CHAPTER

21

VOLUME OF READING

If we can get students to read more (higher volume) during a school year, will that cause an increase their reading achievement? Most teachers and many researchers will answer "yes" to this question. However, the evidence is mixed. Under certain limited conditions a higher volume of reading is likely to cause an increase reading achievement, or E_L, but in typical reading situations a higher volume of reading is not likely to cause an increase in reading achievement.

Later in this chapter, theory and research relevant to volume of reading will be presented. Then, the classroom practice of sustained silent reading (SSR) will be described, and relevant research will be reviewed. Finally, the concept of "print exposure" will be described, and relevant research will be reviewed.

Theory

In 1990a, Carver presented a causal model which had thoughts rauded (T_r) as a proximal cause of both reading level, A_L, and rate level, R_L. Thoughts rauded, T_r, was a concept indistinguishable from volume of reading. This means that volume of reading occupied the central position in the causal model of reading achievement—the position that P_L now occupies (see Figure 1-5 from Chapter 1). Subsequent research and theory development forced volume of reading out of the causal model, and forced P_L into its prominent place.

The effect of a high volume of reading will be analyzed taking several theoretical factors into account. Most importantly, the effect depends upon whether the reading involves (a) material that is relatively easy, $A_L > D_L$ (called easy rauding), (b) material that is at the individual's level of ability, $A_L = D_L$ (called matched rauding), or (c) material that is relatively hard, $D_L > A_L$ (called hard reading). The effect of a high volume of reading also depends somewhat upon whether the individual is a beginning, intermediate, or advanced reader. These complicating factors need to be elaborated.

The main problem with increasing the volume of reading is that most students will increase their amount of reading in relatively easy materials, $A_L > D_L$, called "easy rauding." High volumes of easy rauding are not likely to increase substantially either V_L, P_L, or A_L. Verbal knowledge level, V_L, cannot be increased by easy rauding, because students will not encounter any words they

do not already know auditorily, that is, they cannot increase their V_LWords because they will not encounter any words that are not already audamatized when they read relatively easy material (see Carver, 1994b). Pronunciation knowledge, P_L, cannot be increased by easy rauding because students will not encounter any words that they do not already know how to pronounce, that is, they cannot increase their P_LWords because they will not encounter any new words in relatively easy material that are not already pronounceamatized. Finally, all words in relatively easy materials are already raudamatized words, therefore A_L cannot increase during easy rauding. This means that students who spend a great deal of time reading relatively easy novels—called recreational reading—will not gain more in V_L, P_L, or A_L, than students who spend an equal amount of time watching television or playing basketball.

It is difficult to understand how reading old known words could increase the number of new unknown words that can be accurately and quickly recognized. Or, stated differently, there is no obvious mechanism whereby the repeated reading of old raudamatized words will somehow result in the raudamatization of new words without ever encountering these new words in print. Thus, a high volume of reading relatively easy material during a school year is not likely to result in an increase in verbal level, V_L, or pronunciation level, P_L, or accuracy level, A_L. This means that a high volume of recreational reading involving fictional books is not likely to increase A_L or R_L. Therefore, it is not likely that reading achievement, or E_L, will be increased by a high volume of easy rauding.

It does seem likely that a low volume of easy rauding will keep fine tuned (practiced to asymptote) the ability to recognize overlearned words rapidly, for any reader. Individuals need to engage in a low volume of easy rauding in order to *maintain* all of their raudamatized words at their rauding rate, that is, maintain P_L and A_L at their achieved levels without losses occurring due to a lack of practice.

Whereas a high volume of easy rauding is not likely to improve reading achievement, a high volume of matched rauding is likely to improve reading achievement, or E_L. If students can be induced to read texts that are at their level of ability, $D_L = A_L$, then they are more likely to increase their pronunciation knowledge and their accuracy level. For students below raudamaticity, a high volume of matched rauding is likely to increase P_L and A_L, because these students will encounter audamatized words that they can learn to pronounce (increase P_LWords) and eventually raudamatize with practice (increase A_L Words). That is, students who are below raudamaticity can benefit from high volumes of matched rauding because a few new words will be encountered—about 1 new word every 100 words of text when $A_L = D_L$ (Carver, 1994b).

For students who are at raudamaticity, a high volume of matched rauding is also likely to increase reading achievement, or E_L. The new words that these students encounter will not be known auditorily, but they will often be able to

infer their meanings from context. If these students engage in a high volume of matched rauding, they are likely to increase V_L, P_L, and A_L (a) by learning the meaning of a new word from context, (b) by figuring out how to pronounce this word, and (c) by practicing the words via several encounters until it reaches raudamaticity. If V_L and P_L are increased, then A_L and R_L must be increased; therefore, E_L must also be increased, according to the causal model. This means that a high volume of matched rauding should increase reading achievement, or E_L, for all students, whether they are below or at raudamaticity. However, it is not easy, from a teaching standpoint, to get students to read texts that are at matched difficulty. It is much easier to get students to engage in large volumes of recreational reading because they ordinarily will choose books to read that involve easy rauding.

Hard reading involves texts that have high difficulty levels relative to the ability of the reader, $D_L > A_L$. Getting students to tackle relatively hard material and stick with it without becoming frustrated and giving up, is not an easy challenge to meet. In this regard, Jorgeson (1977) found correlations of .23 and .25 between the relative difficulty of the material that students were asked to read and the number of behavior problems in the classroom. These correlations are not large but when all of the factors which cause misbehavior are considered, this seems to be one of the contributing factors. That is, when students are asked to read relatively hard texts (materials that are at their frustration level), it should not be surprising that aggressive behaviors arise in some of the students.

Beginning readers and intermediate readers should not be asked to engage in hard reading because this will be too frustrating for them. When these students try to read relatively hard material they are likely to encounter many unknown words, that is, audamatized words that have not been pronounceamatized, plus words that have not yet been audamatized. This kind of reading may be so frustratingly difficult that an aversion to reading is learned. These readers should not be given relatively hard texts to read because they are likely to learn to avoid reading under these conditions.

With respect to advanced readers, they are all purported to be at raudamaticity. The main way for these readers to increase their reading achievement, or E_L, is probably by engaging in a high volume of hard reading. That is, by studying relatively hard materials, they are likely to increase V_L and A_L, which in turn will increase E_L.

Table 21-1 summarizes the recommendations regarding volume of reading at various levels of relative difficulty of text for beginning, intermediate, and advanced readers. Notice that a low volume of easy rauding is recommended for beginning, intermediate, and advanced readers, in order to maintain all of their raudamatized words at asymptote. Also notice that high volumes of matched rauding is recommended for beginning, intermediate, and advanced readers, in order to help increase the number of raudamatized words, and thereby increase reading achievement, or E_L. Finally, notice that hard

reading is not recommended for beginning and intermediate readers, but it is recommended for advanced readers. Hard reading is likely to be very frustrating for beginning and intermediate readers, and not an effective way to increase reading achievement, or E_L. On the other hand, hard reading is likely to be the main way that advanced readers can increase their reading achievement, via increasing V_L and A_L simultaneously, by learning new words and concepts that can eventually become raudamatized with practice.

Table 21-1
Recommended Volume of Reading at Varying Levels of Relative Difficulty for Beginning, Intermediate, and Advanced Readers

Relative Difficulty of Text Being Read	*Beginning Readers (Below Raudamaticity)*	*Intermediate Readers (Below & At Raudamaticity)*	*Advanced Readers (At Raudamaticity)*
Relatively Easy, $D_L < A_L$, called "easy rauding"	Low Volume	Low Volume	Low Volume
Matched Difficulty, $D_L = A_L$, called "matched rauding"	High Volume	High Volume	High Volume
Relatively Hard, $D_L > A_L$, called "hard reading"	(Zero Volume)	(Zero Volume)	High Volume

Research

Most of the research relevant to volume of reading and reading achievement prior to 1992 has been reviewed by Carver and Leibert (1995). They noted that Ingham (1981) "flooded" two schools with books and found that the test scores for these students were negligibly different from the students in two control schools. They also critiqued a study by Taylor, Frye, and Maruyama (1990) involving fifth and sixth graders keeping daily logs and concluded that "those data provide little or no encouragement for theory and practice that advocates more silent reading to increase growth in reading ability because only 2-3% of the variance was associated with home and school reading, and even this evidence remains correlational" (p. 30). Carver and Leibert also noted that Elley (1991) provided evidence that reading library books helps second-language learners become better readers, but those data may not generalize to first-language users because these students were likely to be engaged in matched rauding, not easy rauding. None of the studies reviewed by Carver and Leibert provided evidence that a high volume of easy rauding causes an increase in reading achievement.

Carver and Leibert (1995) also reported upon the results of a research study that they conducted. They studied the gain in reading achievement, E_L, for a group of 43 students in grades 3, 4, and 5 who read relatively easy fiction during 6 weeks of summer school, 2 hours a day. This 60 hours of nominal reading time did not result in their having higher reading achievement as measured by a test designed to indicate efficiency level, E_L. The control group was 107 students in the same school who did not participate in the high volume of supervised summer reading. Carver and Leibert summarized the findings of all of their research as follows: "Considering all the data collected, we found no solid or consistent evidence that students in a summer reading program who engaged in reading relatively easy library books for 6 weeks gained in their reading level, vocabulary, rate, or efficiency" (p. 46). They go on to evaluate the relevant theory and practice as follows:

> This idea of learning to read better by reading has some of the same qualities as lifting oneself up by one's bootstraps, a paradox that has been called the reading bootstrap. The reading bootstrap effect seems to be impossible for students engaged in easy rauding. (p. 46)
>
> Given the above results and interpretations, the instructional practice of allocating 2-3 hours of class time each week to free reading seems to be questionable. If most of this time could be made less free by inducing students to read books that are measured to be at or above the reading level of the student, then *maybe* this practice would result in gain in general reading ability. (p. 46)
>
> As long as we hear the truism that the best way to learn to read is to read, and as long as substantial amounts of classroom time are devoted to the free reading of library books, we should continue to be embarrassed that we have no solid experimental data supporting the reading bootstrap or the instructional practices based upon it. (p. 46)

The above research by Carver and Leibert (1995) is relevant to the contention of Smith (1992) who stated that: "if children are reading with interest and without difficulty, they are learning to read (and learning other useful things as well)" (p. 440). Indeed, this is what Carver and Leibert (1995) thought they would find when they designed this research where students read books of their choice each day in the summer reading program; Carver (1990a) even advanced the construct of volume of reading as a core causal factor, as was noted earlier. However, there was no evidence that the level of reading achievement of these students increased due to this book reading that involved students spending more hours reading "with interest and without difficulty." Instead, the correlation that Carver and Leibert reported between reading volume and reading achievement ($r = .42$) is more likely to be causal in the other direction. It seems much more likely that the students who came into the summer reading program at higher levels of reading achievement choose to read more during the time set aside for reading.

The above .42 correlation that Carver and Leibert reported between reading volume and reading achievement, or E_L, was found under structured conditions where everyone was encouraged and constrained to be engaged in recreational book reading, and alternative behaviors were discouraged. Surely, this correlation would increase under more normal situations where children could choose to read a book, watch TV, play a game, talk on the phone, etc., after school and on weekends. That is, it seems even more likely that students with higher reading achievement, higher E_L, would choose to spend more time at school and more time at home engaged in reading popular books than students with lower reading achievement because this activity is easier and therefore more fun for them. Again, it seems much more likely that higher reading achievement is a cause of higher volumes of reading than higher volumes of reading is a cause of higher reading achievement.

Sustained Silent Reading

The classroom practice of having students involved in uninterrupted sustained silent reading was suggested by L. C. Hunt (1967), and then later, McCracken (1971) referred to this practice as Sustained Silent Reading (SSR). For SSR, a teacher usually sets aside a certain period of class time, such as 20 to 30 minutes, for all students to read a book of their own choosing and read it silently for enjoyment and reading practice.

In 1980, Sadoski reviewed the history and rationale underlying sustained silent reading. He summarized the rationale as follows: "... students who read tend to become better readers, and the best way to develop reading ability is not through assessment or isolated skills drill, but by reading" (p. 154). However, he did note that "none of the theorists or researchers have suggested replacing reading instruction with Sustained Silent Reading" (p. 155).

According to the theory presented earlier, SSR would have minimal effects upon reading achievement, or E_L, unless there was some assurance that the students were selecting books to read that were at their own level of reading ability, i.e., matched difficulty or $D_L = A_L$. Because most students would probably choose a relatively easy novel to read for recreation during this period, it is not likely that SSR would improve E_L over a control group that worked on math problems, for example. Furthermore, if the class had no systematic spelling instruction, then it is likely that E_L would be increased much more by a control group that was encouraged to work on learning to spell more of the their audamatized words.

The research studies on SSR reviewed by Sadoski were pre-experimental; they were not designed with good control groups covering a long treatment (e.g., Farrell, 1982). Unfortunately, a good research study of the effect of SSR upon reading achievement has not been found.

Print Exposure

In research on the volume of reading by Stanovich and colleagues, the term "print exposure" has replaced the term "volume of reading" (e.g., Stanovich & Cunningham, 1993). Stanovich (1986) has drawn attention to print exposure as a major factor which purportedly causes improvement in reading achievement. He contends that "many things that facilitate further growth in reading comprehension ability—general knowledge, vocabulary, syntactic knowledge—are developed by reading itself" (p. 364). He went on to suggest that volume of reading had a bootstrapping effect: "The effect of reading volume on vocabulary growth, combined with the large skill differences in reading volume, could mean that a 'rich-get-richer' or cumulative advantage phenomenon is almost inextricably embedded within the developmental course of reading progress" (p. 381). So, the concept of print exposure and its possible effects, must be closely examined to see if it confirms or denies the theory presented earlier about reading volume.

In 1989, Stanovich and West theorized further about print exposure. They contended that the primary effect of more print exposure is upon orthographic knowledge, that is, knowledge of how words are spelled. Notice that an increase in this kind of knowledge should result in an increase in P_L, or an increase in the number of words that can be recognized or pronounced correctly. Thus, their theory about print exposure can be summarized as follows: students who read more books during the school year will gain more in P_L. Notice that this theory about print exposure is not restrictive with respect to what difficulty level of material is being read. Yet, the relative difficulty of material, D_L - A_L, would seem to be a crucial factor interacting with print exposure, as contended at the outset of this chapter. If individuals read relatively easy books, that is, easy rauding or recreational reading, then it is difficult to see how they could increase P_L when all of the words they encounter are already raudamatized words. Because students are not likely to encounter any new words when they read high volumes of relatively easy recreational books, it is difficult to understand how P_L could increase.

Stanovich and West also developed a measuring instrument which was designed to measure "print exposure," and thereby allow them to investigate their theoretical ideas about higher print exposure causing higher gain in P_L. This instrument was called the Author Recognition Test (ART). It required examinees to check "yes" or "no" beside 100 names indicating whether or not the person was a popular writer or author. Out of the 100 names, 50 were popular authors who purportedly would be known by most individuals who read a great deal because these 50 individuals are best-selling authors who have sold hundreds of thousands of books, e.g., Steven King, Judith Krantz, and Isaac Assi-

mov. An attempt was made to avoid authors who are regularly studied in the school curriculum. Also on the list of 100 names were 50 names of people who are not popular authors but instead were authors of published research in reading.

An instrument similar to the ART, described above, was also developed for children, by A. E. Cunningham and Stanovich (1990). It was called the Title Recognition Test (TRT). The TRT contains a list of 39 items, 25 of which are the actual titles of children's books, and 14 are foils, or pseudo titles. These lists of book titles contain such books as *Make Way for Ducklings* for first graders and *The Lion, The Witch, and The Wardrobe* for middle graders; some of the book titles are nonexistent foils so the test can be objectively scored, and a correction for guessing applied. The rationale is that individuals who score higher on this test have a higher volume of reading, or a higher degree of print exposure, because they would have had to have read more of these books in order to correctly identify more of them on the test. And, the more books they have read (higher volume of reading), the higher the number of book titles they can recognize. Translated, this theory seems to suggest that print exposure is a proximal cause of P_L, and therefore should occupy a circle in the causal model at Echelon 4 with an arrow directed toward P_L.

It does not seem possible for a person to spend 100 hours or 1000 hours, for example, reading popular fiction from many different authors, and experience a substantial gain in P_L, or A_L, or E_L. These gains would seem to be very unlikely because this type of reading involves relatively easy material and would contain few new spelling patterns. So, from the standpoint of rauding theory, it does not seem likely that this kind of increased print exposure—reading more light fiction—would increase P_L, or A_L, or R_L, or E_L.

The ART and the TRT, just described, have been used to conduct a great deal of research on print exposure during recent years. Therefore, it seemed important to critically examine the validity of these instruments.

The ART and the TRT are checklist tests which require individuals to remember the names of book authors and the titles of books. Higher scores on these tests no doubt will indicate higher print exposure but higher scores are also likely to reflect a higher verbal knowledge level—higher V_L—and higher verbal knowledge aptitude—higher g_v. That is, individuals who can correctly check more authors and titles are also likely to have more knowledge about books and authors, higher V_L, and be able to learn this verbal knowledge better—have higher g_v. Individuals with higher V_L are likely to correctly check more of the authors and titles whether or not they have read the correctly checked book; they are more likely to learn and remember authors and titles from conversations with people who have read the books, from seeing the book on a library shelf, and from seeing publicity about authors and books, whether or not the books have been read. Thus, the ART and the TRT measures are likely to be indicants of g_v and V_L as much as indicants of the number of popular books read. The more that these instruments measure g_v and V_L (not in-

volving reading), the less valid they are for being an indicant of print exposure, or an indicant of the amount of recreational reading done by an individual. This means that print exposure is confounded with g_v and V_L, so further investigation and confirmation would be needed to determine whether a high-scoring individual had high print exposure.

The validity of these instruments can be evaluated by their correlations with other more direct measures of recreational reading, and by their correlations with nonprint measures such as indicants of g_v and V_L. With respect to more direct measures of recreational reading or print exposure, Allen, Cipielewski, & Stanovich (1992) found that the ART correlated .52 with the amount of time engaged in book reading as indicated by daily diary records, for 63 fifth grade students. This correlation of .52 is a respectable validity coefficient, but it is not a high validity coefficient. With respect to nonprint measures, Allen, Cipielewski, & Stanovich found that the ART correlated .47 with an indicant of V_L (a nonreading, composite measure of general knowledge) for the same 63 fifth graders noted above. This correlation of the ART with a nonprint measure was almost as high as it correlated with a standardized reading comprehension test (.47 vs. .52), thus suggesting that the ART is measuring nonprint verbal knowledge as much as it is measuring print exposure.

In general, the validity of the ART and the TRT as measures of print exposure are suspect because they have not been found to correlate highly with direct measures of the volume of print exposure, and they have been found to correlate with nonprint measures of verbal knowledge about as high as they have correlated with direct measures of print exposure.

The most important way to evaluate the ART and TRT as indicants of print exposure is to examine the evidence relevant to whether print exposure as measured by these tests should be at Echelon 2, Echelon 3, or Echelon 4 in the causal model. This evidence will be examined next.

With respect to Echelon 2, is there evidence that the ART or the TRT can add to the prediction of indicants of E_L, after the variance in A_L and R_L has been accounted for? If these data exist, then it would constitute evidence that the ART and the TRT were measuring a construct that belonged at Echelon 2 in the causal model. Stanovich and Cunningham (1993) have collected relevant data. They administered the ART plus a similar Magazine Recognition Test (MRT) and a similar Newspaper Recognition Test (NRT) to 268 college students, along with an indicant of A_L (general knowledge) and an indicant of E_L (Nelson-Denny Reading Test-Comprehension). The ART combined with the two other measures of print exposure did not add to the prediction of the indicant of E_L after the indicant of A_L had been entered in a hierarchical regression analysis (added 0% to the predictable variance). Therefore, these data do not support the ART as a causal factor at Echelon 2.

With respect to Echelon 3, is there evidence that the ART and TRT are highly related to A_L, and can add to the prediction of A_L after the variance in V_L and P_L have been accounted for? In 1989, Stanovich and West found that

an indicant of A_L (measure of passage comprehension) correlated .36 with the ART, for 180 undergraduates. This is not a large correlation. Furthermore, the ART did not add substantially to the prediction of A_L after indicants of P_L (word identification and spelling) were entered in a hierarchical regression analysis (added 1%).

Later in 1991, A. E. Cunningham and Stanovich administered measures that provided indicants of V_L, P_L, and A_L. A reanalysis of their data revealed that the TRT did add 6% to the predictable variance in A_L after entering age plus V_L and P_L in a hierarchical regression analysis. However, the indicant of A_L was a vocabulary measure that involved the same response technique as the TRT—the real words were supposed to be checked in a list containing both real words and nonwords. This measure of A_L is of questionable validity as an indicant of A_L. It is also possible that the reason that 6% was added to the prediction was because the TRT was contributing variance unique to the response technique, that is, a checklist measure.

In 1993, Stanovich and Cunningham found that the ART plus two other print exposure measures in a composite correlated .85 with an indicant of A_L—which was also a composite of four checklist measures of general knowledge. On the surface, this result would seem to suggest that print exposure should be in Echelon 3 in the causal model because it correlated so highly with an indicant of A_L at Echelon 2. However, these data deserve closer scrutiny. These college students were likely to be advanced readers, given their description as coming from two large state universities—one of which was described as "one of the most selective public institutions in North America" (p. 212). Therefore, A_L and V_L are likely to be equal (see Chapter 17), so that the indicant of A_L in this research is also an indicant of V_L. Remember that the ART is also likely to be an indicant of V_L, as contended earlier. It seems likely that these purported measures of print exposure are measuring verbal knowledge as much as they are measuring print exposure, and that is why they correlated so highly with an indicant of A_L.

In 1996, Hall, Chiarello, and Edmondson administered a measure of print exposure (a combination of the ART, MRT, and NRT), an indicant of A_L (115 item multiple-choice test on cultural literacy), an indicant of g_v (SAT-Verbal), and an indicant of V_L (TV-exposure composite). In their results, it was found that the print exposure composite did not add a substantial amount of variance to the prediction of the indicant of A_L, after the indicants of g_v and V_L had been entered—only 2% added. This small amount of variance added to the prediction of A_L, after the variance attributable to g_v and a nonprint variable (TV-exposure composite) has been accounted for, does not support the case for this measure of print exposure belonging at Echelon 3.

Also with respect to Echelon 3, it is important to ask if the ART or the TRT adds to the prediction of R_L after the variance in P_L and C_s have been accounted for? In the 1989 study of Stanovich and West, noted earlier, the ART

did not add substantially to the prediction of R_L (reaction times to regular words) after the indicants of P_L had been entered into a hierarchical regression analysis (added 1%). These data do not support the addition of print exposure to Echelon 3 as a proximal cause of rate level at Echelon 2.

With respect to Echelon 4, it is important to ask if there evidence that the ART and the TRT are highly related to P_L? In 1989, Stanovich and West found that an indicant of P_L (a measure of word identification) correlated .50 with the ART (N = 180 undergraduate students). This correlation represents a large effect size and thereby supports print exposure as a proximal cause of P_L for college students; however, this is a moot point because P_L is purportedly no longer a causal factor affecting reading achievement for those students who are likely to have reached raudamaticity. Remember that P_L is a part of A_L according to Equations 7-2 and 7-4, so P_L and A_L should correlate highly for advanced readers, even though P_L is not a cause of A_L.

In 1990, A. E. Cunningham and Stanovich found that an indicant of P_L (word identification) correlated .37 with the TRT, for third and fourth graders. This correlation represents a moderate effect size and thereby provides some support for print exposure being a teaching/learning factor that affects P_L.

In 1993, A. E. Cunningham and Stanovich found that an indicant of P_L (word identification) correlated .64 with the TRT for a group of 26 first graders; this is a high correlation which seems to support volume of reading as a cause of P_L for beginning readers. However, it is quite possible that the TRT for first graders is more of a reading test, or a measure of A_L. That is, those students who can pronounce the words and recognize their meaning in the titles on the test were more likely to underline the actual titles of books, thus making the TRT an indicant of A_L.

These data relevant to the effects of print exposure upon P_L, A_L, R_L, and E_L are not conclusive. It seems to be at least equally plausible that higher P_L, A_L, R_L, and E_L are causing students to read more, or engage in more print exposure.

Summary of Theory

A high volume of reading is likely to result in higher reading achievement under some conditions. Whether or not a high volume of reading increases reading achievement, or E_L, depends primarily upon the relative difficulty of the material being read. If the material is relatively easy, $D_L < A_L$, then a high volume of reading will not increase reading achievement, because no new words will be encountered. If the material is at matched difficulty, $D_L = A_L$, then a high volume of reading will increase reading achievement because it is likely that a few new words will be encountered and eventually raudamatized.

If the material is relatively hard, then a high volume of reading cannot be recommended for beginning readers or intermediate readers because it will be slow and frustratingly difficult. However, this kind of hard reading is probably the main way that advanced readers can increase their reading achievement, or E_L.

Easy rauding, or time spent engaged in reading novels and other light fiction, should be considered as recreational reading, because a high volume of this kind of reading will not increase reading achievement, or E_L.

Summary of Evidence

Typical students in grades 3, 4, and 5 who spend 20 to 30 hours reading relatively easy books do not gain in reading achievement, or E_L (Carver & Leibert, 1995). There is no good evidence that sustained silent reading, SSR, in elementary school classrooms increases reading achievement, or E_L.

The recent evidence involving print exposure measured by author recognition checklists and title recognition checklists (e.g., Stanovich & Cunningham, 1993) has not been definitive with respect to whether higher scores represent a cause of higher reading achievement or whether higher reading achievement represents a cause of higher scores on these checklists.

Scores on an Author Recognition Test, ART, and a Title Recognition Test, TRT, (a) have not been shown to be highly related to time engaged in book reading (Allen, Cipielewski, & Stanovich, 1992), (b) have been shown to be substantially related to nonprint measures (Allen, Cipielewski, & Stanovich, 1992), (c) have been shown to add little or no variance to the prediction of E_L after entering indicants of A_L and R_L (Hall, Chiarello, & Edmondson, 1996, Stanovich & Cunningham, 1993), (d) have usually been shown to add little or nothing to the prediction of A_L and R_L, after measures of V_L, P_L, and C_s have been entered into the prediction (Hall, Chiarello, & Edmondson, 1996; Stanovich & West, 1989)—but there have been exceptions (A. E. Cunningham & Stanovich, 1991), and (e) have been found to correlate from around .35 to .65 with indicants of P_L (A. E. Cunningham & Stanovich, 1990, 1993; Stanovich & West, 1989).

In general, existing data do not support theory which holds that sustained silent reading, or a high volume of print exposure, increases reading achievement, or E_L. These data also do not support theory which holds that encouraging students to engage in high volumes of recreation reading will increase reading achievement, or E_L. Finally, these data are not definitive with respect to the conditions under which a high volume of reading will or will not increase reading achievement, because it is mostly correlational.

Implications

Experimental treatment studies need to be conducted (not correlational) which determine (a) whether higher amounts of recreational book reading causes higher P_L, higher A_L, and higher E_L, or (b) whether higher P_L, A_L, and E_L cause higher amounts of recreational book reading. We need to know if high achievers are more likely to find recreational book reading to be interesting and rewarding (easier, faster, and therefore more fun) so they engage in it more frequently, whereas low achievers in reading are more likely to find the reading of fiction to be boring and unrewarding (harder, slower, and more frustrating). We need to know if extra recreational book reading does in fact cause extra gain in reading achievement, because (a) the causal model holds that this kind of easy rauding will not increase reading achievement, or E_L, and (b) many teaching and learning activities are predicated on the assumption that this kind of easy rauding does increase reading achievement, or E_L.

Given the current status of theory and research, educators need to discontinue all sustained silent reading programs in middle grade classrooms until there is direct experimental evidence that SSR causes higher reading achievement; otherwise these programs should be regarded as recreational and the educational equivalent of recess for most students. High volumes of easy rauding should not be recommended for any student as a way to increase reading achievement.

Forget Me Nots

A high volume of reading relatively easy texts, such as reading light fiction for recreation, is not likely to increase reading achievement because no new words or concepts will be learned.