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The effectiveness of core ER principles

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This discussion piece continues the discussion forum on extensive reading (ER) from the April 2015 issue of *Reading in a Foreign Language*. In that forum, a number of the discussions were concerned with the principles of ER (Day & Bamford, 2002) in implementing ER. Our discussion also concerns the principles; we examine ER programs that used what we believe are five core principles and their impact on second language (L2) reading proficiency.

The aim is to show how much effect we can expect from ER programs on L2 reading proficiency through the tool of meta-analysis. We discuss the results of a meta-analysis that was done to determine the effect of ER programs on L2 reading proficiency in two settings, English as a foreign language (EFL) and English as a second language (ESL). These ER programs all used the five core principles. For details on the meta-analysis and the study, see Jeon and Day (in progress).

Five Principles and Reading Proficiency

In this discussion, we present the results of our study, which was done to determine the impact of these five principles on reading proficiency in ER programs in EFL and ESL settings:

- The reading material is easy.
- Learners choose what they want to read.
- Learners read as much as possible.
- Reading is individual and silent.
- Teachers orient and guide their students.
  (Day & Bamford, 2002, pp. 137–140)

These five principles may not be directly applicable to all ER programs but we believe, from our investigation, that these five are key or core to any ER program whose goal is to improve L2 reading proficiency. We believe this discussion will provide better understanding of the effectiveness and efficiency of ER as a pedagogic tool for developing L2 reading proficiency.

We use the term *reading proficiency* to describe proficiency in reading comprehension, reading rate, and vocabulary knowledge. The rationale for this is based on the wide acceptance of the positive relationship among reading comprehension, reading rate and vocabulary. A high level of reading comprehension cannot take place without efficient decoding of print (Adams, 1994) and vocabulary knowledge.

The Study

In order to find and select the necessary data for the meta-analysis, exhaustive online and manual bibliographical searches were conducted. The educational databases including Educational Resources Information Center (ERIC), Research Information Sharing Service (RISS), and Dissertation and Thesis were utilized as tools for the online search. Search terms included combinations of the following key words: extensive reading, pleasure reading, reading comprehension, reading rate, vocabulary, and ESL and EFL.

In addition, seven applied linguistics journals were searched: *Reading Research Quarterly; Reading in a Foreign Language; TESOL Quarterly; Language Learning; Applied Linguistics; ELT Journal;* and *System*. Finally, the Extensive Reading Foundation bibliography was examined, which had a list of about 500 references on ER.

In order to be included in the meta-analysis, the ER program needed to use the five principles of ER described above. In terms of the meta-analysis, studies needed to satisfy the following criteria:

i. Studies should adopt either an experimental or a quasi-experimental design, which has quantifiable data for meta-analysis. That is, in order to calculate its effect, a study should have statistical information such as means, standard deviations, number of participants, *t*-value, *p*-value and so on. Some primary studies that did not report enough statistical information to compute effect size had to be excluded.
ii. Results should indicate changes in learners' reading comprehension, reading rate, or vocabulary.
iii. The studies from 1980 to 2014 were included because studies on extensive reading in ESL and EFL settings were extremely hard to find prior to 1980.

According to the above-mentioned criteria, 51 samples from 32 primary studies were selected for experimental- vs. control-group design and 20 samples from 17 primary studies were selected for pre- vs. post- test design.

We used the Comprehensive Meta-analysis Program to calculate the effect sizes. Effect sizes can be calculated in several ways such as Cohen's *d*, Hedges' *g*, Pearson's *r*, and Glass's *delta*. Cohen's *d* was adopted in this study because it is considered to be the most typical way to estimate effect sizes (Cohen, 1977).

Results

The overall effectiveness of ER was synthesized separately based on the study design (i.e., experimental- vs. control-group design or pre-to-post-test design). The estimate of effectiveness of ER on reading proficiency was obtained from 51 unique samples from experimental- vs. control-group contrasts and 20 samples from pre-to-post-test contrasts.

The summary effect refers to the mean of effect sizes with more weight assigned to studies with a large number of participants. Therefore, effect sizes from a large number of participants have more influence on the statistical outcome than those with a small number of participants (Lipsey & Wilson, 2001).

The overall effectiveness aggregated from 51 experimental- vs. control-group contrasts was 0.57. This indicates a small to medium superiority of the ER group over the intensive or traditional reading group on the immediate posttest. The effect size of 0.57 indicates that the mean of the experimental group is at the 72nd percentile of the control group. The summary effect can be considered trustworthy due to a large sample size (n = 51) and a small standard error (SE = 0.06).

Similarly, the overall effect from 20 pre-test to post-test comparisons was small to medium (d = 0.79). However, the numbers of participants involved in pre-test to post-test comparison studies tended to be smaller than those of experimental vs. control design which led a standard error that was one and a half times higher (SE = 0.09) than the experimental vs. control design (SE = 0.06). Furthermore, the homogeneity test was also found to be statistically significant (Q = 68.88, df = 19, p <0.05).

It can be concluded that effectiveness of an ER approach was small to medium with respect to Plonsky and Oswald's (2014) proposed benchmark for interpreting effect sizes in second language acquisition. That is, experimental groups outperformed control groups on their immediate posttest and there was a small to medium improvement in reading proficiency from the pretest to posttest. In fact, the mean of the experimental group was at the 72nd percentile of the control group, which clearly showed the impact of ER when compared to a traditional reading approach. The overall supremacy of ER over intensive or traditional reading approaches is consistent with previous meta-analyses (Krashen, 2007; Kim, 2012; Nakanishi, 2015).

In order to assess differences among subgroups, a mixed-effect model was employed. First, 51 samples were grouped into four different periods of publication: 1980s, 1990s, 2000s, and 2010s. Although 1980s had the highest mean effect (d = 0.83), this should be interpreted with caution due to the small sample size (n = 3). Also, an increase in effect sizes was shown as the years went by (i.e., 1990s: d = 0.33; 2000s: d = 0.49; 2010s: d = 0.78) and the difference among subgroups was found to be statistically significant (Q = 22.87, p < 0.05). The increase not only in the mean effect of ER but also in number of studies reflected the development and interest in ER in our field over last 30 years.

Moreover, the difference between ESL (d = 0.38) and EFL (d = 0.65) settings was found to be statistically significant (Q = 5.89, p < 0.05). However, this result should be interpreted with

caution since this study included a greater number of EFL settings (n = 37) than ESL settings (n = 14) and ESL studies did not involve any adult groups, which showed higher mean effects than other age groups. It is also worth noting that the majority of EFL and ESL countries included in the meta-analysis were Asian Pacific countries rather than North American or European countries.

Finally, the age of the participants seemed to have an influence on the efficacy of an ER approach as significant differences among age groups were found (Q = 9.14, p < 0.05). The highest mean effect size for the adults group (d = 0.70) was followed by children (d = 0.52) and adolescents (d = 0.35) groups. The adult group, in particular, showed over twice as high an effect size as the adolescent group.

Discussion

The results showed that there was a small to medium effect for both experimental-versus control group design (d = 0.57) and pre-to post-test (d = 0.79) design concerning the overall effectiveness of ER on reading proficiency. The effect can also be compared with regard to other meta-analytical findings in our field. For example, the summary effect of corrective feedback was d = 1.16 (Russell & Spada, 2006), the effect of computer-mediated glosses was d = 0.73 (Abraham, 2008), the effect of strategy instruction was d = 0.49 (Plonsky, 2011), and the effect of visual input enhancement was d = 0.22 (Lee & Huang, 2008).

Currently, however, intensive reading is the most widely used approach to teaching reading in both EFL and ESL contexts (Grabe, 2009). However, it may be of little use if ER is not practiced in the school settings. One possible way to encourage ER is to inform and educate teachers, administrators, and policy makers of the effectiveness of ER. Without convincing them of its advantages over traditional teaching, it could be very difficult to adopt an ER approach in school settings. Based on his survey of teacher attitudes to ER practices in New Zealand, Macalister (2010) argues, "Extensive reading needs to be promoted through teacher education, new research, changes in course design, raising awareness among administrators and managers, and improved resource provision" (p. 59).

The steady increase in the number of studies as well as the mean effect of ER over last 30 years showed not only growing interest in ER in our field but also showed developing know-how in effectively implementing ER approach in classrooms. This suggests a positive outlook for its future.

As for contextual variables, settings and age seemed to affect the outcome of ER programs that used the five core principles. Although an ESL setting is generally considered to be a better environment for ER than an EFL setting, this finding indicates that ER programs that use the five core principles in EFL settings can be successful.

Moreover, an ER approach showed the highest effect with adults and the lowest effect with adolescents. A possible explanation for this is that the adults are cognitively more able to start reading extensively than adolescents. For example, adults have more experience, background

knowledge and vocabulary to maximize the advantages of an ER approach. The lower impact of ER on adolescents, on the other hand, may be due to the pressure of the examination system frequently common in these grades. Even though adolescents may be cognitively better off than children, they may not be motivated to actively participate in ER which may not have any direct impact on their grades.

A teacher's role seemed to vary considerably depending on the age of the participants. For example, adults can read independently without much assistance from the teacher, so in working with adults, a teacher's role is more like a facilitator or a role model. Other age groups, on the other hand, require scaffolding from the teacher, especially for groups of children. This is due to the fact that children, in most cases, do not have enough vocabulary or background knowledge to comprehend fully the text on their own. This may lead to a great variation of outcomes depending on the teachers' effort. Students who are led by more skillful and enthusiastic teachers may be better guided and may be more motivated than students whose teachers are less skillful, unmotivated, or reluctant.

Conclusion

This discussion examined the overall effectiveness of ER programs that used the five core principles on reading proficiency in ESL and EFL settings. It also investigated how year, setting, and age variables influenced the outcomes of ER programs. Our meta-analysis found that ER programs with the five core principles resulted in greater reading proficiency than intensive or traditional reading approaches. Also, the effect of ER was maximized by adults.

The efforts of an individual teacher may not be enough to make an ER program really work, even if he or she uses the core five principles. Systematic support by the school and government, such as the provision of a variety of books through the school library or computer programs, can greatly assist in the success of an ER approach. Also, teachers and policy makers need to realize that it takes time to see the benefits of an ER program. Finally, incorporating ER into the curriculum can motivate students to read more over time. That is, adopting ER in the form of an extracurricular activity, for example, could function to trigger ER but making ER a part of the curriculum is necessary to create ongoing motivation for students.

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