal story showed *significant* differences: The comprehension averages were: TMN –70 %; Conventional music -61% and non-music - 65%. The conventional music was not helpful.



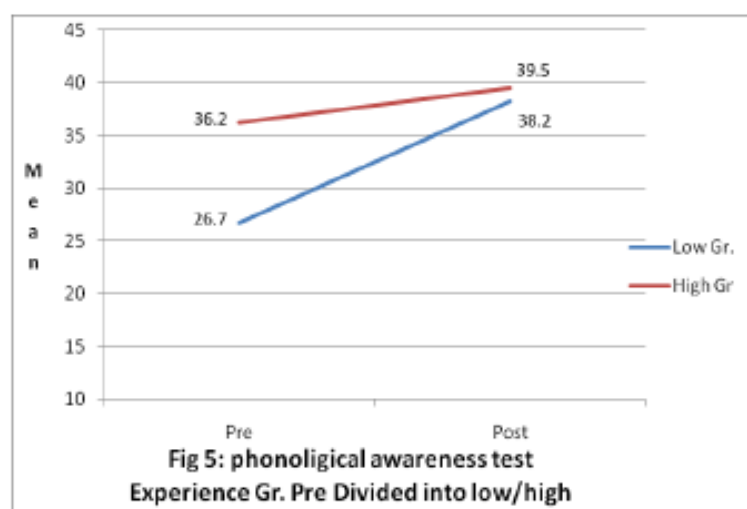
“Draw a man” test

This test shows the achieved level of cognition, taken: at pre- post intervention and after the summer holidays incubation, at the beginning of school. In the pre-test TMN was a bit lower than non-music group, at the post test TMN advanced a bit compared to non-music group, but after the incubation period TMN showed significant achievement compared also to conventional music group.

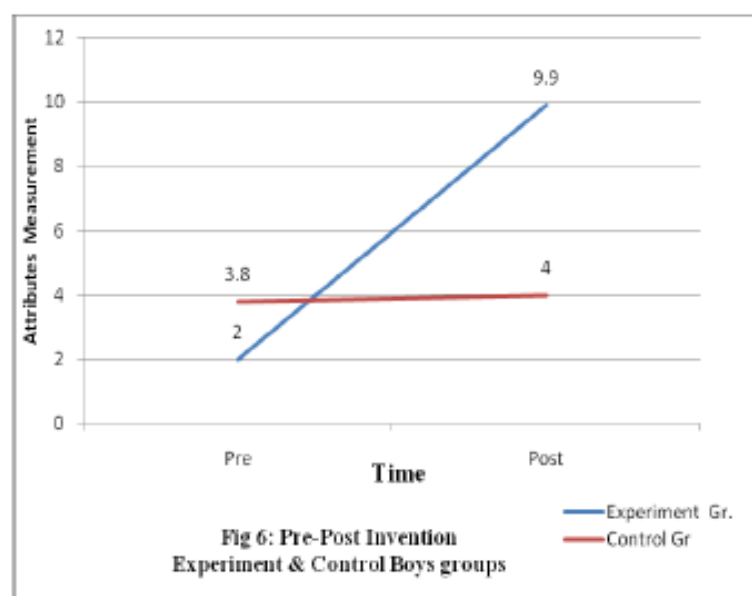


The 2nd study

Population of 120 kindergarten-children in the experiment group and 25 in the control one were all of a very low SES. (Carmon, Whol & Even-Zohar, 2008) After significant results were synonym to the preceded study, TMN group was divided into low/high achievers according to pre test, aiming to find the most benefitted children. The pre-post test example of print conceptualization shows that the top half of the class in post test results achieved up to 10% higher, compared to pre-test. But the lower half advanced more than 30%. The positive point is closing gaps significantly of TMN two half groups. This print conceptualization result fits other preceding studies that predict reading status (Carmon & Even-Zohar, 2010).



Study collaborated with Dr. Elkoshi, R., (Carmon & Elkoshi 2008, in Hebrew; 2010,) took place with 83 school beginners in four classes: experiment group of 19 boys and 25 girls in single gender classes of a religious school, and the control group of 19 boys and 20 girls of same school classes. The TMN intervention program took four meetings only. The pre-post CMS painting test (Elkoshi's development): analyzed children's painting of music lessons according to children's concept level of music. Elkoshi gave the pre-post lessons, got children's paintings, and analyzed the change of print concept behavioral as shown in their paintings on her aural music lessons, including children's description analyzed on their paintings. The great change in the experimental boys' group symbolic-behavior-level compared to control group is clear, in the graph. The girls were of higher symbolic behavior level and changed a bit less. The gaps between boys and girls were closed in four TMN sessions. The graph shows Pre-post intervention results of boys experiment group compared to control group, at the beginning of 1st grade.



Conclusion:

The T.M.N. method enables gradually to extract music's potential. It precedes concretely the general lexical functions to school creating reading schemata. Verbal reading becomes a second, proved by researchers as much easier than the first (Rayner & Pollatsek, 1994; Levin & Korat, 1994). The concrete music reading - playing needs less attention than text, fits earlier ages, prepares maturity to text reading, in a way never imagined before. It prepares children also for conventional notation, making superfluous the arguments of whether it's better, for musicality's sake, to begin music-teaching with or without script. Now early children can read first

concrete music easily with integrated computer games, while preparing for textual second reading, preventing frustration. TMN opens gates to success in learning; considers also low SES children with labeled deficiencies, and cures them.

Another domain is taking care of elder people at risk. The head of World Neurologists Association, Professor A. Kortcyn suggested (2012, aurally) using the TMN also for the elderly as a way to reduce the risk of Alzheimer. He opened the concept that Alzheimer is caused by *depression* which can be *cured* by three means: motor movements, cognitive activities and social inclusion, all of which exist in TMN. The above comment of higher cognition in the ten lexical functions, adds the base on feelings: Since adults tend to cling on to their remote past, when thinking was based on feelings, it seems that the *feeling* indicator can be added to: motor, cognitive and social inclusion, as important function that music arises. Prof. Kortcyn, shifted the TMN method from reading. This is not a study for one individual, and we'll be glad to add partners and supporters to explore the huge challenges together, and bring to the world music enunciation for young and older people's wellbeing. We invite professionals and supporters interested to continue developing this way to write us.

References

- [1] ADAMS, M.J & BRUCK, M.P. (1993). Word recognition: The interface of Educational policies and scientific research, In: *Reading and writing: Interdisciplinary Journal*, 5(2):pp.113-139.
- [2] CARMON, Y. (2002). The influence of learning to read Music on the ability to learn how to decode Hebrew. *Doctoral Thesis*, Bar-Ilan University, Israel (In Hebrew)
- [3] CARMON, Y., WOHL, A., & EVEN-ZOHAR, S., (2008). The Musical Notes Method for Initial Reading Acquisition, *Journal of Cognitive Education and Psychology* [online], 7 (1), 81-100.
- [4] CARMON, Y., ELKOSHI, R., (2010). The effect of learning notation by means of an innovative system on children's musical perception and Symbolic Behaviour. *Min-Ad: Israel Studies in Musicology Online*.pp.1-20.
- [5] FEUERSTEIN, R., & LEWIN-BENHAM, A., (2013). *What learning looks like: Mediated Learning in Theory and Practice*, K-6. Ed: Amazon.
- [6] LEVIN, I & KORAT, O. (1994), Sensitivity to phonological, morphological and semantic cues in early reading and writing. In Hebrew, *Merrill-Palmer Quarterly*, 39: 213-32.
- [7] RAUSCHER, F.H., & ZUPAN, M. A., (2000). Classroom keyboard instruction Improves kindergarten children's spatial-temporal performance: A field experiment. In: *Early Childhood Research Quarterly*. 15 (2), 215-228. University of Wisconsin Oshkosh, Oshkosh, WI 54901, USA
- [8] RAYNER, K. & POLLATSEK, A., (1994). *The Psychology of Reading*, Englewood Cliffs, NJ: Prentice-Hall.
- [9] SCHAFER, R. M. (1980). *Ears Cleaning*, Pub: Schirmer Books. New York.