

## Computer aided photographic memory enhancement and speed reading (case study)

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### Abstract:

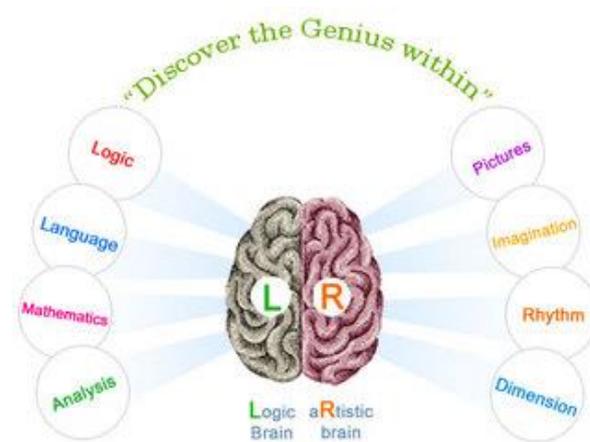
This work aimed to design and testing of a computer program – based eyeQ improvement, photographic memory enhancement, and speed reading to match the reading speed 150 – 250 word per minute (WPM) with the mind ability of processing and eye snap shooting 5000WPM . The package designed based on Visual Basic 6. The efficiency of the designed program was tested on a 10 persons with different levels of education and ages and the results show an increase in their reading speed of approximately 25% in the first month of training with noticeable enhancement in the memory as well as an increase in the ability to read for longer time without feeling nerves or boring, a nonlinear continuously increase in reading speed is assured after the first month with a hope of reaching a target of 3000WPM within 3 – 5 years of training and that is what is called photographic memory where most of the read data processed in right side of the mind, the smaller age, and higher level of education is an effective factor on the results.

**Key words:** photographic Memory, Speed Reading, EyeQ, Memory Mapping.

### Introduction:

It has now become common knowledge that the left and right conical structures of the brain tend to deal with different intellectual functions.

The left cortex primarily handles logic, words, numbers, sequence, analysis, linearity, and listing while the right cortex processes rhythm, color, imagination, day dreaming, spatial relationships and dimensions. What has recently been realized is that the left cortex is not the 'academic' side, nor is the right cortex the 'creative, Intuitive, emotional' side. It is known from volumes of research is that both sides need to be used in conjunction with each other to be both academic and creative success as shown in fig (1).



**Fig (1): Function of the Human Brain**

The Einstein's, Newton's, Cezanne's and Mozans of this world. Like the great business geniuses, combined their linguistic, Numerical

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and analytical skills with imagination and visualization in order to produce their creative masterpieces. <sup>[1]</sup>

Using this basic knowledge of our mental functioning, it is possible to train people in order to solve each of these problem areas. Often producing incremental improvements of 500 percent. One of the modern methods of achieving such improvements is Mind Mapping.

By understanding how our eye works, we can begin to understand how we read and also how speed reading can be accomplished. Contrary to what it may seem like, a reader's eye does not move smoothly over printed text. If this was not the case, you would not be able to see anything. The reason for this being that the eye can only see clearly, things that are held still.

As you are reading a line of text, your eye is actually constantly moving in a series of quick jumps and still intervals. You probably never noticed this because the jumps are so quick they take almost no time at all. However, each individual fixation can take up to half a second.

So the eye basically takes in small gulps of information at a time. In order to develop a speed reading eye, the goal is to gradually increase these short gulps into larger gulps.

The Speed Reading time is a one-week, two-week, three-week ...or six-years course, depending on how speedily you wish to accomplish your goal. let us take a simple example:

Take any book and go through the table of contents thoroughly, mapping the territory you wish to cover. Then roughly plan the time period you will devote to each division of the book, finishing with a general outline in your mind's eye of both the content and your

program of study. This should take only a few minutes. After this, quickly browse through the entire book, familiarize yourself with the different divisions, and start filling in your mental picture of the 'continent' of the book and your goals. <sup>[2]</sup>

The speed reading eye, concentrates its fixation point towards the middle of each line of print. As the speed reading eye moves towards the next line or sentence it starts a couple words from the edge, rather than starting at the beginning, with practice this becomes more comfortable and natural. The brain actually has a good idea of what is going to come next without having to fixate on each individual word. The speed reading eye only needs to check with peripheral vision to make sure the words were as expected.

Each of your eyes is the most amazing optical instrument known to man, dwarfing by comparison even the most advanced macrocosmos- and microcosmos- searching telescopes and microscopes. The nature of this miraculous instrument can be understood, and, being understood, can be controlled and used to your extraordinary advantage <sup>[3]</sup>.

The eyeQ program strengthens the eye-brain connection through high-speed imaging on your computer. The stimulation helps create new dendrites within brain cells, and stimulates the release of chemicals within the brain that enhances our brain's processing speed.

Most think that reading is nothing more than putting information into your brain. In reality, though, reading is a complex activity that involves a type of database and an active frame of reference. <sup>[4]</sup>

### Eye work theories

Here's how it works: Let's say you read a book about the struggles of a family who lost their farm during an economic crisis, you can read and understand the content of that book because it's written in the native language, and you have a "database" in your brain that can process the sentence structure of material that is written in the native language keep in mind this program is as simple as one 7-minute session exercise every other day or as extensive as using all of the components of eyeQ to fill an hour or more per day<sup>[4]</sup>.

The "linear" feature of most reading becomes evident if you just watch the reader's eyes. The dominant movement of the eyes is almost always the same: left to right, back and forth across the page.

Ultimately, your goal will be to move beyond sub vocal linear reading to another approach what's called the visual-vertical technique. In brief, this kind of reading involves, first, eliminating the silent sounding of the words and replacing it with an exclusively visual perception. Second, it's characterized by a dominant sweep of the eyes vertically down the page, rather than by the usual horizontal, left-to-right movement<sup>[2]</sup>.

Some of the different methods used in speed reading are chunking, skimming, and eliminating sub-vocalization. Readers will not "read" the words aloud in their minds. Their eyes skim through the material and comprehension is formed within the brain processes. Most speed readers use a variety of methods to increase their speed and comprehension level.

A speed reader may not read every word on the page. They may skip some sections as it as little overall

consequence to the meaning. Most people can read a selection much faster if they read silently. Reading each word aloud takes time for the information to make a complete circuit in your brain before being pronounced. Some researchers believe that as long as the first and last letter is in place, the arrangement of the other letters in the word can still be understood by the brain because it logically puts each piece into place<sup>[5]</sup>.

Research has shown that, in 80 percent of cases, when readers were not allowed to back-skip or regress, they discovered that their eye had actually taken in the information, and they absorbed it as they read the next few phrases. The speed reader very rarely indulges in these unnecessary repetitions, which dramatically reduce the slow reader's speed.

If each back-skip or regression takes roughly a second, and as little as two are made per line, then on an average page of 40 lines, one minute and 20 seconds are wasted. On a normal book of 300 pages, one minute 20 seconds x 300 pages=400 minutes = 6,667 hours of extra wasted time spent reading (and not comprehending).

For calculate your reading speed in words per minute (wpm) by simply dividing the number of words in the passage by the time (in minutes).<sup>[4]</sup>

Speed Reading Formula:

*Words per minute (wpm) = number of words / time (minute).*

What slows us down: The subconscious barriers that hold back our reading speed. Our brains are capable of absorbing information at an amazing rate. Unfortunately, we only tend to allow them to read at 150 to 250 words per minute. This is all because of the habits we develop when

learning to read. These habits are essential to the learning process but go on become the barriers to evolving our reading once the learning process is complete<sup>[6]</sup>.

### Speed reading rates

Effective speed reading speeds of people who actually use speed reading skills are generally between 600 and 4000 words per minute. This speed depends upon a variety of factors, primarily the nature of the material, the alertness of the reader, the mental speed of the reader, the amount of practice of the reader, innate talent for speed reading, the thinking processes he has taught himself over the years, what he had for breakfast, etc. A 600 word per minute rate is fairly common among beginning and semi experienced speed readers. Speeds over 1000 words per minute require much

more experience and intense concentration. Even at 600 words per minute, which is double or triple normal rates, speed reading can be extremely beneficial.

Most people who first learn speed reading are borne to believe that because their brains seem to be aware of the information they are looking at, that they fully understand what they have just read. The reality is that just being aware of information does not mean you really understand it or are going to remember it<sup>[7]</sup>.

### Historical review of previous works

Computer programs are available to help instruct speed reading students. Vortex Speed Reading was one of the early applications, but it was strictly a productivity tool – a program that only presented text one word at a time. Readers needed to focus on the center

of the screen, not moving their eyes as they would while reading normal text.

A number of speed reading programs use a different approach. These programs present the data as a serial stream, since the brain handles text more efficiently by breaking it into such a stream before parsing and interpreting it. The 2000 National Reading Panel (NRP) report seems to support such a mechanism.

To increase speed, some older programs required readers to view the center of the screen while the lines of text around it grew longer. They also presented several objects (instead of text) moving line by line or bouncing around the screen; users had to follow the object(s) with only their eyes. A number of researchers criticize using objects instead of words as an effective training method, claiming that the only way to read faster is to read actual text. Many of the newer speed reading programs use built-in text, and they primarily guide users through the lines of an on-screen book at defined speeds. Often the text is highlighted to indicate where users should focus their eyes; they are not expected to read by pronouncing the words, but instead to read by viewing the words as complete images. The exercises are also intended to train readers to eliminate [sub vocalization](#), even though it has not been proven that this will increase reading speed<sup>[8]</sup>.

Barron's Business Success books offer useful advice to career-minded men and women who are looking to get ahead in the business and corporate world. Titles touch on all levels of management, marketing, organization, and related business operations. Reading and comprehending a large number of documents and reports—many of them specialized and

technical—is a vital task that is intrinsic to. [9]

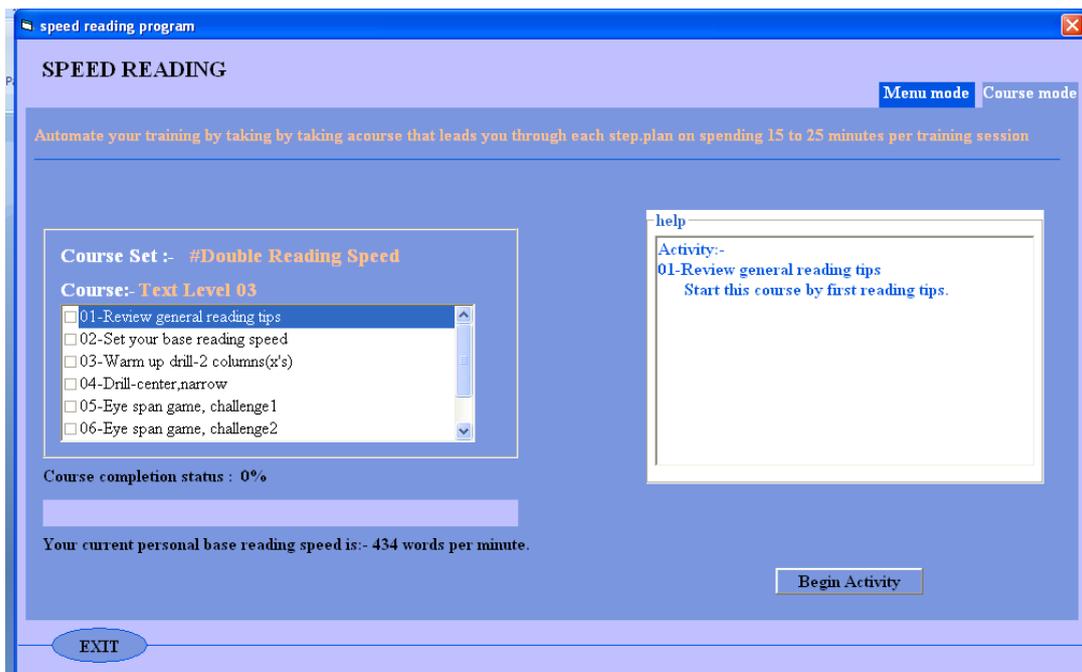
**Designed package structure**

A computer program was designed to help instruct speed reading, and it is classified into two parts:

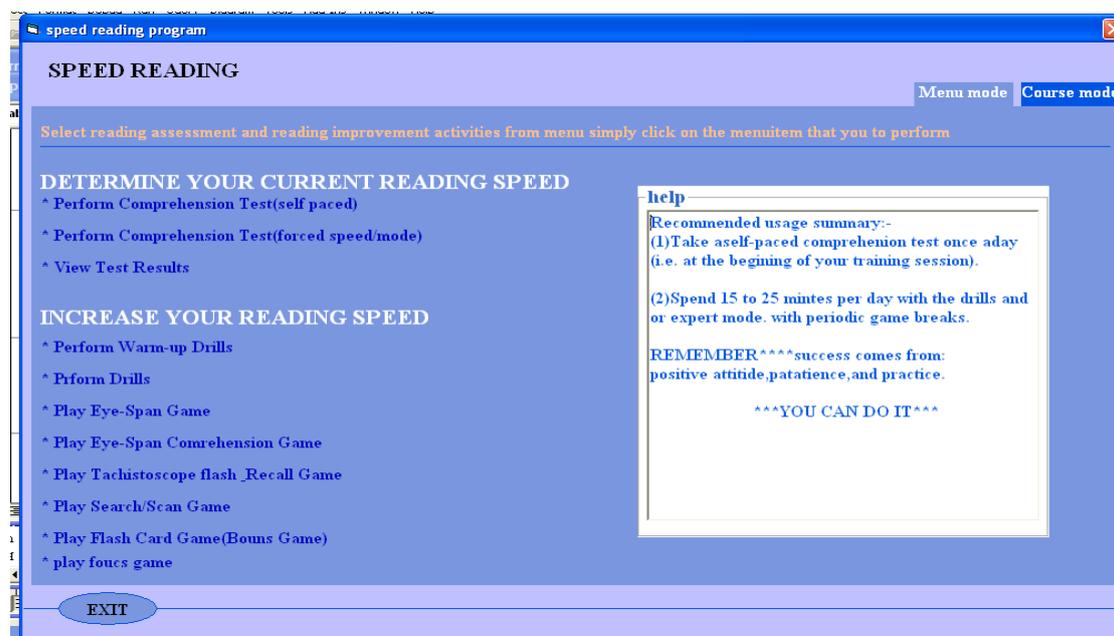
1- Training Part.

2- Testing Part.

In each part there are at least five levels for each (speed reading, memory speeding and eyeQ) and can be done either through course mode or in menu mode as shown in Fig (2) or menu mode Fig (3).



**Fig (2): course mode**



**Fig (3): menu mode**

An efficient and effective speed reading test techniques are used, including:

Testing Comprehension at Varying Speeds:

This is a common speed reading test to

take after learning and practicing your techniques to review how you are doing. Words will flash onto the center of the screen at different rates (Figure 4).



Fig (4): eyeQ training

Eye Span and Peripheral Vision Tests: These are speed reading tests designed to ensure you can see and comprehend any word flashed anywhere in your field of vision. Instead of words popping onto the center of the screen, they appear randomly in any location

and can even be spread over a few locations. A good speed reading program will offer training drills for improving your eye span and peripheral vision Fig (5).



Fig (5): eyeQ training

A General Speed Reading Test: After training yourself to read at rapid speeds, the next step is usually taking a speed reading test.

A general test will usually involve story being viewed on the screen. The speed reading test version of this would be to answer questions afterwards relating to what was read with the aim of proving that you understand and remember the information.

Taking a speed reading test is the only way to determine if you are using the techniques effectively. Without testing, you could be merely “skimming” information with little or no ability to comprehend or recall what was seen. True speed reading also involves committing the words to memory and this is best learned using speed reading software that offers a range of exercises and speed reading tests for regular use as shown in Fig (6) and Fig (7).

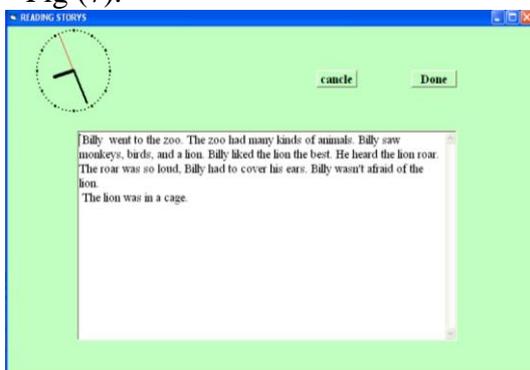


Fig (6): Memory speed training



Fig (7): Memory speed training

Also there are different games that are provided to improve eyeQ speed and memory enhancement Fig(8) and Fig (9).



Fig (8): Memory speed training

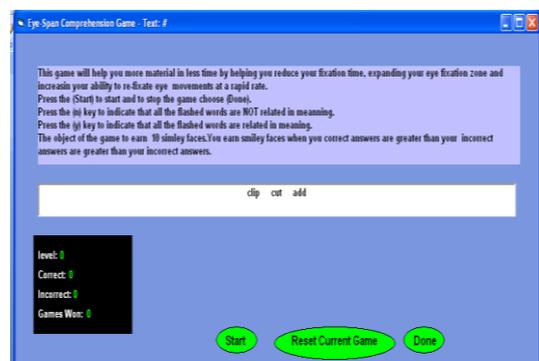


Fig (9): Memory speed training

## 6. Results

Speed reading programs are available through courses, both in person or software based, and manuals. While the average adult reading rate is 250 words per minute with 70% comprehension, speed reading programs typically claim that improvements to 700 words per minute or more while maintaining or improving comprehension are possible. Speed reading does absolutely no good if the material is not remembered. That is one thing all software and instructional methods have in common. The goal was to read as quickly as possible keeping a good comprehension rate.

The increase in reading speed and comprehension were measured for the which may give a general idea of the designed program efficiency

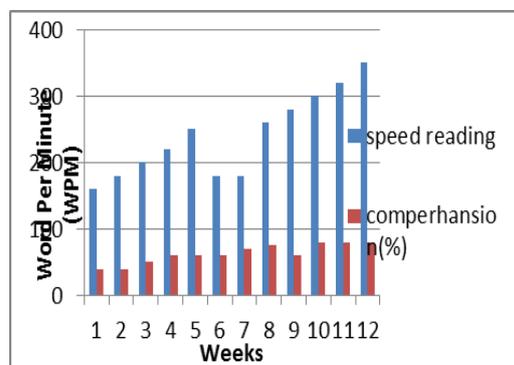


Fig (10): Speed reading results

## 7. Conclusion

When you start speed-reading it is wise to benchmark your current reading speed. In this way you can tell whether your practice is paying off and you can impress your friends and family when you report that you can now read say 700 words per minute.

This paper presents a wide variety of methods to improve reading speed, eyeQ and memory enhancement. The designed program was tested on different persons with various levels of educations and ages and it shows an increasing in their speed reading and memory comprehension.

This program may used in the future in schools to improve students speed reading and memory enhancements

persons under experiment Fig(10),

and hence increase the effectiveness of studying methods, also may be modified to deal with students with special needs.

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## تحسين الذاكرة الصورية وتسريع القراءة بمساعدة الكمبيوتر

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### الخلاصة:

يهدف هذا العمل لتصميم واختبار برنامج الكمبيوتر لتحسين عضلة العين وتحسين الذاكرة الصورية وتسريع القراءة لتصل الى معدل 150-250 كلمة بالدقيقة (MPW) مع قدرة العقل للمعالجة و قدرة العين لالتقاط الصور (MPW)5000. وتم اعتماد لغة الفيجوال بيسك 6 لتصميم هذا البرنامج. كما وتم اختبار كفاءة هذا البرنامج على 10 اشخاص بمستويات مختلفة من التعليم والعمر حيث اظهرت النتائج زيادة في سرعة القراءة بنسبة 25% خلال الشهر الاول من التدريب مع ملاحظة تحسن في الذاكرة وكذلك زيادة في القدرة على القراءة لمدة طويلة بدون الشعور بالتوتر او الملل، القراءة غير الخطية التي تزيد سرعة القراءة تم تحقيقها بعد الشهر الاول مع الامل للوصول الى الهدف وهو 3000 كلمة بالدقيقة بمعدل 3-5 سنوات من التدريب على البرنامج وهذا مايسمى بالذاكرة الصورية حيث ان اغلب معالجة البيانات التي تمت قراءتها في الجانب الايمن من الدماغ،العمر الصغير، والمستوى العالي من التعليم هي من أهم العوامل المؤثرة في النتائج.