

The Power of Story in SLA: Insights from Research

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Nearly all people enjoy hearing stories. Coincidentally, this pleasant activity is profoundly beneficial. This paper firstly presents evidence from the brain research and neural science to show that our brain comprehends the world in story form even before birth and that story is the most efficient means to teach and to learn. Then I will argue how it is so in the field of second language acquisition. Corpus studies have demonstrated that stories purely written for sheer enjoyment are the best materials for language and literacy acquisition for acquirers of all levels. Hearing stories has also been found to be in good partnership with independent, self-selected, pleasure reading that leads to effective language acquisition, which in turn results in higher level, more focused, critical reading for problem solving. An even more magical power of story in the form of fiction is its impact on building readers' empathy, honing their Theory of Mind (ToM), and creating optimal experiences as flow. The power of stories and using that power in language education, therefore, cannot be treated slightly.

Keywords: story structure, brain and neural science, fiction reading,
language acquisition

INTRODUCTION

I read to my two children since day one until they were in fifth or sixth grade, personally practicing what I believed in bringing up my own children, feeding them with a regular, daily diet of stories. The children's growth in language acquisition was the lens through which I developed a close understanding of language education in Taiwan. Their school experience and my teaching and research experiences have profoundly influenced my research and have revealed to me what is lacking in EFL programs at school.

I have focused on three aspects related to EFL students at different stages: (1) how storytelling contributes to vocabulary acquisition, verbal expression, and their attitude toward reading; (2) what materials are more conducive to English language development; (3) what conditions lead to higher motivation to read, especially among high school students.

These three aspects all point to the conclusion that *story* is the primal course of learning during the school years, when practiced in the right way. There is, however, an unfortunate tug of war between what school does and what empirical research findings suggest should be done. The major problem is the test-oriented and textbook-based syllabus, which does not engage children

in the meaning-making process and thus smothers children's interest and motivation.

Ten years ago, I said this in a presentation: “[T]he problem is that we in Taiwan do not have a clear conception of what constitutes a successful language acquisition program and what makes literacy instruction effective.” (Lee, 2008).

Ten years later, the war is still raging. My approach is to continue arguing for the value of story with even more evidence from a wider array of research using more advanced empirical methods and imaging technology, such as brain and neural science, corpus analysis, cognitive psychology, and the usual research on language teaching and acquisition. Research findings from different realms converge, reaching the same conclusion: it is *story* that makes the major contribution to our abilities in comprehension, logical thinking, literacy and language mastery, writing, memory, creating meaning and understanding, and building a sense of community and involvement (Haven, 2007, p. 89-90). I have now even more confidence in the power of story on language acquisition and all its crucially relevant corollaries.

WHY STORY?

Story Predates Language

This episode has been playing in my mind for years: I was reading *The Giving Tree* by Shel Silverstein to my 4-year-old son, Calvin, in English. I flipped the pages and just read, occasionally pointing to the pictures that illustrated the sentences:

*“There was a tree...
And she loved a little boy.
And every day the boy would come
And he would gather her leaves
And make them into crowns and play king of the forest...
And the boy loved the tree...
But time went by...
And the tree was often alone.”*

But each time the boy came back, the tree was happy and wanted to give something to satisfy the boy's request, until one day the boy cut off the very last thing the tree had, the tree trunk, to make a boat to sail away.

“The tree was happy...but not really.”

The boy finally came back again many years later and the tree felt sorry that she had no more to offer, *“my apples are gone; my branches are gone; my trunk is gone...”*

But now the boy was an old and tired man. All he needed was a “*quiet place to sit and rest.*”

“‘Well,’ said the tree, straightening herself up as she could, ‘well, an old stump is good for sitting and resting. Come, Boy, sit down, sit down and rest.’ And the boy did. The End.”

What chemistry was there in this story that made my son cry after hearing my telling? A four-year-old EFL boy was not highly proficient in English, nor was he able to discuss the metaphorical relationship between a talking tree and the boy, and not much explanation or translation was offered to interrupt the flow of our reading. What we had was a picture book, a mother’s voice, and a corner on the floor for us to snuggle next to each other. He still remembers that book, the story structure, and of course the story.

The answer to this mystery is this profound idea: Story predates language, and language is created to describe story (Nelson, 2003; Plotkin, 1982). According to evolutionary biology, humans began to read and write only a few hundred years ago, written communication began 6 or 7,000 years ago, and expository and argumentative forms of texts emerged around 5,000 years ago. There has, however, been 100,000 years of storytelling in human history (Haven, 2007). It seems to be the case that human brain has been hardwired to think and make sense of the world in the form or structure of stories (Haven, 2007, p. 24).

Calvin may not have fully understood the language used in the story, but he experienced the emotions the story was delivering in his brain, fostering the connections among brain neurons that made the comprehension of the words, images, and the whole story not only easier, but deep and profound. Secondly, research shows that “emotional engagement” makes information stored in story form more easily remembered (Mallan, 1997) and activates the brain more (Neimark, 2004). Emotion is the element imbedded in the story that makes the story successful.

Brain Development

Researchers contend that parents can take advantage of our predisposition for stories reading to their children:

“Things that a child experiences become part of his mental architecture, laid down in the neural connections that are retained. Connections that are not reinforced by stimuli from the outside world are pruned away, dead branches that no longer flower” (Kotulak, 1999).

This happens during shared reading between parents and children. When parents read to children, it builds children's ability to understand the world, to develop common sense, and overall knowledge that makes the world more comprehensible, which in turn helps children think better, to express better, and to perform better in many aspects of life. Johnson (1987), after investigating storytelling and children's responses, maintained that,

“Our earliest encounter with explanation comes in the form of stories told to us by our parents. From the beginning of our language acquisition, we must learn how to construct our own story fragments in response to our parents’ questioning of our actions. (‘How did that happen?’ ‘What have you done?’ ‘Where are you going?’) For children, to explain is to tell the right story that is appropriate to the situation, one that has a chance of successfully answering the questions put to them.” (cited in Haven, 2007, p. 26)

Therefore, children's development depends enormously on the environment shaped by experienced members around, e.g. parents, teachers, peers, or care givers. Collecting the findings from brain research, OECD (2007) reported that providing children an environment conducive to developing and improving brain function is fundamental in nurturing a child. Research has found that the center of our brain “is the set of structures known as the limbic system, a.k.a. the “emotional brain,” which is responsible to “re-sculpt” neural tissue because of the experience of learning new things, which then stimulates the development of positive emotions. It reports that

“one of the most powerful triggers that motivates people to learn is the illumination that comes with the grasp of new concepts—the brain responds very well to this. A primary goal of early education should be to ensure that children have this experience of ‘enlightenment’ as early as possible and become aware of just how pleasurable learning can be” (p. 2).

Now the puzzles of learning seem clearer and clearer. *If* our brains should be properly developed through constant learning of new concepts, and we have long ago been hard wired to learn things in story structure, and stories that carry emotional engagement work best for human learning, *then* we arrive at a simple but very profound implication for education: we *learn and communicate knowledge through stories*. We cannot deprive future generations of this opportunity, which is their birthright.

Learning and Communicating through Story Structure

Following the above arguments, story is a robust way and probably the best way to structure or organize information. It is

“a system of informational elements that most effectively create the essential context and relevance that engage receivers and enhance memory and the creation of meaning” (Haven, 2007, p. 15).

Very plausibly, story is the most effective and efficient way to teach, to learn, to motivate, and to communicate, for it conforms well with what our brain is designed or wired to do best. Researchers concluded that *“experiences NOT framed into story suffer loss in memory”* (Mandler, 1984). A number of case histories from a variety of areas (e.g., biology, music, management) confirm that teaching in story form makes learning more interesting, motivating, and more efficient, and knowledge is retained longer and recalled better (Haven, 2007). In addition, story has been widely used in many professional domains such as organizational management and leadership, business marketing, clinical therapy, and science communication.

In business organizations, for example, story and storytelling have been used to encourage more intellectual, constructive, and friendlier conversations (Denning, 2001) and create “a feeling of community and pride within the company (Silverman, 2006). And, because “human memory is story-based (Schank, 1999, cited in Woodside, 2010), story is without doubt crucial when promoting branding and improving marketing (Woodside, 2010).

“A story is useful because it comes with many indices (i. e., touch points to the lives of listeners/viewers or to others that cause implicit and/or explicit awareness and emotional connection/understanding in the minds of listeners/viewers)” (p. 532).

Stories touch children’s lives in the same way.

While various domains of expertise have recognized the impact of story structure in enhancing communication and knowledge sharing, language acquisition researchers are reserved: “Pleasure reading has its valuable place, and while it may sound like a desirable goal for literacy experiences and instruction, the conditions for such reading do not always present themselves in real-world contexts, especially in academia and the workplace” (Gardner, 2004, p. 29).

I would like to argue that the situation may be exactly the opposite. The research consistently shows that stories have a powerful effect, including vocabulary acquisition, acquisition of grammatical competence, learning vivid and precise expressions, and advancing one’s logical and critical thinking

abilities while being absorbed in a compelling and engaging story. We must make sure that the conditions for pleasure reading are present for all children.

Gardner's pessimism has been disconfirmed by Mar and Rain (2015) who found that reading narratives is a robust and stronger predictor than non-fiction reading for various measures of verbal ability. Therefore, taking the time away from capturing the wholeness of a story to focus instead on the form and specific vocabulary may neither be wise, nor successful (Krashen, 2004; Krashen, Mason, & Smith, 2014; Mason & Krashen, 2004; Smith, 2006). We need a knowledge of story structure (Rumelhart, 1980) to untangle and interpret new stories. This can only be acquired by listening to or reading many stories.

Evidence of Our Brain Reacting Actively to Stories

Until recently, observing what is happening in our brain was impossible. Now advanced medical imaging technology has confirmed that story listening and fiction reading enhance our brain activation. Hutton et al. conducted a series of related studies using an fMRI machine (functioning magnetic resonance images). One study (2017) showed the quality of parent-child-shared reading correlated significantly with children's brain activation in the regions supporting complex language processing, working memory functioning, and social-emotional processing among at-risk preschoolers. The results of this study strongly suggest that the quality of reading environment is the crucial factor that helps a child's brain development.

Adults have similar reactions to fiction reading. An interdisciplinary research team conducted a study using fMRI with a group of doctoral candidates reading a Jane Austen novel (Goldman, 2012). The team predicted that there would be differences in brain activation between reading for pleasure and close reading for the purpose of literary analysis.

The preliminary finding was that there was increased blood flow to the brain areas far beyond those normally activated when paying close attention to a particular task. Blood flow also increased when reading for pleasure, but in different areas. The researchers concluded that different reading styles may generate distinct activated patterns in the brain that are "far more complex than just work and play." In other words, "pleasure reading" of books with thought-provoking plots, with struggles and conflicts, a character's journey in overcoming them, and the simulations of a social reality that possesses some relevancy to the reader stimulate powerful emotions in the reader, resulting in strong neurological activation. "Pleasure reading" is serious business.

As Lyon (2003) puts it, "*The universality of human suffering and struggle compels your reader—a stranger—to invest in your story.*" Isn't that what Jane Austen's works were all about? Research has confirmed that these emotional reflection and reflexivity are important elements to build our Theory of Mind that can make us better persons!

FICTION READING MAKES YOU A BETTER PERSON?

Research tells us that stories have a substantial effect on improving readers' social abilities, such as understanding others' perspectives, improving the sense of empathy, and reducing prejudice, which are the characteristics included in the Theory of Mind. In Kidd and Castano's (2013) five experiments using an author recognition test (to measure the exposure to fiction reading), a Reading the Mind in the Eye Test (RMET), and face-recognition test (DANVA2-AF), with the latter two measuring readers' ability to tell emotions, fiction readers demonstrated better consciousness of others' emotions than non-fiction readers. Van Kuijk et al. (2018) replicated Kidd and Castano's results closely, finding that literary fiction reading improved ToM better than reading popular fiction.

Different types of stories appear to result in different reactions. "*In romances, the question is whether someone might be a suitable sexual partner; in thrillers, a central issue is what might be going on in the mind of the antagonist*" (Oatley, 2016, p. 620). These results have interesting implications for material selection for teen readers or older, and might be important clues to understand our students' minds.

The *Harry Potter* series has appealed to both children and adults and has been found to enhance readers' empathy to out-groups. Vezzali et al. (2015) found that Italian children who identified with Harry Potter, a positive character representing courage, wisdom, justice and righteousness, improved their attitudes toward immigrants. High school students reading *Harry Potter* were found to improve their attitudes toward homosexuals, while improved attitudes toward refugees was found among university students.

When our education is pushing for more non-fiction or expository reading, Mar et al. found its association with loneliness and social isolation (2009), definitely not a healthy state of mind for effective learning. This line of research is both encouraging, i. e., finding a strong impact of fiction reading on learning and character building, and alarmingly informative as well, i. e., showing the negative effects of over emphasis on non-fiction.

FOCUSSING LANGUAGE EDUCATION ON STORY

The above review shows the intimate relationship among strengthening our brain neuron activity and developing a better Theory of Mind and learning in various subjects through story.

Conceivably, stories are the bedrock, the soil, the nutrition, on which all aspects of a language can be acquired, not only vocabulary, grammar, reading and writing, but also logical and critical thinking, creativity and imagination, all important elements that are key to learning to read more challenging material. The following review presents selected studies confirming the power of story (including story listening and storytelling) as a means of teaching and

motivating, and also to demonstrate how EFL education can be transformed by taking this route.

Storytelling for Elementary School Pupils

As Plato put it, “*Compulsory physical exercise does no harm to the body, but compulsory learning never sticks in the mind*” (*The Republic*, Part VIII, book 7). Research in EFL teaching for children that compares the effects of storytelling with compulsory instruction clearly supports a story-only approach (Elley, 1989, 1991; Elley & Manghubai, 1983; Gao & Lee, 2014, 2016; Wang & Lee, 2007); When direct instruction does show a positive effect, it is weak and short-lived, or “fragile.” (Krashen, 2004). In addition, it has been argued that language acquisition requires mastery of systems that are so large and complex that direct teaching with a focus on individual items cannot possibly work (Smith, 1988). There are too many words to be learned one at a time, too many complex rules of grammar and spelling, many of which have not yet been described by researchers (Smith, 1988).

Wang and Lee’s (2007) qualitative study was different from most because it was longitudinal, lasting almost four years, beginning with the first author telling stories from wordless picture books and eventually reading a young adult novel aloud to a group of primary pupils, from their first grade to the fourth. There were no follow-up comprehension checks, no role-play activities, and no games, but only “book talks” and books spread out on the tables for children to read on their own after the read-aloud. A total of 65 storybooks (e.g., *No David*, *Little Critter*, *Clifford*, etc.) plus the very last book, *Marvin Redpost: Kidnapped at Birth*, a young adult novel, were read. Marvin Redpost was 9 years old, about the same age as Wang’s students in year 4. The children reacted excitedly during each story time (<https://www.youtube.com/watch?v=IMPQGZQ0k98>, 2007) and used the phrases and expressions in the stories with one another during recess. The children were so immersed in the story that they wanted to try reading it on their own, confirming the “natural partnership” between storytelling and independent reading (Trelease, 2013). In our experience, this level of enthusiasm is rarely seen in any public school in Taiwan. This result was empirically confirmed by Cho and Choi (2008) in Korea.

Similar results were reported in studies done ten years later. Gao and Lee (2014) compared three approaches: story-only, story-with-word focus, and story-plus-supplementary activities, e.g., review, comprehension questions, etc., lasting for three weeks. Three stories were read for the first two groups and only one for the last group. This was a pre-post design, and a delayed test was administered. The latter two approaches obtained the highest scores on the post and delayed tests. When, however, Mason’s method of measuring efficiency test (2005) was applied here, the story plus supplementary group acquired the least number of words per minute.

The story-with-word focus group had an efficiency rate three times the story-only group, and even eight times the supplementary group. The interesting phenomenon was that the story-only group made steady growth even on the delayed test. We hypothesized that with a longer duration and with providing more stories, the story-only group would outperform the other two groups in terms of the acquisition efficiency rate.

We confirmed this hypothesis in our 2016 study with a 9-week design (Gao & Lee, 2016), with the story-only group obtaining an efficiency rate triple the size of the supplementary group and twice the size of the word-focus group.

The answer may lie in brain research findings (emotional engagement and relevancy) and the Comprehension and Compelling Hypothesis proposed by Krashen (2011) who argues that we acquire language by understanding what we read and hear, and that for optimal acquisition the input must be so interesting that we forget that we are reading or listening to a foreign language. This deep immersion into the story that causes such an experience to happen is called *flow* (Csikszentmihalyi, 1990).

Experiencing *Flow* in Literature Circles among High School Students

Reading can induce more flow-like experiences than any others (Massimini, Csikszentmihalyi, & Delle, 1998). Studying reading flow among EFL students is probably no less important than in an L1 context and in other life aspects. Here is one pioneering study from Taiwan conducted with 76 senior high school students who had little experience reading English fiction before entering the class and read self-selected books in literature circles for five weeks (Lee, Hung, Cheng, & Lin, 2018). We collected repeated data to find out if optimal experiences, flow, did exist, and how and when it occurred during weekly literature circles. The findings showed that the conditions provided by literature circles, comprehension, teacher-support, and peer-support could successfully facilitate group flow, which in turn helped enhance individual flow for future reading, that is, reading produced a trance-state, a state in which readers were “lost in the book” (Nell, 1988).

Once again, this study supported Krashen’s comprehension hypothesis, as well as Vygotsky’s notion on the contribution social interaction makes to the development of cognition (1978). It may be that the most important element of the reading treatment is allowing and encouraging self-selection, which helps to ensure that books are proper for students’ reading level as well as interesting (Krashen, 2015; Lee, 2007).

This study provides a plan to help EFL teenagers keep developing their reading ability and interest: Engage students in reading self-selected books agreed upon among members in a literature circle so that all could benefit from autonomous as well as collaborative reading.

What Can EFL Children Read into Their Teen Life?

Self-selection has been a very important feature in free voluntary reading for personal and academic purposes (Lee, 2014, 2015). On the one hand, we wish our students to read more stories in the form of storybooks or fiction; on the other, we want to make sure that they possess a vocabulary size sufficient enough to sustain a comprehension level required for EFL reading and even reading with flow. Self-selection deals with this concern. McQuillan and Conde (1996) point out that determining whether a reader is ready for independent reading "... is most easily determined by readers themselves" (1996, p. 128). Even if texts be a little difficult, McQuillan (2016) argues that if the stories are appealing, "some struggle may be worth the effort."

The following two studies using corpus analysis show how it is possible for EFL children and teenagers to engage themselves in stories vividly told by experienced storytellers, and young adult novels introduced by teachers or self-selected.

Wang and Lee provided only ethnographic notes of how some children became independent and passionate readers. Hsieh, Wang, and Lee (2011), however, provided a corpus analysis comparing the 65 story books in Wang and Lee (2007) and textbooks those children read for school. The analysis included the number of total words, the number of content words (e.g., noun, verb, and adjectives) and the number and percentage of content words that appeared three or six times (number of repetitions considered to be needed for acquisition) appearing in books of different themes (e.g., friendship, family, fantasy, witchery, etc.).

Our findings showed that storybooks provided five times as many words as a textbook series used for the 6-year elementary English education, two to three times as many content words as those in the textbooks, and contained a higher percentages of content words that were recycled across different themes. The authors concluded that

"storybooks offer acquirers a substantial amount of vocabulary in the text, which helped pave the way for the children... to reach the stage where they were able to do and enjoy independent reading. ... [If] we can provide extensive, coherent, and interesting input in the form of stories, EFL children will be much better prepared to proceed to the next stage of English learning, the junior high school" (p. 32).

In addition, *Marvin Redpost* is an ideal "bridge book" for children to grow into reading fiction with complicated language use and sophisticated themes, providing them with entertaining reading that helps prepare them for challenging texts. McQuillan (2016) showed that this is feasible if time and books are accessible for L2 readers.

Nation (2014) holds that most of the vocabulary needed to read challenging texts (up to the 9000 thousand words level) can be acquired through extensive reading. He also concludes that the reader needs to have at least 95% to 98% knowledge of the words in a text for comfortable reading with comprehension. Moreover, to acquire an unknown word, 12 exposures to the word are required. According to the studies presented here, this is possible for all EFL students in Taiwan context, and very possible for the whole Asian context. The 65 storybooks used in Wang and Lee's study contained the first 3000 level words, which constituted about 95% of the storybook texts, and 98% of the texts consisted of word belonging to the 7000-word family. *Marvin Redpost: Kidnapped at Birth*, about 5,679 words, has 98% text coverage of words up to the 5000-word-family level.

A book list provided in McQuillan (2016) is intended to fill the gap between the 4000-word-family level and 9000-word-family-level. It includes the highly popular *Harry Potter*, *Hunger Games*, and *Twilight* series. With reading an hour a day, for a little over three years, reading these novels would enable L2 readers read at the 9000-word-family level. If the fourth graders in Wang & Lee's study did only 30 minutes of pleasure reading per day after school, these children would be ready to read the 9000-word-family level books before entering college.

CONCLUSION

What happened to the boy who cried when hearing *The Giving Tree* and who has read quite a few young adult novels in English before reaching high school? The result is disappointing. Those small sparks in his young mind that had once embraced the whirling stimulation from story to story have been quenched for now. He, dragged into teachers' sterile and suffocating classrooms, has been reading little. Instead, he has been forced to complete piles of worksheets and mock tests to prepare for examinations. He is also forced to practice reading short pieces of expository passages (convenient to edit into textbooks and comprehension tests) that current scholars value as more challenging and worthier of reading than compelling fiction. He has not been given the chance to keep exercising his "brain muscle" (Rita Carter, (TECxCluj, 2018) by reading fiction. As a result, he has lost his confidence in reading English. My encouragement cannot counteract what he is asked to do in school and gradually becomes another form of pressure on him. This situation creates not only frustrating children, but also depressed parents.

If, however, we realize that all human beings are wired to learn from and enjoy stories, we will come to realize that a completely different scenario is called for in our education and language teaching. Stories, according to research, are crucial in all areas of learning and expertise. The empirical evidence showing that children acquire vocabulary more efficiently and

develop more enthusiasm for reading from stories is strong validation of the power of story for language acquisition.

In addition, research tells us that reading stories and literary fiction helps develop positive personal qualities and good character. We did not begin reading fiction and we do not continue to read fiction in order to become a better person. Rather, the benefits described here are an amazing and beneficial by-product. Immersing our children and students in the world of story reading and listening, therefore, should be valued a must-have component of education in all realms.

Finally, if I had not planted a seed of enjoying stories in Calvin's young mind when he was a toddler, he wouldn't have suddenly asked me to buy him *The City of Ember* just a while ago. I'm still hopeful!

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