

The Goodman/Smith Hypothesis, the Input Hypothesis, the Comprehension Hypothesis, and the (Even Stronger) Case for Free Voluntary Reading  
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Historians of science are very interested in famous “doubles,” cases in which two independent workers appear to have come up with very similar breakthroughs at about the same time. Famous cases include the discovery of calculus (Newton and Leibnitz) and evolution (Darwin and Wallace).

For language and literacy education, our famous double is the hypothesis that we “learn to read by reading,” presented to the world by both Kenneth Goodman and Frank Smith in the 1960’s. (Many of Goodman’s works, including earlier papers, are collected in Flurkey and Xu, 2003; see also the collection in F. Smith, 1972, for early statements of this hypothesis.) The Goodman/Smith hypothesis claims that we do not learn to read by first learning to isolate sounds, then learning to pronounce letters, then pronounce words, and then move on to larger units. Rather, we learn to read by making sense of what is on the page, and our knowledge of phonemic awareness, phonics, and the ability to read lists of words in isolation is the result of learning to read by reading.

As Frank Smith has pointed out, there has been a confusion between cause and effect: We don’t need an extensive knowledge of phonics to learn to read; rather, a (subconscious) mastery of phonics is the result of reading. As we will see below, reading is also the source of most of our competence in literacy: It is the source of our reading ability, most of our vocabulary beyond the basics, our ability to handle complex aspects of grammar, much of our spelling ability, and our ability to write with an acceptable writing style.

Note that the Goodman/Smith hypothesis predicts that some kinds of information can help literacy development by making texts more comprehensible. This includes background knowledge, and some aspects of language. Occasionally, some consciously learned phonics rules can help by making texts more comprehensible. There are, however, severe limits on how much phonics can be consciously learned (F. Smith, 2004).

The “learn to read by reading” hypothesis is very similar to the Input Hypothesis, the claim that we acquire language, in general, when we understand it, that is, when we get “comprehensible input” (Krashen, 1981). Comprehensible input results in language acquisition, an unconscious “feel for correctness” in language, and the foundation for fluent language production.

It has also been hypothesized that there are affective prerequisites to language acquisition: For input to enter the “language acquisition device,” the acquirer needs to be in a low anxiety state, and needs to consider himself or herself to be a potential member of the group that speaks the language. Similarly, F. Smith (1988) has hypothesized that full development of literacy requires that the reader consider himself or herself to be the kind of person who reads and write: A member of “the literacy club.”

## **The Comprehension Hypothesis**

In recent years I have been referring to the Input Hypothesis and the Goodman/Smith hypothesis as one, as the Comprehension Hypothesis. Unifying the two makes explicit Kenneth Goodman's suggestion that "learning to read is natural": The process of learning to read is the same process used in language acquisition in general.

Current approaches: Anything but ...

The Comprehension Hypothesis makes the obvious prediction that actual reading is good for you. It is the only way to improve your reading and become literate. This view appears to be inconsistent with most approaches to literacy education today, approaches that seem, in fact, to say the opposite, with little time devoted (sometimes none) to reading itself, little effort made to encourage reading (eg. read-alouds), and little effort made to make books available. Curricula are instead filled with exercises designed to teach aspects of literacy that the Comprehension Hypothesis says are the results of reading.

There is, in fact, excitement about approaches that are very far removed from actual reading. I was once contacted by an elementary school principal in California who had the idea that roller skating might be a good way to improve literacy: He had read a report that claimed that poor readers did poorly on a movement test requiring balance, and thought that a full period devoted to roller skating might improve balance and thereby improve reading. I asked him if he had ever considered improving school and classroom libraries in his school, especially relevant in his situation because his school was in a high poverty area. He had never thought of this, but thought it was an interesting idea.

## **Free Voluntary Reading**

I will devote the rest of this paper to discussing what I am convinced is the most exciting area of research in language education: Free voluntary reading. The evidence I will review provides strong confirmation of the Comprehension Hypothesis and is of enormous practical importance.

Free voluntary reading is the kind of reading readers of this paper do all the time: Reading because you want to. Research showing the benefits of FVR is extensive, and is growing rapidly.

I will mention here some of the "classic" studies demonstrating the "power of reading," and present some of the new wave, studies of the impact of self-selected reading done by students of English as a foreign language in Asia, and the impact of reading on the development of the heritage language. This is followed by a brief review of studies showing what everybody seems to agree with, but few curricula take advantage of: wide recreational reading makes you smarter. And times being what they are, it is important to add one more section: The effects of the computer on reading.

## **Self-Selected Reading Research: The Classic Studies**

I have reviewed the research on in-school free reading programs in several places (Krashen, 2001, 2004) and have concluded that students participating in sustained silent reading and similar programs did as well as comparisons or better on tests of reading comprehension in 51 out of 53 comparisons. Studies that showed no difference between readers and comparisons were typically short-term studies; in those lasting longer than an academic year, those in reading group nearly always made better progress.

I present here just a few studies that demonstrate not only the validity of this approach, but also its universality – self-selected reading has been shown to be effective in a wide variety of situations.

### **Hooked on Books**

A seminal study that should be mentioned whenever free reading programs are discussed is the one that popularized free reading in the United States: Daniel Fader and Elton McNeil's *Hooked on Books: Program & Proof*. Fader and McNeil encouraged adolescent boys in reform school to read newspapers, magazines, and paperback books and to talk about their readings in class. After one year, the researchers discovered that the boys' reading comprehension scores on the Scholastic Achievement Test had increased by more than an entire grade level (1.3 years), twice as much as the scores of those students who didn't read for pleasure. Fader also observed the boys' behavior outside of class, noting that some of boys were reading their books while in the stands at basketball games.

### **The Fiji Island Study**

Elley and Mangubhai (1983) showed that in-school free reading has a powerful effect on second language acquirers. They studied fourth- and fifth-grade students of English as a foreign language in the Fiji Islands, where English is a required subject beginning at kindergarten and is taught for 30 minutes a day. The students were divided into three groups: one had the "audio-lingual method," a traditional language teaching method that emphasizes drill and repetition and heavy grammar instruction. A second group did only free reading for the entire 30 minutes period, and a third group did "shared reading ... a method of sharing a good book with a class, several times, in such a way that the students are read to by the teacher, as in a bedtime story. They then talk about the book, they read it together, they act out the story, they draw parts of it and write their own caption, they rewrite the story with different characters or events ..." (Elley, 1998, pp. 1-2). After two years, the free reading group and the shared reading group were far superior to the traditional group in tests of reading comprehension, writing, and grammar.

Shanahan and Beck (2006) have contested these results, pointing out that there was attrition over the two years of the study, "but the author does not report what was done, if anything, to account for it" (p 441). Table 1 presents the attrition data from the Fiji Island study:

Table 1: Number of subjects in the Fiji Island Study

Cohort 1	pretest	2 yrs later	% attrition
shared book	81	66	81%
silent reading	98	70	71%
audio-lingual	121	91	75%
Cohort 2	pretest	2 yrs later	% attrition
shared book	105	91	87%
silent reading	96	91	95%
audio-lingual	113	91	80.5%

Cohort 1: began in grade 4; Cohort 2: began in grade 5

Chi-square analysis confirms that the three groups did not differ significantly with respect to attrition. (for grade 4, chi-square = .337, for grade 5, chi-square = .575,  $df = 2$ , ns; to reach significance for  $df = 2$ , a chi square of 5.99 is needed). Also, the attrition rate is not high; it could easily be the result of mobility, which is considerable in schools in the US (see e.g. Rosen, 2005), or may simply be the result of some children being absent on the day the tests were given two years later. The important fact is that attrition was similar in all three groups.

Shanahan and Beck also fault the Fiji Island study because “the tests were designed specifically for the study, and no evidence of their validity or reliability is reported” (p. 441). In Elley (1991), the article Shanahan cited, it is in fact stated that the tests were “newly developed” and some were “tailor-made.” But in the longer and more detailed paper (Elley and Mangubhai, 1983, not cited by Shanahan and Beck), reliability and validity data is reported for these tests, and the levels are obviously acceptable.

Finally, Shanahan and Beck stated that it is not possible to tell whether the pretest was in English or the students’ native language. This is not stated, but it is obvious that the tests were in English. Some of the schools were Fijian and some were Indian, which meant students spoke Bau Fijian, and Hindustani, (the main language spoken by Indo-Fijians); there was no mention of tests given in these languages. To make sure, I contacted the co-author of the longer publication describing the Fiji Island study, Francis Mangubhai: He confirmed that the pretests were, in fact, given in English.

In 1991, Elley replicated these findings in Singapore. In three studies involving a total of approximately 3,000 children and lasting from one to three years, children who followed a program that was a combination of shared book experience, language experience, and free reading (“book flood”), outperformed traditionally taught students on tests of reading comprehension and vocabulary, as well as on other measures of literacy.

The “Singapore” paper also discusses the reactions of adults to the reading program. There were two concerns: Some adults worried how well the readers would do on tests. The results of the study, however, confirm that they do very well on tests, better than comparison students who did traditional instruction. I think they do well on tests because they can’t help it: Because they have read so much, many of the conventions of writing, the grammar and the vocabulary have been “acquired,” that is, subconsciously absorbed. When this happens, using

this competence is automatic and involuntary. In fact, I think it is fair to say that well-read people nearly always write acceptably well, and find it very difficult to write poorly. (Teachers can only write poorly after they read a pile of student papers, which confirms that writing style comes from reading.)

Another concern was that the children in the reading sections were “merely enjoying themselves.” The attitude that acquisition of language and the development of literacy must be painful is unfortunately wide-spread.

### Goosebumps Summer

We turn now to California and the San Joaquin Valley, where Fay Shin (2001) examined the impact of a summer free reading program among sixth graders with low reading proficiency. Shin devoted a great deal of her grant money to two items: Comic books and Goosebumps. The participants did self-selected reading for two hours a day, had time to discuss books with peers, had individual conferences with teachers, and participated in group discussion of selected novels, such as *The Island of the Blue Dolphins*. Comparison children followed a standard language arts curriculum during the summer. The groups made equivalent gains over the summer a vocabulary test, but the children in the reading group did far better on the reading comprehension measure, gaining well over one year after only five and a half weeks of reading. They also gained about five months on the Altos test of reading comprehension and vocabulary, while comparisons declined slightly.

### The Retakers Study

Beniko Mason deserves a great deal of the credit for introducing in-class free reading in English as a foreign language classes in Japan. In one study (included in Mason and Krashen, 1997), Mason was asked to teach a required first year university English class consisting of extremely reluctant students, students who had previously failed English. After a very short time, Mason concluded that the regular curriculum was not going to work with these “retakers”: She discarded the standard syllabus and introduced “extensive reading” instead. The entire class was devoted to reading graded readers, both in class and as homework. (By the end of the semester, some students had reached the point where easy authentic reading was comprehensible for them.) Students were asked only to write short synopses of what they read and keep a diary in Japanese, recording their reactions to the reading they were doing. Students in comparison classes followed the traditional grammar and translation-based curriculum.

Even though the extensive readers started the semester with much lower test scores in English reading, they made larger gains than the traditional group and nearly caught up with them by the end of the semester, moving from 22.6 points on a cloze test to 30, while the comparisons moved from 31.4 to 33.1. Also, they liked this English class much better than those they had taken before, and many of the once reluctant students became eager readers.

We turn now to the “new wave” of studies from Asia. These studies, like Mason’s Retaker study and the Elley studies, deal with English as a foreign language, situations in which little English is encountered outside of the classroom, which makes for a better controlled study.

### **The New Wave: The TOEFL study**

Mason’s recent study (Mason, 2006) has profound practical implications for thousands of international students. In this study, six second language acquirers in Japan, all former students of Mason’s who had studied English as a foreign language in classes that included free voluntary reading of graded readers, agreed to engage in a recreational reading program to prepare for the TOEFL, a test of English that students interesting studying at American universities take.

Each of the five chose somewhat different reading material, according to their own interests, with favorite authors including Sidney Sheldon, Paulo Coelho, Judy Blume, and Bertice Berry. In addition, several continued to read graded readers.

Subjects read for different lengths of time, between one to four months, and took alternate forms of the TOEFL test before and after doing the reading. The average gain was 3.5 points per week on the overall test, and improvement was seen on all three components, listening (2.2 points), grammar (3.6 points), and reading (4.6 points). This gain is about the same as one sees with a full time TOEFL preparation class given in the United States and is consistent with Gradman and Hanania’s results, presented earlier, showing that reading is an excellent predictor of TOEFL performance (see also Gradman and Hanania, 1991; Constantino, Lee, Cho and Krashen, 1997).

### **The New Wave: University Students in Taiwan**

Several scholars in Taiwan have contributed to this area of research, publishing both correlational and experimental studies.

S.Y. Lee (2005a) used structural equation modeling to see which of several activities was the best predictor of scores on a test of English writing for university students in Taiwan. Lee examined the amount of free reading in English the students said they did, the amount of English writing they said they did outside of school, and how intently they believed that reading and writing instruction was helpful. Reading was the clear winner. In fact, it was the only significant predictor of writing scores.

In two different studies, each lasting one academic year, students in classes that set aside time for reading or that encouraged reading outside of class did better than those in several different comparison classes (S.Y. Lee, 2005b, 2006; Liu, 2005; K. Smith, 2006).

The results of Lee (2005b, 2006) are presented in table 2, comparing the impact of three different treatments: regular instruction (the required Freshman English classes all college freshmen take in Taiwan), a reading experience in which students read mostly assigned readings during the second semester, novels selected by the instructor, and a treatment in

which students had free choice. Those doing assigned reading did better than comparisons in vocabulary; free choice, however, resulted in better gains in both vocabulary and reading comprehension, as measured by a cloze test.

Table 2: Gains after one year of extensive reading (Lee, 2005b, 2006)

	Comparison	Assigned	Self-Selected
Vocabulary	7.3	14.4	17
Cloze	4.9	5	14.5

In Liu’s study, students in the reading class did their free reading outside of class: Class-time was largely devoted to the study of rhetoric and linguistics, with lectures presented in the students’ first language, Mandarin, with some time set aside for reading and book selection. Table 3 presents data from two different years and three different reading groups. Liu’s study has the advantage of multiple comparison groups, important because Freshman English is taught in different ways, depending on the instructor. The reading groups are typically better; at worst, they do just as well as comparisons (in only one case, year 2 cloze test performance).

Table 3: Gains after one year of extensive reading (Liu, 2005)

year 1	comp 1	comp 2	comp 3	reading 1	reading 2
vocab	9.6	6.8	5.8	11.2	23.3
cloze	5	4.9	4.1	17.4	13.7

year 2	comp 1	comp 2	reading 1
vocab	11.1	4.6	13.2
cloze	1.7	3.4	4.3

K. Smith (2006) is a one-year study of high school students in Taiwan who were divided into three groups: One group simply did self-selected reading in English, a “pure” reading group. A second group had to write book reports: The report consisted of a summary and evaluation of the book, and recommendations for future readers. Students had to write one report every two weeks. A third group did the regular “intensive reading” course in which they read short paragraphs, answered comprehension questions, and studied grammar and vocabulary. The pure reading group did the best, and the extra book reports clearly didn’t help (tables 4 and 5)

Table 4: Results of the College Students English Proficiency Test (Smith, 2006).

	Intensive reading	Reading + book report	Reading only
pre	135.1 (31.8)	132.6 (32.8)	129.5 (32.9)
post	185.8 (40.3)	181.5 (40.4)	192.8 (45.1)
gain scores	50.7 (30.5)	49 (26.2)	63.3 (33.4)

Mean scores (standard deviation in parentheses). Test covers listening, reading and “usage”

Table 5: Cloze test results (Smith, 2006)

	Intensive reading	Reading + book report	Reading only
pre	23.9 (8.5)	23.0 (9.1)	22.3 (8)
post	34.8 (7.9)	33.7 (9.7)	36.7 (7.8)
gain scores	11.1 (6.6)	10.7 (6.3)	14.2 (6.7)

Mean scores (standard deviation in parentheses).

Smith also provided data on the gains made each semester. Interestingly, the pure reading group's superior progress came only in the first semester, which is an unusual finding – previous research has shown that longer-term programs (more than one academic year) are more successful than short-term programs (Krashen, 2004).

Table 6: Gains after the first and second semester (Smith, 2006)

	first semester gain	second semester gain
IR	3.3 (7.4)	7.68 (4.9)
ER+	3.9 (7.1)	6.74 (5.2)
ER ONLY	7.56 (6.8)	6.68 (5.4)

### **The New Wave: EFL for Children in Korea**

In studies done in Korea, children in EFL classes that included reading interesting stories from the internet gained significantly more in English than comparisons did (Cho and Kim, 2004). These results are remarkable, considering that the study lasted only 14 weeks.

In another, EFL elementary school children did classroom activities related to reading newspapers written for EFL students. Nearly all those in the newspaper class voluntarily read the newspapers in their free time at school, and the class made significantly better gains in English than a comparison group (Cho and Kim, 2005). In both studies, readers were more enthusiastic about English than were comparison students in traditional classes, which may be the most important result, because it suggests that the children will continue to read in English.

### **A Brief Case History**

Clearly in agreement with the research reported here, Richard Wright credits reading with providing his development as a writer: “I wanted to write and I did not even know the English language. I bought English grammars and found them dull. I felt I was getting a better sense of the language from novels than from grammars” (Wright, 1966; p. 275).

### **Reading in the Heritage Language**

For those who grow up in homes in which another language is used, there are well-established benefits for developing the language of the home, or heritage language, in addition to acquiring high levels of proficiency in English. The benefits include practical,



job-related advantages, better communication with elders (Wong-Fillmore, 1991; Cho, 2001), as well as cognitive advantages: Bilinguals are better at solving problems that require ignoring irrelevant information and that require focusing just on important information; they have, in other words, superior “executive control.” (Bialystok, Craik, Klein, and Viswanathan, 2004).

Several studies suggest that a clear path to high levels of bilingualism is reading for pleasure in the heritage language.

Tse (2001) studied those who maintained unusually high levels of competence in their heritage language, despite spending very little time in the country where the heritage language was spoken. All had access to reading materials in the heritage language, and nearly all developed an interest in reading in the language for pleasure.

Cho and Krashen (2000) found four independent predictors of heritage language competence among second generation Korean heritage language speakers, all related to comprehensible input: parental use of the language, trips to Korea, TV watching, and, of great interest to us here, reading.

McQuillan (1998) reported that Spanish for native speaker classes at the university level that emphasized pleasure reading and other forms of comprehensible input resulted in more interest in reading in Spanish after the semester ended, as well as greater development of Spanish vocabulary.

### **Reading Makes You Smarter.**

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A scattered but impressive range of studies confirms that reading makes you smarter: Those who read more, know more about a wide range of topics.

Simonton (1988) summarized a number of studies of the development of creativity and concluded that “omnivorous reading in childhood and adolescence correlates positively with ultimate adult success” (Simonton, 1988, p. 11). Emery and Csikszentmihalyi (1982) compared 15 men of blue-collar background who became college professors with 15 men of very similar background who grew up to become blue-collar workers. The future professors lived in a much more print-rich environment and did far more reading when they were young. A good example of the impact of reading is Malcolm X, who specifically gave reading the credit for his education: “Not long ago, an English writer telephoned me from London, asking questions. One was, ‘What’s your alma mater?’ I told him, ‘Books’” (El-Shabbaz, 1964, p. 179).

Stanovich and colleagues measured reading volume using the Author Recognition Test, in which subjects indicate whether they recognize the names of authors on a list. Their studies have confirmed that those who do better on these tests have read more, and show higher performance on tests of literacy. They also know more about literature and history (Stanovich and Cunningham (1992), science and social studies (Stanovich and Cunningham, 1993), have

more “cultural literacy” (West, Stanovich, and Mitchell, 1993) and even have more “practical knowledge” (Stanovich and Cunningham, 1993).

A recent contribution to this area of research is Filback and Krashen (2002), who reported that among Christians, those who reported more self-initiated reading of bible had more knowledge of the bible than those who did less reading. More formal bible study, however, was not related to more knowledge of the bible.

### **What About the Computer?**

Efforts to use the computer to improve reading ability have not been successful (Krashen, 1996). For example, children enjoy reading interactive books of the screen, books in which readers can click to characteristics to talk, to turn pages, and to have the story read, but the thrill wears off quickly: After five books, children click only to turn pages (Chu, 1995). Despite aggressive promotion, IBM’s Write to Read did not produce results better than typical language arts programs (Krendl and Williams, 1990).

Hurd, Dixon and Oldham (2006) evaluated the impact of money spent on books and money spent on technology on performance on national tests (English, Math and Science combined) taken by 11 year olds in England, controlling for socio-economic status, teacher/pupil ratio, and percentage of students with special educational needs. The best predictor of test score performance was the amount of money the school spent on books per pupil (this includes all books, including classroom and school libraries).

For each 100 pounds spent per pupil on books, the Hurd et. al. analysis predicted a 1.5% increase in test scores (the average spent currently is 16 pounds per pupil). In contrast, the effect of spending money on computers is only half as effective in raising test scores. Hurd et. al. note that according to current school budgets, twice as much is spent on technology as is spent on books. For achievement in general, however, books appear to be a better investment than technology.

### **Free voluntary web-surfing?**

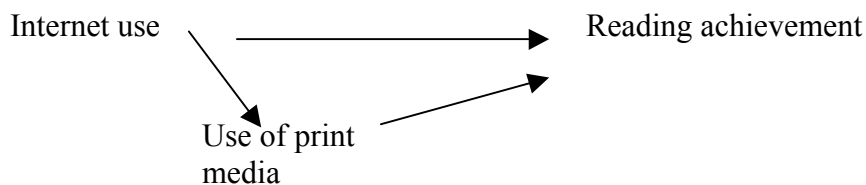
The computer may, nevertheless, be of value in boosting literacy, depending on how it is used, and the best way of using it may be the most obvious. A recent study suggests that “free voluntary web-surfing” may be good for literacy development. Jackson, von Eye, Biocca, Barbatsis, Zhao and Fitzgerald (2006) provided computers with internet access to 140 children (ages 10-18, but mostly between 12-14) from low-income families. Jackson et. al. reported that more internet use resulted in improved reading, as reflected by grades and standardized tests. The improvements were present after six months of internet use for test scores and after one year for grades. There was no impact on mathematics test scores, and the data did not support the hypothesis that better readers used the internet more; rather, internet use improved reading.

Jackson et. al. (2006) point out that “web pages are heavily text based” (p. 433), and suggest that it was the self-motivated reading of these texts that was the cause of the gains in reading.

de Haan and Huysmans, 2004) reported, however, that for adolescents in the Netherlands, greater use of the internet is modestly positively correlated with use of print media ( $r = .31$ ), suggesting that internet use leads to more reading off the computer, which in turn may be responsible for growth in reading.

A logical study would be to determine the existence of the relationships (regression coefficients) in the model presented in figure 1. Both reading from the internet and free voluntary reading stimulated by internet use may be directly related to reading achievement or the effect of internet use might be indirect, with only reading print media directly relating to reading achievement. (In the case of low-income children, however, it is doubtful that they had much access to print media; see Neuman and Celano, 2001).

Figure one: Hypothesized relationships among internet use, free reading (use of print media), and reading achievement

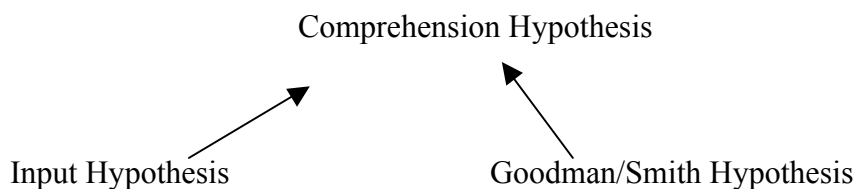


An obvious gap in the research, as Jackson and colleagues note, is that only “time on the internet” was considered as a predictor, with no attempt made to determine the impact of different kinds of internet use (e.g. blogs, reading the news, games, etc.).

## Conclusions

The Comprehension Hypothesis (figure 2) unites the Input Hypothesis, developed originally for language acquisition, and the Goodman/Smith hypothesis that we learn to read by reading.

Figure two: The Comprehension Hypothesis



The Comprehension Hypothesis claims that both language and literacy development are the result of the comprehension of messages. Full acquisition, in both cases, requires that the acquirer considers himself or herself to be a potential member of the group that uses the language or writing style. My claim is that Comprehension Hypothesis holds for first and second language acquisition, oral and written language, children, teenagers and adults. Thus, “learning to read is natural” (Goodman and Goodman, 1979).

Perhaps the most common counterargument to the claim that learning to read is natural is the fact that not all cultures have literacy. True. But the Comprehension Hypothesis states only that given comprehensible and interesting text, all children will learn to read. The very high levels of literacy seen in many countries is testimony that this prediction is correct; when reading material is available, nearly everybody learns to read at least a basic level.

### Consequences of comprehensible input

The “other side” of the Comprehension Hypothesis is that the components of language, vocabulary, grammar, spelling, phonics, etc are the result of language acquisition, the result of getting comprehensible input. As noted earlier, there is a profound difference between the Comprehension Hypothesis and “skill-building” views of language and literacy development, a completely opposite view of cause and effect. Skill-builders assume that we must first consciously learn the components of language, and only after they are mastered can we actually use language, i.e. have conversations and read books.

Thus, skill-building is a delayed gratification approach to learning. The Comprehension Hypothesis offers pleasure now, the pleasure of having conversations, reading good books, and hearing stories. The Comprehension Hypothesis says that we don’t have to wait: We deserve pleasure now, and in accepting the pleasure in reading and in using language, we are taking the optimal path, in fact the only path, to language acquisition and literacy development. The path of pain does not work in language and literacy development: There is only the path of pleasure.

Postscript: This is not to say that “if it feels good it is good for you.” The Comprehension Hypothesis says, rather, that if an activity is good for literacy, it will be perceived to be pleasant, a more conservative position.

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