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A Meta-study of Extensive English Reading Researches

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This paper examines the role of extensive reading in foreign language learning classrooms. The effects of extensive reading are shown both positive and negative as in Krashen (1999) and Spada (1997), particularly researches done in classroom setting. Extensive reading is hard to implement in foreign language classrooms due to the stringent school curricula despite its benefits in cognitive and affective domain of learners. This study searched 21 papers from research database on extensive reading researches in a classroom setting and synthesized 55 cognitive effects and 11 affective effects from these papers under investigation in a manner of quantifying their means and standard deviations to derive generalizations. Research synthesis in this manner has secured its own status of scientific investigation by providing secondary researchers with replicable methods that produce verifiable findings. The syntheses of researches show that extensive reading is effective in both literacy skills and other language skills such as listening and writing. It also shows positive effects across different age groups, but the effect sizes are different in that elementary and adults gained more positive effects than middle and high school students.

[extensive reading/meta-study/reading effects]

Ⅰ. INTRODUCTION

Language learning requires both exposure and use of the target language. However, in school-based language learning, learners of English do not have sufficient opportunities for both English use and exposure. The small amount of exposure and use of English is misdirected in analyzing the functions and text through intensive listening and reading. The school curriculum needs to be compensated with extensive listening and reading program to increase the use and exposure of English.

To this end, this paper attempts to synthesize the effects of school-based extensive reading programs. Extensive Reading (ER) has been acknowledged to be instrumental in learning a target language because of its large amount of language input in a relatively low stress environment where learners can enjoy reading easy and fun books slightly less than their reading proficiency so called i-1 level of reading materials. In the process learners become more fluent in the target language they're learning, and their literacy skills develop in terms of their reading speed and comprehension. ER has been generally recognized as a self-paced and self-directed activity without teacher's intervention. However, reading in a foreign language needs students to get across the threshold level of the language, and teachers play important roles in directing and managing ER programs to scaffold students over the threshold level of foreign languages.

The current mata-study looks into researches based on the classrooms where teachers ran ER programs for certain period of time, and the papers report the effects of the program in a quantifiable way as research outputs to be analyzed for the current meta-analysis. The scope of ER programs includes different age groups from elementary school students to adults, and it covers ER programs in foreign language environment. This paper synthesizes the research results of the ER programs as whole and analyzes for the cognitive and affective effects, different age groups, and different language skills and components separately.

II. THEORETICAL BACKGROUND

Theoretical background covers discussions on research synthesis and extensive reading. The focus dwells on the justification of quantified research synthesis as a scientific investigation for research synthesis while the attention is paid to discussions of differences between intensive reading and extensive reading, and their compensatory strengths.

1. Research Synthesis

Mark Twain in his autobiography said that "the thirteenth stroke of a clock is not only false of itself but also casts grave doubts on the credibility of preceding twelve." This statement captures research experiences in applied linguistics. Critical issues in applied linguistics such as explicit vs. implicit grammar instruction, deductive vs. inductive instruction, meaning vs. form-focused instruction and intensive vs. extensive reading are often confronted with twelve mixed results in their own rights followed by a thirteenth contradicting research which casts serious doubts on the previous researches. Creating

another but similar research design to resolve these contradictory researches might end up being another thirteenth stroke adding more confusion and disheartening result. Instead, a synthesis of previously known facts and analysis is made to resolve the contradiction by carefully looking at what's already known to us following Light and Pillemer (1984).

Recently research synthesis has been increasingly acknowledged as its own right of scientific investigation, providing secondary researchers with replicable methods that produce verifiable findings (Norris & Ortega, 2000; Cooper, 1998; Cooper & Hedges, 1994a; Light & Pillemer, 1984). This method enables researchers to analyze accumulated knowledge of applied linguistics. Such cumulative secondary work has generally adopted with a narrative or a vote-counting approach to researcher review (Light & Pillemer, 1984), each of which has serious limitations as a means for accumulating and synthesizing scientific knowledge. A narrative approach looks into papers and interprets the results without the consideration of generalizing research results. Vote-counting approach generalizes the research results without giving specific considerations of each research statistics.

Both narrative and vote-counting reviews are limited in that they provide no information about the size of an effect, the strength of a relationship, or the importance of a finding observed within a group of studies. Light and Pillemer (1984) note that "even if every one of 30 studies in a review report findings that are statistically significant, a vote count does not tell us whether they are large enough to matter in practice"(p. 75). Finally, neither procedure relates anything about the statistical trustworthiness of an overall finding in terms of the standard error associated with observations.

Problems of narrative reviews are that they do not provide the most accurate picture of the state of accumulated knowledge found by primary researches. One problem of such reviews is incomplete description and recovery of relevant primary researches. Thus, different reviews of the same question may draw contradictory conclusions about the state of findings, for example, conclusions drawn by Krashen (1999), versus those in Spada (1997) caused by inconsistent sampling of primary studies. As Light and Pillemer (1984) have noted, "the personal beliefs of a reviewer can play a role in resolving disparate findings" (p. 5). Thus, two researchers may interpret the same study findings in very different ways because they are using different evaluative criteria. Another prevalent problem in narrative reviews arises when reviewers base their conclusions on the conclusions drawn by primary researchers, which, as Long (1983) among others has demonstrated, may have little to do with what the research data actually showed.

On the other hand, vote-counting reviews (Light & Smith, 1971; Bushman, 1994; Norris & Ortega, 2000) are called as such because they identify studies for a particular

research question and count these primary studies in the form of statistically significant or non-significant findings just like vote-counting either supporting (statistically significant in the hypothesized direction), not supporting (not statistically significant), or contradicting (statistically significant in the opposite direction) a particular hypothesized answer to the question. Based on a tally of the votes, conclusions are drawn about what the evidence seems to suggest. Although derived directly from research data, the vote-counting review may nevertheless result in incorrect interpretations of what the evidence actually shows. In other words, the simple conclusion of “statistically significant” or “not statistically significant” indicates otherwise from the actual observed effect or relationship due to the fact that statistical significance is dependent on the sample sizes of primary studies.

Due to the limitations of both narrative and vote-counting approaches detailed above, meta-analysis is established in applied linguistics to synthesize research results for both reliable generalization and description. This paper will adopt the meta-analytical approach for the synthesis of extensive reading researches.

2. Extensive Reading

Extensive reading is an approach to language learning, including foreign language learning, by the means of a large amount of reading. The learners’ view and review of unknown words in specific context will allow the learner to infer the word's meaning, and thus to learn unknown words. While the mechanism is commonly accepted as true, its importance in language learning is disputed (Cobb, 2007). Extensive reading is contrasted with intensive reading, which is slow, careful reading of a small amount of difficult text – it is when one is "focused on the language rather than the text". Extensive and intensive readings are two approaches to language learning and instruction, and may be used concurrently; intensive reading is however the more common approach, and often the only one used in foreign language classrooms. In broad terms, intensive reading may be described as the practice of analyzing the text for the purpose of developing a particular reading skills and the close linguistic study of text.

On the other hand extensive reading can be defined as reading a large quantity of text for fun and information while reading fluency is developed. It is important to note that a number of researchers have warned of the possible negative consequences of intensive reading on reading speeds (Light 1970; Hamp-Lyons 1983; Cooper 1984; Kerecuk & Velloso Ribeiro 1984; Hino 1988; Brusch 1991). On extensive reading, however, it was first claimed by Light (1970) that such reading would not only raise reading speeds, but importantly would reduce the negative affective consequences of slow, text-based, intensive approaches. Williams (1984) has argued for extensive reading as a way to

develop adequate general reading speed, and Hill (1986) calls for the provision of class sets of graded readers as a means to the same end.

In foreign language classrooms, the use of graded readers is widely popular due to the accessibility to the graded language being used in the books. The employment of graded readers dates back to the time of Michael West in the 1950s where he mentioned about general service list. It was in the 1960s that interest in reading speed gained momentum through the writings of Fry (1963) and De Leeuw and De Leeuw (1965). Fry claimed that good readers achieve a speed of 350 words per minute, fair readers 250 words, and slow readers reach 150 words per minute. De Leeuw cited 230-250 words per minute as an average initial speed for the general public. These early insights led to growth in the development of speed reading courses, and to the belief that individuals requiring to read faster could be trained to do so through the use of paper-based techniques, and also by way of technological aids such as metronomes, and projectors or reading machines. Maddox (1963, p. 85) criticized the use of such machines claiming that mechanical devices are "in no way superior to the method of timed practice", and Bright and McGregor (1970, p. 96) wrote in similar vein that it is "the gimmick that stimulates interest and not the practice itself". Data-based evaluations of reading speed courses were offered by Hill (1981), and Richard (1982). Hill examined a course in 'rapid' or 'effective' reading with advanced students at the University of Leuven in Belgium. Using the program developed by De Leeuw and De Leeuw (1965), he showed that his advanced students could achieve an average increase in their reading speeds of 57% over a three year period. In terms of the speed categories used in the course, an average student therefore progressed from the 'slow' band (200 words per minute) through to the 'medium fast' category (314 wpm). Some of his subjects reached speeds of 600 words per minute or better leading him to claim that "students and others who read extensively for professional purposes should aim to cover routine material at speeds between 300 and 600 words per minute" (Hill, 1981, p. 271). Richard (1982) compared the reading speeds of students using traditional paper exercises with those using a reading machine (projector), and found that speeds in the latter group increased significantly more than in the former ($p < .05$).

In researches on speed reading, there’re three areas of researches: The first area is to compare courses using traditional speed reading methodologies with programs emphasizing extensive reading. The second area is to examine extensive reading and intensive reading and compare their relative effectiveness in developing basic reading speed. The third area is the relationship between reading speed and reading comprehension. While it is generally argued that the two are closely related (Broughton et al, 1978; Champeau de Lopez, 1993), the precise nature of the link between them has been the focus of an on-going debate lasting more than half a century. They may be

completely independent, or correlated, or cause and effect. What is thought clear however, is that a very slow reader is more likely to read with little understanding, as his memory is taxed by the inability to retain information in sufficiently large chunks to progress through a text with adequate retention of the content in the message. Before he reaches the end of a page, or even of a sentence, he has forgotten the beginning. Champeau de Lopez (1993, pp. 50-51) makes the useful distinction between 'timed readings', in which learners read at their own pace and then calculate their speeds in words per minute, and 'paced readings' where the teacher controls the time allowed and taps on the desk to indicate times when a certain marked place in the text should be reached. In her study, carried out in Venezuela, she found that students increased their reading speeds on average from 120 to 170 words per minute (a 50% increase), after following a course based on a combination of timed and paced readings. However, she also noted a slight drop in comprehension over the same period, from 78% to 67%. This reminds us of the danger referred to earlier, of developing reading speed at the expense of comprehension (Berkoff 1979). Coady's advice (1979, p. 12) on this point appears salutary "..... comprehension is achieved by reading neither too fast nor too slow". In line with these warnings, Lai (1993), in a study carried out on students in Hong Kong secondary schools, found that although subjects' gains in reading speed were significant, gains in reading comprehension were not.

A more comprehensive review of studies in extensive reading will not be attempted in this paper, as such reviews can be found in Susser and Robb (1990) and Day and Bamford (1998). Numerous studies have measured reading comprehension, as these reviews indicate, but few of them have compared extensive reading with other classroom approaches to reading. Elley and Manghubai's (1983) book flood project remains by far the most convincing evidence of the value of reading books for pleasure and in quantity. Anderson, Wilson and Fielding's (1988) study on fifth graders also seems to confirm that gains in reading speed and comprehension appear to be most closely related to the quantity of reading. Growth in reading proficiency generally may be a function not only of reading interesting material for pleasure, but of doing so in quantity by reading a large number of books. As already indicated, few studies have actually related classroom reading methodology to the variables of reading speed and comprehension. One such study was Robb and Susser (1989). They compared extensive reading with a 'skills-building' approach and found that subjects in the former group made significantly greater gains in reading speeds and on some of their measures of reading comprehension. Measurements on 'getting the main idea' and 'making inferences' did not, however, reach significant levels. Both this study, and those reviewed above seem to suggest that gains in reading speed may be easier to accomplish than advances in reading comprehension, and therefore that the former objective should not be prioritized at the expense of the

latter, if we wish to serve the interests of foreign language learners in reading development and improvement.

Although the bifurcation of reading into intensive and extensive can be found in many teacher resource books for the teaching of English as a foreign language (Grellet, 1981; Nuttall, 1982; Lee, 2006; Song, 2006), reading behavior is overly simplified considering the student's developmental history of reading. The categorization needs to be extended to include, first, oral reading (Day, 1993), or reading aloud in class, where considerable focus is put on correct pronunciation of the text - and, second, sustained silent reading, where the focus is on the learner's understanding of the foreign language in support of or tandem with the study of an array of grammatical, lexical and phonological points. This creates a four-way methodological categorization of reading in a foreign language and shows that extensive and intensive reading is not in competition but for compensation as summarized in the table 1.

TABLE 1

Basic Classroom Approaches to Reading in a Foreign Language

	Oral reading	Sustained silent reading
Extensive	Listen and read aloud	Read easy text fast for meaning
Intensive	Read text analytically to learn grammatical, lexical and phonological points	Read slowly and apply grammatical, lexical and phonological points to the text

III. METHOD

1. Criteria for Selecting Researches

Researches for this synthesis study were located by searching electronic databases: http://www.nanet.go.kr, http://www.riss4u.net, http://nl.go.kr. Databases were searched using key words related to 'extensive reading', and references of previously collected literature were added to the list of researches provided they met the proposed criteria. Researches must meet the following criteria to be included in the list of researches for a meta-analysis:

First, studies must be experimental or quasi-experimental studies which can be quantifiable for this study of extensive reading. In this study, the numbers collected include descriptive data such as means, standard deviations and inferential data such as T-test, F-Test, and the correlation coefficient.

Second, population dealt with in this study underwent extensive reading programs in public school system or public adult education for certain period of time. The papers are classified into different school levels: elementary, junior-high, high, college level and adult. Literatures for kindergartners were excluded from this study.

Third, effects of extensive reading must include either cognitive effects or affective effects or both. Cognitive effects include pre/post reading comprehension, reading speed, listening, writing or vocabulary. Affective effects are confidence, interest, attitude and/or anxiety.

Fourth, since this study focuses on the overall effects of extensive reading onto different levels of English learners, it includes only studies showing pre/post effects and/or extensive/non-extensive reading program comparison. It excludes comparative studies within extensive reading programs showing the different effects caused by different teaching methods or managements of extensive reading programs.

21 thesis and journals were selected satisfying afore mentioned criteria out of 43 literatures searched online for this study. Two papers covered elementary schools, and five did junior high schools, four high schools, eight colleges and two adults. The studies for synthesis are shown in table 2.

TABLE 2

Primary Studies of Extensive Reading

#	Researcher (year)	Topic	Effects	Grade
1	Yu (2007)	A study of improving listening ability through reading skills in elementary English	Listening	Elementary
2	Kim&Whang (2006)	A study of running English extra-curricular classes in an elementary school using extensive reading program	Vocabulary Affective domain	Elementary
3	Park (2006)	A study on the reading and writing relations for Korean middle school learners through English story reading in the individual and group work	Reading, Writing	Junior High
4	Lee (2005)	A Study on the teaching method of writing reading journal after extensive reading using language learner literature	Writing	Junior High
5	Lai (1993)	Effect of ER on English Learning in Hong Kong	Vocabulary Literacy Reading speed	Junior High

6	Sheu (2003)	ER with EFL Learners at Beginning Level	Vocabulary Literacy	Junior High
7	Robb & Susser (1989)	ER vs. Skills Building in an EFL Context	Literacy Reading speed	Junior High
8	Shin & Ahn (2005)	The effects of materials types in sustained silent reading on reading rate and comprehension of Korean EFL learners	Reading speed	High
9	Mok (2004)	A Study of improving the English reading ability through extensive reading of language learner literature in high schools	Interest, Attitude, Confidence, Anxiety	High
10	Iwahori (2008)	Developing reading fluency	Literacy Reading speed	High
11	Park & Kang (2004)	A Study on the Application of Extensive Reading of Language Learner Literature in Secondary English Education	Vocabulary Literacy Attitude	High
12	Jeon (2008)	ER in a formal English reading class	speed test recall test cloze test	College
13	Kwon (2008)	Co-relationship between English extensive reading & TOEIC scores for undergraduate students	Grade for TOEIC	college
14	Al-Homoud & Schmitt (2009)	ER in a challenging environment	Vocabulary Literacy Reading speed Affective domain	college
15	Sims (1996)	A comparative study of improvements in reading comprehension of skill-based instruction and ER for pleasure	Literacy	college
16	Shin (2006)	A study of integrated reading education through voluntary extensive reading	Vocabulary Literacy Reading speed	college
17	Mason & Krashen (1997)	ER in EFL	Literacy	college
18	Hayashi (1999)	Reading Strategies and ER in EFL Classes	Vocabulary Literacy	College
19	Yamashita (2008)	ER and development of different aspects of L2 proficiency	Literacy	College

20	Horst (2005)	Learning L2 Vocabulary through ER	Vocabulary	Adult
21	Bell (2001)	ER: Speed and comprehension	Literacy Reading speed	Adult (Basic)

2. Collecting and Analyzing data

The procedure of synthesizing researches consists of five stages: The first stage is to set up the research question and the hypothesis, the second stage is to collect and select the relevant researches, the third stage is to code the specified variables of the researches, the fourth stage is to analyze the data result and synthesize the results. And the last stage is to present the analyzed data and interpret the effect size.

For the third and fourth stages, the coding schemes for collected researches are developed and tagged for the individual effect sizes. The properties of studies under the current meta-analysis were analyzed and coded for the following information:

(1) The basic information of collected studies under analysis including name of researcher(s), year of study, title and source journal or thesis.
(2) Grade levels of subjects divided by elementary, junior high, high, college and adult.
(3) Dependent variables including components and skills for communicative competence (CC) and elements in affective domain (AD). CC includes vocabulary, literacy, listening, word recognition, reading speed, reading and writing while AD comprises interest, attitude, motivation and anxiety.
(4) Data used for synthesizing different degree of effects of collected researches contain mean, standard deviation, t-value, F-value, correlation and z-value.
(5) The individual effect size for each dependent variable was calculated using formula given in figure 1 and figure 2.

3. Synthesizing Individual and Modified Effect Sizes

The effect size means the result of the common value for analyzing the specified research results in a statistical method where the mean of the controlled group is subtracted from that of the experimental group divided by the standard deviation of the controlled group or of pooled standard deviation of experimental and controlled group.

In this study, the formula for the effect size uses the pooled estimate of variance presented by Hedges (1981).

In this study, the collected data will be further processed in the consideration the different numbers of participants in different researches. The mean values subtraction of control group from experimental group divided by standard deviation will be further modified into one that a bigger size research should have more weight to give a proportional balance between effect size and the number of participants. The most common way to balance the difference is using the reciprocal variance of weight (Oh, 2002).

Ⅳ. RESULT AND DISCUSSION

1. General Observation of Results

Among 21 papers analyzed, elementary school students showed positive effect sizes for both cognitive (listening ability and vocabulary) and affective domain (interest, participation, confidence and motivation). One noticeable effect of ER in elementary school was found in Yu (2007) where she reported a substantial positive effect size on listening ability of elementary school students as shown in table 3.

In middle school, Lai (1993), Sheu (2003) and Rob and Susser (1989) showed that the effects of ER on vocabulary, reading comprehension and reading speed are positive except C-9 and C-14 in table 3 where the experimental group of Lai (1993) in both vocabulary and reading comprehension performed slightly lower than the control group. As C-11, C-15 in Lai (1993) and C-20 in Sheu (2003) show, reading comprehension results for experimental groups are lower than the corresponding control groups.

High school results show positive effects of ER on reading comprehension, but they show conflicting effects in reading speed and affective domain. Shin and Ahn (2005) showed reading speed (C-24) of the experimental group slightly lagged behind that of the control group, but Iwahori (2008) showed otherwise (C-33). Attitude (A-6) of experimental group in Mok (2004) is lower than that of control group, but attitude (A-9) of Park and Kang (2004) shows higher positive result in experimental group compared with control group. ER programs on college students and adults show all positive results as shown in table 3.

TABLE 3

Coding Scheme for Meta-analysis of Extensive Reading

Researcher (year)	School Level	Division	Test Variable	Experimental G			Control G			ES
				N	M	SD	N	M	SD	
Yu (2007)	Elementary	Cognitive (C) C-1	Listening	30	92.5	6.8	30	82.3	13.3	1.94
Kim & Hwang (2006)		C-2	Vocabulary	20	23.10	7.46	20	17.65	7.60	0.72
		Affective (A) A-1	Interest	20	4.45	0.51	20	3.90	0.55	1.04
		A -2	Participation	20	3.95	0.51	20	3.80	0.70	0.24
		A -3	Confidence	20	4.25	0.72	20	4.00	0.92	0.30
		A -4	Motivation	20	4.65	0.49	20	4.05	0.83	0.88
Park (2006)	Junior High	C-3	Reading		11.23	4.19	36		4.20	0.61
		C-4	Writing		12.47	2.77	17		3.14	-0.04
Lee (2005)		C-5	Writing	10	78.9	14.39	10	62.7	15.37	1.09
Lai (1993)		C-6	Vocabulary 1	86	5.767	3.238	87	4.241	2.877	0.50
		C-7	Vocabulary 2	83	6.759	3.550	80	5.213	3.378	0.45
		C-8	Vocabulary 3	77	3.078	2.377	73	1.945	1.723	0.54
		C-9	Vocabulary 4	40	6.275	3.097	39	6.385	2.691	-0.04
		C-10	Reading comprehension (RC)	86	39.314	10.989	87	34.414	11.327	0.44
		C-11	RC	59	21.932	7.688	59	24.610	8.769	-0.32
		C-12	RC	83	35.554	14.057	80	32.925	14.012	0.19
		C-13	RC	77	24.805	6.596	73	23.233	6.406	0.24
		C -14	RC	40	39.300	12.158	39	39.513	11.601	-0.02
		C -15	RC	39	15.324	5.275	31	16.735	5.281	-0.27
		C-16	RC	36	22.629	8.647	37	22.462	6.283	0.02
		C-17	Reading speed 1	86	226.0	132	86	165.1	59	0.60
		C-18	Reading speed 2	88	181.3	45	88	84.9	46	2.12
Sheu (2003)		C-19	Vocabulary	31	3.79	1.29	33	2.14	1.65	1.11
		C-20	RC	31	95.8	32.4	33	118.6	48.7	-0.55
Robb & Susser (1989)		C-21	Vocabulary	62	6.721		62	5.778	F=7.396	0.48
		C-22	RC	62	7.311		62	6.667	F=7.897	0.50
		C-23	Reading speed	62	8		62	7.58	F=2.431	0.28
Shin & Ahn (2005)		C-24	Reading speed		29.2	23.7	225		24.53	-0.28
Mok (2004)	High	A-5	Interest	19	3.12	0.85	19	3.10	0.89	0.02
		A-6	Attitude	19	3.64	0.92	19	3.91	0.78	-0.32
		A-7	Anxiety	19	1.99	1.02	19	2.38	0.96	-0.39
		A-8	Confidence	19	3.17	0.96	19	2.85	0.98	0.33

Iwahori (2008)	College	C-25	RC	33	112.82	29.39	33	80.00	28.76	1.13
		C-26	Reading speed	33	51.00	11.50	33	47.58	11.06	0.30
Park & Kang (2004)		C-27	Vocabulary	35	9.17	4.90	35	4.60	2.43	1.18
		C-28	RC	35	4.86	2.53	35	3.80	2.59	0.41
		A-9	Attitude	35	3.7	1.09	35	3.3	1.24	0.34
Ieon (2008)		C-29	Reading speed		187.65	73.23	17		62.28	0.66
		C-30	Recall test		29.41	7.48	17		6.53	1.37
		C-31	Cloze test		41.47	14.28	17		11.97	0.71
Kwon (2008)		C-32	Grade for TOEIC	23		r=0.501	23			1.33
Al-Homoud & Schmitt (2009)		C-33	Vocabulary	45	24.96	9.56	45	19.11	6.10	0.73
		C-34	RC	45	16.58	7.37	45	12.38	4.61	0.68
		C-35	Reading speed	45	13.89	5.43	45	12.18	4.56	0.34
		C-36	TOEFL score	47	7.45	2.95	47	6.21	2.82	0.43
		C-37	PET score	47	4.39	1.97	47	3.56	1.82	0.44
		C-38	Reading speed	43	93.57	21.18	43	60.08	19.41	1.65
		A-10	Attitude	41	5.10	0.64	15	4.02	1.02	1.43
		A-11	Confidence	41	5.37	0.51	15	4.82	0.96	0.84
Sims (1996)		C-39	RC	30	33.07	3.81	30	29.93	4.05	0.80
		C-40	RC (recall)	30	54.63	15.32	30	46.77	13.36	0.55
Shin (2006)		C-41	Vocabulary	35	18.86	8.58	35	13.80	9.59	0.56
		C-42	RC	35	75.36	18.17	35	58.10	21.98	0.86
		C-43	Reading Speed	35	66.80	20.59	35	54.17	22.95	0.58
Mason & Krashen (1997)		C-44	Cloze Test	39	41.88	11.50	39	31.30	11.04	0.94
		C-45	RC	18	25.69	10.15	18	17.56	7.42	0.94
		C-46	Summary Writing	40	48.08	8.86	40	29.55	8.87	2.09
		C-47	Reading Speed	31	33.71	9.02	31	16.74	8.00	2.00
Hayashi (1999)		C-48	Vocabulary	100	48.7	5.4	100	46.8	3.9	0.40
		C-49	RC	100	46.2	5.9	100	42.6	5.1	0.65
Yamashita (2008)		C-50	RC	38	43.05	10.24	38	37.73	10.25	0.52
Bell (2001)	Adult	C-51	Reading Speed	14	127.53	29.31	12	92.54	19.72	1.38
		C-52	Cloze Test	14	20.28	1.68	12	15.18	6.08	1.19
		C-53	Multiple Choice	14	17.78	1.19	12	13.18	1.60	3.30
Horst (2005)		C-54	Vocabulary 1	17	47.94	1.89	17	41.35	5.38	1.63
		C-55	Vocabulary 2	17	43.59	4.30	17	33.80	8.18	1.50

C stands for cognitive factors and the serial number identifies each dependent factor of cognitive results in the researches. A stands for affective factors and the serial number identifies each dependent factor of affective results in the researches. Taking numbers of participants into consideration, the modified effect sizes are shown in table 4 for cognitive effects and table 5 for affective effects. The results magnified the cognitive effects in that more conventional measurements such as vocabulary, reading comprehension and reading speed as well as less conventional effect measurements such

as cloze test, TOEFL and TOEIC show demonstrated positive results except a few exceptional cases. The exceptional cases (C-4, C-9, C-11, C-14, C-15, C-20 and C-24) in table 4 show relatively low effect sizes compared to the effect sizes shown in table 3.

TABLE 4
Modified Effect Sizes of Cognitive Domain

C-#	ES	*W*	*W×ES*
C-1	1.94	*09.72*	*18.85*
C-2	0.72	*9.17*	*6.64*
C-3	0.61	*05.89*	*3.59*
C-4	-0.04	*12.55*	*-0.50*
C-5	1.09	*22.71*	*24.75*
C-6	0.50	*40.71*	*20.29*
C-7	0.45	*38.59*	*17.21*
C-8	0.54	*35.09*	*19.07*
C-9	-0.04	*19.84*	*-0.75*
C-10	0.44	*41.00*	*18.00*
C-11	-0.32	*30.75*	*-9.99*
C-12	0.19	*39.80*	*7.46*
C-13	0.24	*36.38*	*8.79*
C-14	-0.02	*19.79*	*-0.35*
C-15	-0.27	*17.86*	*-4.78*
C-16	0.02	*18.20*	*0.40*
C-17	0.60	*40.02*	*23.84*
C-18	2.12	*34.79*	*73.70*
C-19	1.11	*14.04*	*15.58*
C-20	-0.55	*17.16*	*-9.40*
C-21	0.48	*29.25*	*14.04*
C-22	0.50	*29.18*	*14.59*
C-23	0.28	*29.95*	*8.39*
C-24	-0.28	*00.89*	*-0.24*
C-25	1.13	*14.46*	*16.32*
C-26	0.30	*15.90*	*4.82*
C-27	1.18	*15.25*	*18.02*
C-28	0.41	*16.64*	*6.89*
C-29	0.66	*12.39*	*8.17*
C-30	1.37	*14.38*	*19.70*

C-31	0.71	*12.48*	*8.86*
C-32	1.33	*05.89*	*7.83*
C-33	0.73	*20.62*	*15.04*
C-34	0.68	*20.73*	*14.16*
C-35	0.34	*21.58*	*7.36*
C-36	0.43	*22.30*	*9.58*
C-37	0.44	*22.28*	*9.75*
C-38	1.65	*17.83*	*29.39*
C-39	0.80	*13.64*	*10.89*
C-40	0.55	*14.04*	*7.68*
C-41	0.56	*16.36*	*9.10*
C-42	0.86	*15.81*	*13.53*
C-43	0.58	*16.32*	*9.45*
C-44	0.94	*17.45*	*16.40*
C-45	0.94	*8.05*	*7.57*
C-46	2.09	*15.86*	*33.14*
C-47	2.00	*12.40*	*24.80*
C-48	0.40	*47.60*	*19.20*
C-49	0.65	*46.23*	*30.18*
C-50	0.52	*17.84*	*9.26*
C-51	1.38	*5.52*	*7.61*
C-52	1.19	*5.63*	*6.68*
C-53	3.30	*4.58*	*15.13*
C-54	1.63	*7.06*	*11.54*
C-55	1.50	*7.16*	*10.73*
Sum		1,125.81	702.33

The affective effects in the modified effect sizes of Table 5 are strongly positive on the side of ER experimental groups except one high school incident in A-6 (attitude). High school students' overall interest (A-5) and attitude (A-6) are either very low or negative due to their thought that ER is not directly relevant to college entrance exam. However, one thing we have to note is that their confidence (A-4) grows very strong despite other low and negative affective growth. Anxiety in A-7 is indeed positive even though the effect figure is negative since lower anxiety is better in foreign language learning than higher anxiety.

TABLE 5

Modified Effect Sizes of Affective Domain

A-#	Effect Size	Weight	Weight × Effect Size
A-1	1.04	8.85	9.18
A-2	0.24	9.70	2.38
A-3	0.30	9.64	2.92
A-4	0.88	9.01	7.93
A-5	0.02	10.52	0.21
A-6	-0.32	10.65	-3.40
A-7	-0.39	10.72	-4.18
A-8	0.33	10.66	3.51
A-9	0.34	16.78	5.75
A-10	1.43	9.63	13.74
A-11	0.84	10.15	8.50
Sum		116.31	46.54

1. Mean Effect Sizes across Different Age Groups

ER programs created positive effects in both cognitive and affective domains across different school levels except single affective domain in high school as shown in Table 6. Effects of ER programs indicate that cognitive effect sizes of ER are bigger in elementary, college students and adults. However, the effect sizes for secondary schools are relatively lower than the other groups.

TABLE 6

Effect Sizes for Different Age Groups

Age groups	Dependent Variables		Effect size
Elementary school	Cognitive		1.33
	Affective		0.61
Junior High school	Cognitive		0.38
High school	Cognitive		0.55
	Affective	Positive factor	0.09
		Negative factor	-0.39
College	Cognitive		0.87
	Affective		1.13
Adult	Cognitive		1.8

3. Mean Effects for Different Skills, Components and Affective Domain

Effect sizes for different language skills and components and for different affective domains are shown in table 7. ER is a good method to improve not only vocabulary, literacy, reading comprehension and reading speed but also listening and writing. Effect

sizes for different affective domains show overall positive effects in elevating interest, confidence, motivation, attendance, attitude and lowering anxiety.

TABLE 7

Effect Sizes for Different Language Skills, Components and Affective Domain

Domain	Effect Size
Listening	1.94
Vocabulary	0.73
Literacy	0.25
Reading speed	0.80
Reading comprehension	1.06
Writing	1.04
Interest	0.53
Confidence	0.49
Motivation	0.88
Attendance	0.24
Attitude	0.48
Anxiety	-0.39

The overall means of effect sizes synthesizing researches on extensive reading are shown in cognitive and affective domain as in Table 8. As discussed above, 55 cognitive effects and 11 affective effects caused by extensive reading are synthesized into mean effect sizes for each domain.

TABLE 8

Mean Effect Sizes for Cognitive and Affective Domain

Treatment	Measured Variable	# of Effect	Mean effect size
Extensive Reading	Cognitive Domain	55	0.623
	Affective Domain	11	0.400

The synthesized effect size for cognitive domain out of 55 effects in 21 literatures is 0.623 which is a big effect size according to Cohen (1988)'s criteria. Hence, it could be said that extensive reading causes a large positive effect on the overall cognitive sides of English learning of participants.

In the synthesis of affective domain in the extensive reading researches, the effect size is 0.400 resulted from 11 effect sizes in 21 literatures. The figure belongs to a medium effect size according to Cohen (1988)'s criteria, which means that the extensive readings

under study create the overall medium effect in the affective domain of participants in the programs.

V. CONCLUSION

The result shows that across different age groups ER was effective in improving reading speed and reading comprehension, and also it motivated elementary, college level and adult participants in their affective domain. It showed positive transfers of language skills from ER to listening and writing. Despite the overall positive experimental figures of ER programs, the effect sizes were different in that elementary and college students and adults are more effective than junior high and high school students by a small margin. In case of junior high and high school students, a few instances reported that the effect was negative, though the size was small.

The mean effects of ER show a horse shoe shape where both children and adults gain more benefits from ER than junior high and high school students. These students showed mixed results indicating that ER does not help for their immediate concern of getting higher scores on college entrance exams. From this, the success of ER depends on how well the program compensates the regular school curriculum in order for students not to feel that they're participating in a program they don't need. The persuasive statistics can be attained from the effect studies on the relationship between ER and the standardized exam scores such as effect size 1.33 of TOEIC mean scores in Kwon (2008) and effect size 0.43 of TOEFL scores in Al-Homoud and Schmitt (2009). More researches are called for to confirm the relationship of ER and its effects on standardized exam, but at least these preliminary researches lay foundations on the ER program and its positive impact on college entrance exam.

The limitations of study as always the case in meta-study are in that the current meta-study is done only for the researches at hand, and the conditions of ER implementation varies over different schools and countries. More rigorous studies in an extensive scale need to be done either for the confirmation or disposal of the findings in this study.

REFERENCES

Al-Homoud, F. & Schmitt, N. (2009). Extensive reading in a challenging environment: a comparison of extensive and intensive reading approaches in Saudi Arabia. *Language Teaching Research*, *13*(4), 383-401.

Anderson, R.C., Wilson, P.T., & Fielding, L.G. (1988). Growth in reading and how children spend their time outside of school. *Reading Research Quarterly, 23*(3), 285-303.

Bell, T. (2001). Extensive reading: Speed and comprehension. *The Reading Matrix, 1*(1), 27-45.

Berkoff, N.A. (1979). Reading skills in extended discourse in English as a foreign language. *Journal of Research in Reading, 2*, 95-107.

Bright, J.A., & McGregor, G.P. (1970). *Teaching English as a second language.* London: Longman.

Broughton, G., Brumfit, C., Flavell, R., Hill, P. & Pincas, A. (1978). *Teaching English as a foreign language*. London: Routledge & Kegan Paul.

Brusch, W. (1991). The role of reading in foreign language acquisition: designing an experimental project. *English Language Teaching Journal, 45*(2), 156-163.

Champeau de Lopez, C.L. (1993). Developing reading speed. *English Teaching Forum, 31*(1), 50-51.

Cobb, T. (2007), Computing the vocabulary demands of L2 reading. *Language Learning & Technology, 11*, 38–63.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.).* New York, NY: Academic Press.

Cooper, M. (1984). Linguistic competence of practiced and unpracticed non-native readers of English. Alderson, J.C. & Urquhart, A.H. (eds.). *Reading in a foreign language* (pp.85-112). London: Longman.

Day, R.R., & Bamford, J. (1998). *Extensive reading in the second language classroom.* Cambridge: Cambridge University Press.

De Leeuw, E., & De Leeuw, M. (1965). *Read better, read faster*. London: Penguin.

Elley, W.B., & Manghubai, F. (1983). The effect of reading on second language learning. *Reading Research Quarterly, 19*(1), 53-67.

Fry, E.B. (1963). *Teaching faster reading: a manual*. Cambridge: Cambridge University Press.

Hamp-Lyons, E. (1983). Developing a course to teach extensive reading skills to university-bound ESL learners. *System, 11*, 303-312.

Hayashi, K. (1999). Reading strategies and extensive reading in EFL classes. *RELC Journal, 30*, 114-132.

Hedges, L. S. (1981). Distribution theory for glass's estimator of effect size and related estimators. *Journal of Educational Statistics, 6*, 106-128.

Hill, J. (1986). *Using literature in language teaching*. London: Macmillan.

Hino, N. (1988). Yakudoku: Japan's dominant tradition in foreign language learning. *JALT Journal, 10*(1/2), 45-55.

Horst, M. (2005). Learning L2 vocabulary through extensive reading: A measurement study. *The Canadian Modern Language Review, 61*(3), 355-382.

Iwahori. (2008). Developing reading fluency: A study of extensive reading in EFL. *Reading in a Foreign Language, 21*(1), 70-91.

Kerecuk, N., & Velloso Ribeiro, O. (1984). The book club project. *Modern English Teacher, 12*(1), 18-24.

Kim, B. (2005). A Suggestion for Improving EFL Learners` English Reading Ability: Teaching English Constructions through Focus-on-Form Instruction. *The Jungang Journal of English Language and Literature*, *47*(1), 99-120.

Kim, J., & Hwang, J. (2006). A study of running English extra-curricular classes in an elementary school using extensive reading program. *English Language Teaching, 18*(2), 243-270.

Kwon, J. (2008). *Co-relationship between English extensive reading & TOEIC scores for undergraduate students.* Unpublished MA thesis. Seogang Univ., Seoul.

Lai. E. F. K. (1993). Effect of extensive reading on English Learning in Hong Kong. *CUHK (Chinese University of Hong Kong) Education Journal, 21*(1), 23-36.

Laufer-Dvorkin, B. (1981). Intensive versus extensive reading for improving university students' comprehension in English as a foreign language. *Journal of Reading, 25*(1), 40-43.

Lee, Jong-Hee. (2006). Korean EFL learners' cognitive tendencies in critical reading of argumentative texts. *English Language and Literature Teaching, 12*(2), 72-95.

Light, T. (1970). The reading comprehension passage and a comprehensive reading program. *English Language Teaching, 24*, 120-124.

Maddox, H. (1963). *How to study*. New York: Fawcett World Library.

Mason, B. & Krashen, S. (1997). Can extensive reading help unmotivated students of EFL improve? *ITL Review of Applied Linguistics, 9*(2), 79-84.

Mason, B. & Krashen, S. (1997). Extensive reading in English as a foreign language. *System*, 25(1), 91-102.

Mok, Y. (2004). *A Study of improving the English reading ability through extensive reading of language learner literature in high schools.* Unpublished MA thesis. Korea National University of Education, Chungbuk.

Oh, S. (2002). *Meta-analysis method and practice for integration and reanalysis of pre-research result.* Seoul: Konkuk University Press.

Park, H. (2006). *A study on the reading and writing relations for Korean middle school learners through English story reading in the individual and group work.* Unpublished MA thesis. Ewha Womans University, Seoul.

Park, S., Kang, W. (2004). A study on the application of extensive reading of language learner literature in secondary English education. *Journal of the Korea English Education Society*, *3*(2), 97-138.

Renandya, W. A., Rajan, B. R. S., & Jacobs, G. M. (1999). Extensive reading with adult learners of English as a second language. *RELC Journal, 30*, 39-61.

Richard, W. (1982). Improving reading speed in readers of English as a second language. *JALT Journal, 4*, 89-95.

Robb, T. N. & Susser, B. (1989). Extensive reading vs. skills building in an EFL context. *Reading in a Foreign Language, 5*(2), 239-521.

Sheu, S. P-H. Extensive reading with EFL learners at beginning level. *TESL Reporter, 36*, 8–26.

Shin, I. & Ahn, B. (2005) The effects of materials types in sustained silent reading on reading rate and comprehension of Korean EFL learners. *Foreign Languages Education, 12(2),* 213-239.

Shin, K. (2006). *A study of integrated reading education through voluntary extensive reading.* Seoul: Korea Academic Information.

Sims, J. M. (1996). *A comparative study of improvements in reading comprehension of skill-based instruction and extensive reading for pleasure with Taiwanese freshmen university students*. Unpublished doctoral dissertation. Florida State University, Tallahassee, FL.

Song, Jeong-Won. (2006). The effects of internet-based practice on listening and reading. *English Language and Literature Teaching, 16*(2), 96-117.

Susser, B., & Robb, T.N. (1990). EFL extensive reading instruction: Research and procedure. *JALT Journal, 12*(2), 161-185.

Williams, E. (1984). *Reading in the language classroom*. London: Macmillan.

Yamashita, J. (2008). Extensive reading and development of different aspects of L2 proficiency. *System, 36*, 661-672.

Yu, J. (2007). *A study of improving listening ability through reading skills in elementary English.* Unpublished MA thesis. Wongwang university, Jeonbuk.

Examples in: English
Applicable Languages: English
Applicable Levels: Elementary/Secondary/College/Higher

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