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The Impact of Perceptual Skills Training on the EFL Reading Speed and Comprehension

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Abstract. The purpose of the research was to determine whether or not the modern perceptual technique of reading involving fast eye movements and rapid visual recognition would increase EFL Arab learners' reading speed, and consequently their reading comprehension.

Data for this research were collected from pre- and post-test scores obtained through reading a selected English passage of 695 words followed by a ten item true-false comprehension test.

The subjects involved in this study were sixty college English majors evenly distributed into control and the experimental groups. The experimental group was given rapid eye movement and word recognition exercises for two meetings weekly extended over a period of four weeks. The Statistical Package for Social Sciences (SPSS) was used to obtain descriptive statistics. The means of gross and effective rates of reading were computed. The t-test was then applied to determine whether the differences between the reading efficiency scores of the experimental and the control groups in pre- and post-tests were statistically significant.

The analysis revealed that the experimental group had significantly scored higher both in gross and effective reading rates than the control group. Both the gross reading and effective reading rates of the experimental group had increased by 20.95 and 37.12 w.p.m. (words per minute) respectively, while the control group had shown no significant progress on both variables. As a conclusion, the experimental subjects were able to read faster and comprehend better because of the fast perceptual eye-movement and rapid visual recognition exercises.

The recommendations included emphasizing and providing training in bottom-up skills in EFL reading curriculum and instruction and exposing the EFL teachers and learners to the eye-movement method and rapid visual recognition exercises in order to improve the reading speed and comprehension. Another recommendation made by the researcher was that applied linguists should place equal emphasis, and exercise balance in their research on bottom-up and top-down processing skills in reading.

Introduction

Statement of the Problem

The Arabic script is read and written from right to left across a line of print. Hence, Arabs are used to moving their eyes accordingly while reading an Arabic text. They are not trained to move their eyes, in contrast, from left to right while reading the Latin script, i.e., in this case the English alphabet. This habitual style of reading constitutes a great problem in developing effective perceptual skill of reading English and in increasing reading speed in English.(1)

High school graduates are admitted to the College of Education in Medina, Saudi Arabia, on the basis of several standards. One of these standards is to satisfactorily pass a formal interview conducted by the staff members of the relevant department. During these interviews the researcher often observed that applicants to the Foreign Languages Department read English text word for word and make many unnecessary stops whenever they are asked to read. They fail to read phrase by phrase or catch chunks of words at each glance. It appears that they are not used to move their eyes rapidly across the line from left to right and to make less fixations per line. In other words their eye span in case of English reading is too short. However, there are individual differences, though in general the poor EFL Arab readers tend to make comparatively more eye fixations than good readers.

Moreover, most of EFL reading literature nearly neglects the problems of perceptual skills, i.e., eye movement and word/phrase recognition. Grabe(2) suggests that research in the study field of bottom-up skills "should become major pedagogical research concern". Eskey(3) maintains that EFL readers are badly in need of the bottom-up (decoding) strategies as they do in top-down (prediction). Eskey concludes his discussion with the statement "I think the rapid and accurate decoding of language is important to any kind of reading and especially important to second [foreign] language reading."(4)

(1) C. Hoffaner. *Speed Reading: Study Skills*, 141 (1977). Unpublished.
(2) W. Grabe "Reassessing the Term "Interactive"", In P. Carrel, J. Devine, and D. Eskey, (Eds), *Interactive Approaches to Second Language Reading* (New York: Cambridge University Press, 1988, pp. 56-70.
(3) D.E. Eskey "Holding in the Bottom: An Interactive Approach to the Language Problems of Second Language Readers" in P. Carrel, J. Devine and D. Eskey (eds.) *Interactive Approaches to Second Language Reading* (New York: Cambridge University Press, 1988), pp. 93-100.
(4) D.E. Eskey, and W. Grabe "Interactive Models for Second Language Reading: Perspectives on Instruction" in P. Carrel, J. Devine and D. Eskey (eds.), *Interactive Approaches to Second Language Reading* (New York: Cambridge University Press, 1986), pp. 67-80.

In response to these great demands for empirical research in the domain of bottom-up processing strategies, the researcher decided to explore this relatively neglected study area aiming at helping EFL Arab readers in terms of reading rate and reading comprehension.(5)

Purpose of the Study

The purpose of this research was to determine whether or not a new perceptual method would increase EFL Arab learners' reading speed and consequently reading comprehension. In harmony with the above stated purpose the following question was posed: Can visual movement method and rapid visual recognition promote reading rate for EFL Arab readers?

The null hypotheses of the study stated that:

1. There will be no statistically significant difference between the control and the experimental groups regarding gross rate of reading English in the pre-test.

2. There will be no statistically significant difference between the control and the experimental groups regarding the effective rate of reading English in the pre-test.

3. There will be no statistically significant difference between the control and the experimental groups with respect to gross rate of reading English in the post-test.

4. There will be no statistically significant difference between the control and the experimental groups with respect to effective rate of reading English in the post-test.

Research Method

Subjects

The population from which the subjects were randomly drawn comprised male graduate students of public secondary schools in Medina, Saudi Arabia. Subjects ranged in age from 18-21 with a mean age of 18.13 (s.d. = 0.50). All began language learning at grade level 7, with an exposure of a six year EFL instruction. The grade

(5) P.L. Carrell "Three Components of Background Knowledge in Reading Comprehension" *Language Learning*, 33 (1983), 183-208.

point mean of the subjects in English at grade level 12 was 77.3 (s.d. = 8.9). None of the samples had studied EFL abroad or visited an English speaking country (as determined by informal interview). They had almost the same academic background.(6) The subjects o this research consisted of 60 students randomly selected and divided into two identical groups. This was accomplished by using the table of random numbers. Each group included 30 male freshmen recently enrolled in the Foreign Languages Department at the College of Education. The subjects were homogeneous in terms of language background and grade level. They all were native speakers of Arabic and had recently graduated from high schools in Medina.

Reading Material

The selection of reading material was based on a variety of factors. These factors included: (1) types of reading material, (2) the purpose of reading, (3) familiarity with the reading topic,(7) and (4) the vocabulary range of the subjects.(8)

The reading passage was selected from the *Reader's Digest.* It was a prose essay dealing with seven words of typical advice offered to a young person living in the year 2000 (see appendix 1). Each advice was made solely of a single word. The entire reading passage consisted of 695 English words. The degree of familiarity of the topic and level of vocabulary range was judged. The reading passage was read by eight senior students at the Foreign Languages Department and their opinions with respect to its familiarity to freshman students were sought. Content analysis of their opinions gave support and credit to the selection of the reading material. Moreover, the same essay was handed over by the researcher to four colleagues at the Foreign Languages Department and the Curriculum and Instruction Department (English Section) at the College of Education, with a request to judge its appropriateness to students' ability in terms of vocabulary range and interest. They also pointed out that the reading passage suited the students' vocabulary range. One of the colleagues remarked that "the proposed selected passage is extremely suitable for the freshman students of our department, in terms of its concept, level of interest, and vocabulary range".

(6) F. Stoller "Reading Lab: Developing Low Level Reading Skills" in F. Dubin, D. Eskey, and W. Grabe, (eds.), *Teaching Second Language Reading for Academic Purposes* (Mass: Addison-Wesley, 1989), pp. 51-76.

(7) G.A. Miller, J.S. Bruner, and L. Postman, "Familiarity of Letter Sequences and Tachistoscopic Identification" *Journal of General Psychology*, 50 (1954), 129-39.

(8) M. McKeown, I. Beck, R. Omanson and M. Pole. "Some Effects of the Nature and Frequency of Vocabulary Instruction on the Knowledge and Use of Words," *Reading Research Quarterly*, 20 (1985), 522-35.

Instrument

Sixteen exercises were developed to improve accurate and rapid visual perception[9]. These exercises were divided into three sets: eye-movement, word-recognition and phrase identification. In eye movement exercises[10] (see appendix 2) students were asked to move their eyes from left to right across each line. They should make a quick stop glancing briefly at each bar on each line. In word recognition exercises (see appendix 3), students were asked to move their eyes either across the line or down the column, circling the key word every time it appeared on the line or in the column, respectively. Timing and numbering key words circled by students were required in each exercise. During this process students were greatly encouraged to work as rapidly as they could.[11] In phrase identification exercises (see appendix 4) students were drilled in such exercises which wer receive any such training. The post-test was administered to both groups to determine the mean reading speed of all the subjects, i.e., gross rate, and the percentage of correct answers of the comprehension questions, i.e., effective rate. The difference between the pre-test and post-test means was computed. Finally, the t-test was applied to determine whether these differences in the means were statistically significant.

Procedure

The subjects were assigned randomly to two groups, i.e., experimental and control. A pretest was administered to measure the means of gross and effective rates of both the experimental and the control groups.

In the pretest, the subjects were asked to begin to read the selected passage as rapidly as they could when the researcher said "read". It was presumed that 5 minutes were the minimum time that the subjects would need to finish the passage. So, after five minutes the researcher wrote 5:00 on the board. Then every 10 seconds, he went on adding 10 seconds 5:10, 5:20, 5:30 and so, erasing the old number every time. Immediately after finishing the entire passage, each student was asked to mark down the time he took to read on the space provided.

(9) J.F. Mackworth "Some Models of the Reading Process: Learners and Skill Readers," *Reading Research Quarterly*, 7 (1972), 701-33.

(10) M.A. Just, and P.D. Carpenter "A Theory of Reading: from Eye Fixations to Comprehension," *Psychological Review*, 85 (1980), 329-54.

(11) K. Goodman "The Reading Process," in P. Carrel, J. Devine, and D. Eskey (eds.), *Interactive Approaches to Second Language Reading* (New York: Cambridge University Press, 1988), pp. 11-21.

Afterwards, the students were asked to answer the ten true-false type comprehension questions without looking back at the passage. The researcher disregarded the time taken in answering the questions. Then the mean of words read per minute (W.P.M.) was computed for each group. The percentage of the correct answers was also computed. Then the effective rate was calculated by the folowing formula:

Effective Rate (ER) = Gross Rate (GR) × Comprehension Percentage (CP).

All independent variables and conditions were controlled. Independent variables included factors related to the subjects, and the reading passage. Factors related to the subjects such as age, language background, grade level, final grade in EFL instruction at the 12th grade level, and amount of exposure to EFL instruction were controlled. Factors related to the reading passage, such as time, seating arrangement, environment, room temperature, etc., were also controlled and adjusted.

Subjects in the experimental group were then exposed to eye-movement method and rapid visual recognition exercises for two meetings of 40 minutes weekly for a total period of 4 weeks. The control group, however, did not receive any such training. The post-test was administered to both groups to determine the mean reading speed of all the subjects, i.e., gross rate, and the percentage of correct answers of the comprehension questions, i.e., effective rate. The difference between the pre-test and post-test means was computed. Finally, the t-test was applied to determine whether these differences in the means were statistically significant.

Statistical Analysis

Descriptive statistics were obtained by applying the frequency program of the Statistical Package for Social Sciences (SPSS) to the research variables.

T-test was used to test the null hypotheses concerning the differences in the means between the experimental and the control groups at the .05 level of significance.

Results of the Study

Null Hypothesis 1

There will be no statistically significant difference between the control and the experimental groups with regard to gross rate of reading English in the pre-test.

Results of Hypothesis 1

The data in Table 1 show that the t. value is insignificant at the 0.5 level for 58 df. This indicates that there was no statistically significant difference between the two groups with respect to gross rate in the pre-test. Therefore, the null hypothesis was supported.

The gross rate means of the control and the experimental groups were 94.03 w.p.m. (words per minute) (s.d. 26.819) and 94.82 w.p.m. (s.d. 31.895) respectively. The two groups showed no significant difference and they were almost identical in terms of gross rate in the pre-test.

Null Hypothesis 2

There will be no statistically significant difference between the control and the experimental groups with regard to effective rate of reading English in the pre-test.

Results of Hypothesis 2

Data in Table 1 indicate the t. value at the .05 level for 58 df. They show no significant difference between the two groups in relation to effective rate in the pre-test. Thus the null hypothesis was supported.

The effective rate means of control and experimental groups were 69.73 w.p.m. (s.d. 23.015) and 70.72 w.p.m. (s.d. 29.391) respectively. The means showed no signficant difference regarding the effective rate. The two groups were almost identical in effective reading rate.

Table 1. Gross and Effective Rates for Control and Experimental Groups in Pre-test.

Group	Gross Rate			Effective Rate		
	M	S.d.	t.value	M	S.d.	t. value
Control	94.03	26.819	0.102	69.73	23.015	0.143
Experimental	94.82	31.895		70.72	29.391	

P 0.05

Null Hypothesis 3

There will be no statistically significant difference between the control and the experimental groups with respect to gross rate of reading English in the post-test.

Results of Hypothesis 3

Table 2 indicates that the t. value is significant at the .05 level for 58 df. The two groups showed statistically significant difference with regard to gross rate in the post-test. Thus, the null hypothesis was rejected.

Evidently, prior to exposure to the new teaching method the mean of the reading speed for the experimental group was 94.82 w.p.m. (s.d. 31.895) in the pre-test. This gross rate mean had substantially incresed to 115.77 w.p.m. (s.d. 24.803) as a result of a four-weeks instructional program. In other words, EFL readers had shown an increase of 20.95 w.p.m. in their reading rate on the average.They had begun to read more rapidly.

Null Hypothesis 4

There will be no statistically significant difference between the control and the experimental groups with respect to effective rate of reading English in the post-test.

Results of Hypothesis 4

The data in Table 2 show that the t. value is significant as the .05 level for 58 df. The two groups had statistically significant difference in terms of the effective reading rate in the post-test. Hence, the null hypothesis was not accepted.

The mean of the effective rate for the experimental group was 70.72 w.p.m. (s.d. 29.391) prior to the new experience. However, as a result of the new teaching method this mean of the effective rate had increased to 107.17 w.p.m. (s.d. 24.463) indicating a significant difference between the two groups. Students' reading comprehension had reasonably improved.

Briefly, the results of hypotheses 3 and 4 showed that there was statistically significant difference between the two groups in relation to gross and effective rates in the post-test.

Table 2. Gross and Effective Rates for Control and Experimental Groups in Post-test.

Group	Gross Rate			Effective Rate		
	M	S.d.	t.value	M	S.d.	t. value
Control	91.20	21.149	*3.734	69.13	18.280	*6.707
Experimental	115.77	24.803		107.17	24.463	

*P 0.05

Conclusion

Based on these results, the answer to the research question turned out to be positive. Results of post-test revealed that the experimental group had scored significantly higher in gross and effective rates than the control group. Both the gross reading and the effective reading rates of the experimental group had increased by 20.95 and 37.12 w.p.m. respectively while the control group had shown no progress on both variables.

Experimental subjects were able to read faster and comprehend better as a result of fast perceptual movements and rapid visual recognition. These results suggested that: (1) accurate and rapid visual perception of word/phrase could be improved effectively at all, even advanced levels, and (2) eye fixations and regressions could be somewhat eliminated.

These results were in line with the findings/premises of Stanovich. Stanovich,[12] for example, claims that "reading rate is more dependent on the speed with which a reader can recognize words and construct a representation than on the ability to use predictions."

In line with the above discussion, it was concluded that the slow reading rate of EFL Arab learners could be improved by consistent training in eye-movment from left to right and in bottom-up recognition skills.

Recommendations

EFL Arab readers require special practice in bottom-up skills. Techniques in eye-movement from left to right and word/phrase identification should be

(12) K.E. Tanovich "Toward an Interactive Compensatory Model of Individual Differences in the Development of Reading Fluency," *Reading Research Quarterly*, 16 (1980), 32-71.

emphasized in the EFL reading program. EFL Arab learners should be trained to develop the new habit of moving their eyes from left to right rapidly.

In addition, EFL Arab readers should be drilled in rapid visual recognition skills. The recognition of word/phrase minimizes the number of regressions made by the EFL slow readers. The development of the new eye-movement skills and rapid visual recognition habit helps EFL reading speed and comprehension.

EFL experts in reading should supply plenty of drills in eye-movement and word/phrase recognition as means to increase reading speed and comprehension ability. Indeed, EFL Arab reading curriculum almost neglects eye-movement techniques in its content. Moreover, it rarely includes such exercises to help improve accurate and rapid phrase recognition.

EFL teachers should be fully aware of the importance of bottom-up skills in increasing the students' reading rate and comprehension skill. Exercises in eye-movement and word/phrase recognition should be used inside and outside the classroom as an essential part of the reading assignment.

Arab EFL reading learners must adjust to left-to-right eye movements and employ word/phrase recognition strategies in order to improve their reading speed and consequently their reading comprehension.

Applied linguists should place equal emphasis on and exercise balance in their reading research and investigation on bottom-up processing skills and top-down processing skills. De-emphasis of bottom-up strategies, as in EFL reading literature, projects a negative attitude towards speed reading on the part of the EFL reading curriculum experts and EFL reading teachers at all grade levels.

Appendix 1

Seven Words to Live By*

11 SUPPOSE that you could offer one word of advice to a
21 young person living in the year 2000. One word! What
24 would it be?

*Adapted from the February 1972 Reader's Digest.

34 Over the past few years I have been asking this
43 question of many friends, and the answers have been
49 remarkably consistent. Three words are almost
56 universally at the top of the list.

64 The most frequently mentioned word is "Live." It
75 is a sound choice for the First Maxim. If you have
83 in mind Schweitzer's "reverence for life," and a
92 biologist's sense of the complexity and wonder of the
101 life process, you will understand the breadth and depth
104 of the word.

113 In Thornton Wilder's play, *Our Town,* a young woman
123 dies and discovers that she has the opportunity to live
134 one day of her life over again. She chooses her twelfth
143 birthday. When the day begins, her first reaction is
153 an intense desire to savor every moment. "I can't look
162 at everything hard enough," she says. Then, to her
173 sorrow, she sees that the members of her family are not
180 experiencing life with any intensity. In desperation
190 she says to her mother, "Let's look at one another!"
200 And later: "Oh, Earth, you're too wonderful for anybody
209 to realize you! Do any human beings ever realize life
213 while they live it?"

222 Most people waste life. The First Maxim says, "Live,
226 be aware, experience, grow."

235 The second one-word maxim mentioned by almost every-
242 one is "Love." People attach many different meanings
253 to the word, and the Second Maxim means all kinds of
259 love—fraternal, sexual, religious, humanistic. But it
268 means above all the capacity to break through the
278 barriers that cut one off from others and from values
288 beyond the claims of self—to live and receive, to commit
297 oneself, not childishly but in mature escape from the
307 prison of self-absorption. It can happen at 18 or 80.

317 The third Maxim is "Learn." We brought up to think
327 that learning is a "duty," and all too often school
338 convinces us that it is a very dull duty. To clear
348 your mind of such nonsense, watch a badly learning to
356 walk. He tries, fails, tries again, improves, bumps
366 his nose, cries, laughs and keeps on. He isn't being
375 dutiful. He's simply doing what he was designed to
376 do—learn.

385 Many people who suggested the Third maxim were also
396 saying: Learn who you are, learn to be at peace with
405 yourself, learn the effect you have on others, open
415 your mind to new experience. Learn! It's fun. It hurts.
425 It changes us. And it keeps us "alive." When Oliver
433 Wendell Holmes, Jr.—one of the great Supreme Court
443 justices—was 92, a friend came upon him reading in his
452 library and asked, "What are you doing?" Justice Holmes
458 smiled and said, "Improving my mind."

467 Live. Love. Learn. Any reader who checks with friends
476 will find considerable agreement on these words. But ask
486 for another choice and you will make a curious discovery:
496 though most people arrive at the same first three maxims,
505 agreement breaks down completely on the fourth. A devout
514 young friend of mine says, "Believe! A scientist says,
521 "Seek!" A distinguished physician says, "Produce! I
524 found no consensus.

535 Then a couple of years ago I was scheduled to deliver
542 an after-dinner speech to the American Philosophical
550 Society, one of the most distinguished scholarly groups
561 in the nation. I decided to put the question to the
571 members and their wives. Where would one find a group
582 of men and women better fitted to assist in the search?

591 The most popular choice of this group was "Think,"
599 although some of them preferred variations such as
607 "Understand" or "Know." The next choice was "Give,"
616 and related words such as "Help," "Serve" and "Share."
625 Then came "Laugh," along with "Smile," "Play" and "Enjoy."

635 Many people have asked what my own preference for the
645 Fourth Maxim would be. My choice is "Try," It's a homely
654 word, and "Aspire," meaning "to try for something better,"
664 might seem more adequate. But it's hard to know that
675 what you are striving for will actually turn out to be
680 better. I'll stay with "Try."

689 Live, love, learn, think, give, laugh, try. Can you
695 pack better advice into seven words?

Your reading time:.....

Instruction: Read the following statements carefully and indicate whether they are true or false by writing "T" for true and "F" for false in the line given to the left of the statements.

_____ 1. Only one word of advice you could offer to a young person living in the year 2000.

_____ 2. The first one-word maxim mentioned is "live."

_____ 3. The second maxim means all kinds of love—sexual, religious, humanistic, but not fraternal.

_____ 4. The third one-word maxim mentioned is "study."

_____ 5. The author claims that to learn is to be at peace with yourself, to recognize the effect you have on other and to open your mind to new experience.

_____ 6. Justice Holmes was too old to improve his mind.

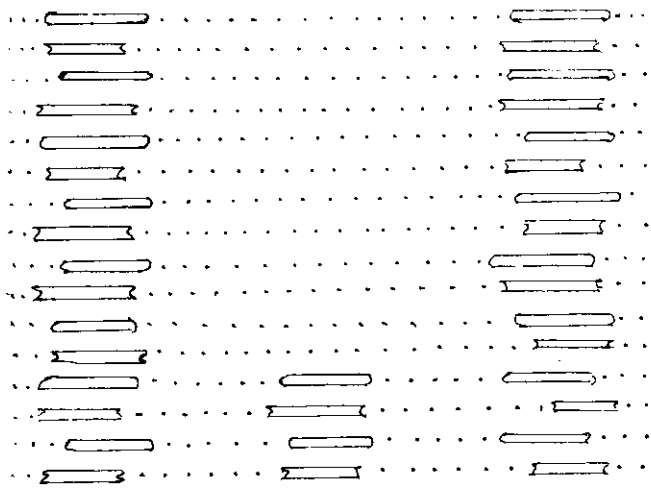
_____ 7. There is considerable agreement on the fourth maxim.

_____ 8. The fourth one-word maxim mentioned is "believe."

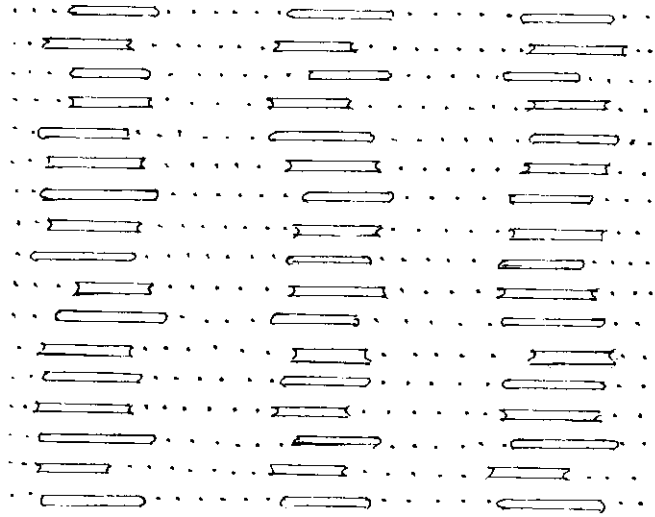
_____ 9. Some variations of the fourth maxim include "understand" or "know".

_____10. The fifth, sixth and seventh one-word maxims are "give", "laugh", "try" respectively.

Sample of Eye-Movement Exercises*



*Adapted in part from Gordon Wainwright. *How to Read for Speed and Comprehension.* Prentice-Hall, Inc. 1977.



Appendix 3

Sample of word Recognition Exercises

Type 1

Read as rapidly as you can and circle the word/s which is/are identical to the key word at the left of the vertical line.

man	man	men	win	men	ban	man
pen	pen	pean	pean	pin	pean	pen
read	red	red	read	trade	read	read
sea	sea	see	sew	sea	sea	see
clear	clare	care	clean	clean	clear	clear
seat	sat	seat	seem	seen	seat	sat
work	work	work	word	world	war	word
bat	bat	bit	batc	bate	bat	bat
meet	meat	meat	meet	meet	meat	meet
sign	sign	sight	sign	sigh	site	sight

Type 2

Focus your eyes on the center line and read down the column as fast as you can.

cloudy	sky	final	examination
traffic	light	good	morning
legible	writing	new	year
black	shoes	blunt	knife
television	program	portable	television
long	street	nasty	smell
tall	building	pregnant	woman
flight	schedule	wonderful	topic
efficient	project	expensive	store
language	teacher	wedding	day
thick	carpet	engagement	ring
fancy	words	fresh	fruit
gold	watch	row	fish
fast	horse	large	kitchen
Arabic	numeral	respected	colleague

Appendix 4

Sample of Phrase Identification Exercises

Reas across the line as rapidly as you can. Cross (Circle) all the phrases which are identical to the key phrase at the left of the vertical line.

almost always	almost always almost always	most always all ways
unclear statement	unclear statement clear statement	stated clearly unclear statement
move in	move in moveable inn	move on move into
write well	right well right wall	write well write well
long story	long storey long story	long store long storey
painful tooth	painful tooth painful teeth	painful foot painful tooth

Sample of Phrase Identification Exercises

Reas across the line as rapidly as you can. Cross (Circle) all the phrases which are identical to the key phrase at the left of the vertical line.

class size	glass size	class size
	classes size	glass size
traffic light	terrefic light	traffic sight
	traffic light	traffic sight
black shoes	black shoe	black shoe
	black showroom	black shoes
television program	television program	television progress
	television progress	television program

تأثير التدريبات البصرية على الفهم وسرعة قراءة اللغة الإنجليزية كلغة أجنبية

علي حمزة أبو غرارة

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ملخص البحث. يهدف البحث إلى التعرف من أن استخدام الأسلوب البصري الحديث في القراءة والمتضمن حركات العين السريعة والإداري البصري السريع يزيد من سرعة قراءة الطلاب العرب المتعلمين للغة الإنجليزية كلغة أجنبية وأن تلك الأساليب بالتالي تساعد على فهمهم القراءة.

ولقد جمعت المعلومات من نتائج الامتحانات القبلية والبعدية والتي تم الحصول عليها من قراءة قطعة مختارة باللغة الإنجليزية مكونة من ٦٩٥ كلمة متبوعة بامتحان فهم يشتمل على عشرة أسئلة (صح أو خطأ).

وتتكون أفراد عينة البحث من ٦٠ طالبًا جامعيًّا موزعين عشوائيًّا إلى مجموعتين ضابطة وتجريبية. ولقد أعطيت المجموعة التجريبية تدريبات على سرعة تحرك العين والقدرة على إدراك الكلمة لمدة لقاءين أسبوعيًّا وعلى مدار أربعة أسابيع. ولقد استخدم SPSS للحصول على الإحصاء الوصفي لهذه الدراسة ومن ثم تم تطبيق امتحان «ت» للتأكد من الاختلاف بين المجموعتين في درجات القراءة في الامتحانين القبلي والبعدي ذات دلالة إحصائية.

ولقد تبين من خلال التحليل الإحصائي أن المجموعة التجريبية حققت درجات أعلى بصورة لها دلالتها في نسبة القراءة الناجعة والكلية عن المجموعة الضابطة فكانت تلك الزيادة — التي لصالح المجموعة التجريبية — بمعدل ٢٠,٩٥ وكذلك ٣٧,١٢ كلمة في الدقيقة الواحدة لكل من النسب الناجعة والنسب الكلية في القراءة على التوالي. ويمكن تلخيص نتيجة هذا البحث بأن أفراد العينة للمجموعة التجريبية كانت قادرة على القراءة بصورة أسرع وعلى الفهم بطريقة أفضل نتيجة للتدريب على سرعة حركة العين من اليسار إلى اليمين وعلى الإدراك البصري.

وتشمل التوصيات على التركيز وعلى تزويد المناهج وتعليم اللغة الإنجليزية كلغة أجنبية بالتدريبات على تلك المهارات وتعريف المدرسين والطلاب بتلك التمارين المتعلقة بطرق وفنيات حركة العين والإدراك البصري كما توصي هذه الدراسة بضرورة إعطاء اهتمام متساو وتدريبات متوازية من قبل علماء اللغات التطبيقية في بحوثهم لكل من مهارات الإدراك، ومهارات السياق في القراءة.