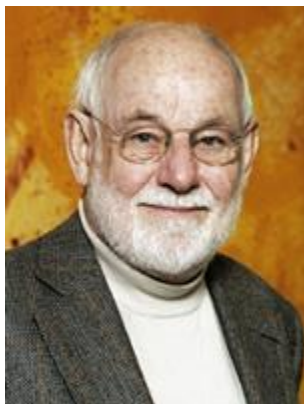


## Cognitive Development among Children through Select Picture Books of Eric Carle

N. Lavanya (II M.A. English Literature)  
Dr. Raichel M. Sylus

---



Eric Carle

Courtesy: <http://www.eric-carle.com/bio.html>

### Usefulness of Rereading Books

Children enhance their creative thought and their receptive and productive language by rereading books on children's literature. Children's books are more prominent for children who learn new experiences each day since they make good impact from good stories. From such stories children tend to live a systematic life because they shape them towards positive thinking. "Throughout history, stories have been the mode through which people around the world have preserved cultures, told cautionary tales, and made sense of their life circumstances." ("Children's Literature around the World", 379). The ultimate motive behind children's books is to transform children to be better because they get to know their culture and lifestyle through reading various books and those stories show them the right path. "Understanding this broad

power of literature is particularly important within the current global context” (“Children’s Literature around the World” 379)

### **Eric Carle and His Works**

Eric Carle is a famous picture book writer. As an illustrator and author he collaborated with Bill Martin, Jr. on *Brown Bear, Brown Bear, What Do You See?* His work has been translated into more than 30 languages and the well-known titles are *The Grouchy Ladybug* and *The Very Hungry Caterpillar*.



Courtesy: <http://www.watervlietpubliclibrary.org/?p=542>

Eric Carle has illustrated pictures with attractive colours in a beautiful manner. Children get to know the life cycle of a butterfly as well as numbers along with names of the fruits that the caterpillar eats. Children can also learn the days of the week and different variety of foods which are presented with colourful shapes. Recalling how he caught up with such an idea “The author discloses that it all started innocently, with a hole puncher. He was punching holes into a stack of paper, and he thought of a bookworm, so he created a story called, “A Week With Willi the Worm.” Then later, his editor, who didn’t like the idea of a worm, suggested a caterpillar” (Solomon 6).

**Language in India** [www.languageinindia.com](http://www.languageinindia.com) ISSN 1930-2940 16:6 June 2016

N. Lavanya (II M.A. English Literature) and Dr. Raichel M. Sylus

Cognitive Development among Children through Select Picture Books of Eric Carle

## Love for Nature

Eric Carle's love for nature is seen extensively in his books. His art work is used in all books and he uses hand painted pictures and cuts many layers in order to make bright and colourful images. All these efforts are for children to make use of their knowledge creatively. Children learn numbers, insects, birds and animals with the concept of nature. Human beings are dependent on nature. While writing, Carle recognizes the feelings of children and aims at the intellectual development of the child readers. With all these aspects, it is clear that Carle has been a successful author and a famous picture book writer who has enriched the knowledge of children through his writing.

## Role in Teaching the Concepts of Mathematics

Eric Carle's books play a vital role in teaching the concept of mathematics related to counting through his books. *The Very Hungry Caterpillar* deals with the story of a caterpillar which looks for some food. Carle casually introduces numbers, days of the week and names of fruits through these lines:

On Monday he ate through one apple. But he was still hungry.

On Tuesday he ate two pears, but he was still hungry.

On Wednesday he ate three plums, but he was still hungry.

On Thursday he ate through four strawberries, but he was still hungry.

On Friday he ate through five oranges, but he was still hungry. (n. pag.)

These lines depict that the caterpillar eats one apple, two pears, three plums, four strawberries and five oranges. The author has introduced the aspect of counting numbers by making the caterpillar to eat all the fruits. Thus, Carle connects children's literature and Maths education. Through his picture books he exemplifies mathematical understanding to children and also makes it helpful for teachers to use this in their teaching. Carle's *The Very Hungry Caterpillar* is used as a tool for teaching the concepts of ordinal numbers, counting, estimating and fractions.

## Problem Solving

*The Very Hungry Caterpillar* leads to concepts related to problem solving. The caterpillar eats various fruits each day and the number increases day by day because the caterpillar is very hungry and he is in quest for food. His hunger is not satisfied. In order to solve this problem the caterpillar eats one full leaf and becomes very fat the next day. After eating a big leaf he doesn't get hungry anymore but is turned into a beautiful butterfly. Carle attempts to capture children's interest in mathematics through his books. This book would be an excellent tool for teachers to use when correlating problem solving to real-world situations.

## Counting

Books on counting enable children to learn numbers through the stories. Carle's *1,2,3 to the Zoo* serves as the right book for counting numbers and attracts them easier than other books because the story takes place in a zoo. Children are very much interested to visit a zoo. They love to see animals and Carle triggers their interest to study mathematics by using animals in his counting book.

*1,2,3 to the Zoo* is a book on animal train having one elephant, two hippos, three giraffe, four lions, five bears, six crocodiles, seven birds, eight monkeys, nine snakes and ten mixed up animals. This animal train travels to the zoo and gathers all children to the zoo. Since animals are of different sizes children not only study the numbers from one to ten but also learn the size. Teachers also can use this book as a tool to teach them numbers and sizes of different animals. "The children began creating their own texts and unique classification systems" ("Exploring Subject Areas with a Counting Book" 170). The preschool book *Sizes* by Pienkowski is a valuable resource to teach sizes to children. Students are usually asked to identify the items from each picture and explain the reasons for their difference.

## Explicit Type

Carle's books fall under Explicit type since they specifically teach numbers and size as in *The Very Hungry Caterpillar* and *1,2,3 to the Zoo*. He uses picture book formats to teach mathematical concepts to children. Carle's books are also examples of Embedded type since the mathematical concepts are embedded in it. *The Very Hungry Caterpillar* is embedded with a

**Language in India** [www.languageinindia.com](http://www.languageinindia.com) ISSN 1930-2940 16:6 June 2016

N. Lavanya (II M.A. English Literature) and Dr. Raichel M. Sylus

Cognitive Development among Children through Select Picture Books of Eric Carle

good concept of a caterpillar which feels hungry and searches for food and which turns into a butterfly at the end. This book also develops mathematical concepts as it introduces the children to days of the week and numbering.

His books are considered as a learning experience for children as they are used by teachers to improve children's opportunities in Mathematics education. Marston suggested that learning experiences or mathematical investigation should not be limited just to activities evidenced by the text or illustrations or those perceived by the teacher. The story and illustrations should be a stimulus for both the teacher and students for problem solving, problem posing and for application and integration of concepts into everyday or relevant situations. Carle's books present mathematical knowledge and skill to children giving them a realistic approach.

### **Emphasis on Science**

Science is emphasised as important in early childhood, teachers find it challenging to teach science to young children for various reasons. Using picture books to introduce science concepts to young children offers a solution because of teachers' familiarity with this instructional tool. There seems to be a growing consensus among researches that children's literature including picture books, fiction and nonfictions books can be used as instructional tools to teach science and foster interest and positive attitudes toward learning science in early years. Carle's books also teach science to young children and create interest among them.

Young children read the basic concept of science, life cycle of insects, growth of seeds and other relevant aspects. Carle's books are very simple and realistic with animals and insects. Science is taught through *The Very Hungry Caterpillar* which is about the life cycle of a butterfly, *The Very Busy Spider* which is about the life cycle of a spider and *The Tiny Seed* which is about the growth of a seed. All the three books involve the concepts of science so that children who like picture books a lot learn many things from such books. There are also other stories which trace the life cycle of insects.

### **Life Cycle**

*The Very Hungry Caterpillar* explains the life cycle of a butterfly, from laying an egg till its transformation into a beautiful butterfly. “In the light of the moon a little egg lay on a leaf. One Sunday morning the warm sun came up and- pop! – out of the egg came a tiny and very hungry caterpillar. He started to look for some food.” (n. pag.) The egg grows into a tiny caterpillar who feels very hungry. He eats more fruits and a big leaf to quench his hunger. The caterpillar grows big. The pictures of the caterpillar in Carle’s books are evidences of the appearance of the grown caterpillar. He describes it in the following manner:

Now he wasn’t hungry any more- and he wasn’t a little caterpillar any more.  
He was a big, fat caterpillar. He built a small house, called a cocoon, around himself.  
He stayed inside for more than two weeks.  
Then he nibbled a hole in the cocoon, pushed his way out and...  
he was a beautiful butterfly! (n. pag.)

These lines show that the caterpillar forms a cocoon when the quest for food stops. Children learn that the growth of a butterfly has different stages. But it is a fact that the butterfly does not form a cocoon. Carle shows his creativity and gives a clear picture of the formation of cocoon.

The life cycle of a butterfly depicted through *The Very Hungry Caterpillar* helps them to think creatively. *The Very Busy Spider* is about a spider which spins her own web. The life cycle of spider is described in every page. The spider spins her web through silky threads and it is described in the following manner:

Early one morning the wind blew a spider across the field.  
A thin, silky thread trailed from her body.  
The spider landed on a fence post near a farm yard...  
and began to spin a web with her silky thread.  
“Neigh! Neigh!” said the horse. “Want to go for a ride?”  
The spider didn’t answer. She was very busy spinning her web. (n. pag.)

It is clear that the spider's body is made up of silk thread and children can learn how a spider spins her own web without distracting her mind towards other animals that are disturbing her. The horse disturbs the spider but the spider never listens to it instead concentrates on her works. So children understand the scientific concepts and they are motivated to know the exciting world of science. The spider is mentioned as 'she', 'her' which makes children to think that female spiders can also spin their webs. *The Very Busy Spider* is perfect for children to know about the life cycle of an insect. This book is also easy and readable and children feel happy to guess the story with the legible font size. There are one or two sentences in a page but the format Carle lays out is understandable and clear. This book is "evaluated on the basis of three primary criteria: accuracy and readability, quality of format and illustrations, and content reflecting current scientific understanding of the topic." ("A Sense of the Beautiful: Life Cycles and Insects" 892)

### **Developing Science Curriculum**

Carle's only aim is to develop science curriculum to children in some of his books and *The Very Hungry Caterpillar* and *The Very Busy Spider* serve as a tool for children to gain their knowledge of science. These two books trace the life cycle of a butterfly and a spider but Carle goes one step forward and presents a book on the life cycle of a seed. *The Tiny Seed* is the story of a very small seed which undergoes many difficulties.

The story is about the birth of a small seed blowing with the strong wind in autumn. Other seeds fly higher than the other but the tiny seed cannot fly so it sails with the others. The story continues by comparing the tiny seed with other seeds. There is another seed which lands on an icy mountain and the rest of the seeds keep flying. On seeing this, the little seed feels that it cannot go fast like other seeds. After flying to the icy mountains, the seeds travel towards an ocean. While flying, one seed falls into the water and drowns but the other seed sails on with the wind looking at the tiny seed and mocking for its tiny nature. The seeds continue to fly to a desert and one seed falls on the desert and gets dried due to heat. The wind pushes the tiny seed and other seeds to the ground. As they land a bird eats one seed leaving the tiny seed because the tiny seed is invisible to the bird.



The season changes from autumn to winter. The seeds settle down in the earth and they are covered with snow. A hungry mouse eats a seed for his lunch but the tiny seed is invisible to the mouse. Winter changes to spring and it is the favourable time for seeds to grow into plants. The tiny seed starts to grow into a plant. Children step out to play and spoil many plants by stamping on it, while a boy plucks a flower to gift his friend. Only the tiny plant from the tiny seed is safe and during summer it grows into a big plant which is taller than people, houses and trees. The tiny seed changes into a giant flower. Once again autumn drops all the petals of the flowers where the seeds pop out. This time too many tiny seeds come out and quickly sail to faraway places.

From *The Tiny Seed* children observe that the seed comes out from a flower and then grows into small leaves. It grows into a big flower which is admired by all people. The seed being tiny is beneficial to safeguard itself from all the difficulties. For example, “One of the seeds flies higher than the others. Up, up it goes! It flies too high and the sun’s hot rays burn it up. But the tiny seed sails on with the others” (n. pag.) This book also creates awareness to tiny children to be safe from all difficulties. Since, the wind passes from place to place and sails with all the other seeds, the tiny seed overcomes all problems as it travels. It also introduces to the concept of pollination.

As a seed, the next step is to grow roots followed by stems and leaves with the help of water and sunlight. The leaves grow into plants and produce big flowers. Then the process goes on. The growth of the tiny seed is slow because as it grows the tiny plant has three leaves but others have seven leaves. “The tiny plant that grew from the tiny seed is growing fast, but its neighbour grows even faster. Before the tiny plant has three leaves the other plant has seven! And look! A Buds! And now even a flower.” (n. pag.) Some children feel that they are tiny, as their growth is stunted. This book not only deals with the aspects of science but also gives an optimistic approach that even a small seed can overcome all difficulties and survive till the end. The tiny seed grows into a big plant leaving out the rest of the seeds. Carle says that,

The sun shines on it and the rain waters it. It has many leaves.

It grows taller and taller. It is taller than the people. It is taller than the trees. It is taller than the houses. And now a flower grows on it. People come from far and



near to look at this flower. It is the tallest flower they have ever seen. It is a giant flower. (n. pag.)

Children who read this story understand that a tiny seed is essential to grow into a tall flower which is taller than people and houses. The book becomes a source of amazement to children when children learn that a seed grows into a flower with four main parts. From the earth the roots take in nutrients and the stem acts like a pipe to carry water to the leaves. Sunlight helps to make food and the seed grows into a flower. Children learn the importance of a seed from this story. The author gives the following description:

The wind blows harder. The flower has almost all of its petals. It sways and bends away from the wind. But the wind grows stronger and shakes the flower. Once more the wind shakes the flower, and this time the flower's seed pod opens. Out come many tiny seeds that quickly sail far away on the wind. (n. pag.)

*The Tiny Seed* invites children to read about the world of nature because it teaches various concepts of nature. Science is a "part of a whole language approach that blends reading, writing and talking in an activity-based environment" (*Children's Literature and the Teaching of Science: Possibilities and Cautions* 18). Both science and ecocriticism teach children about nature and life cycle of a seed to children. The role of nature in children's lives should rely on the motifs of pros and cons of nature and comparisons among humans, plants and animals.

## Colours

Teaching colours and animals to children is also an important concept in children's literature. Learning colours is not an easy task for children because they cannot differentiate one colour from another. Like counting numbers children feel difficult to learn different types of colours. There are number of children's books which are designed to help children to learn the difference between colours. In order to make it easy, books are designed in such a way that children learn colours at one glance.

Carle's *Brown Bear, Brown Bear, What Do You See?* is a rhyming story for children to teach colours of different creatures. Children can enjoy reading this book which gives plenty to look on each page and makes reading enjoyable. This book is also like a question and answer format where one animal asks another animal about what it can see. The animals answer that they see red bird, yellow duck, white dog, etc. Children learn that animals are varied and have different colours. In schools, children start to learn about warm and cool colours. Carle's books are specially designed with collages. Colours are vivid and they urge children to learn more. Carle's books help them to learn colours in the following manner:

Brown Bear, Brown Bear, What do you see?  
I see a red bird looking at me.  
Red Bird, Red Bird What do you see?  
I see a yellow duck looking at me.  
Yellow Duck, Yellow Duck, What do you see?  
I see a blue horse looking at me. (n. pag.)

It is explicit from these lines that there are colours like red, yellow, blue and that they are attributed to each animal because children love to know about animals. If animals are attributed with each colour then children show interest in learning more colours and animals. It is evident that the bird is red, duck is yellow and horse is blue. Children not only learn about colours and animals from Carle's book but also learn words. They discover about words and learn to read. Carle's *Brown Bear, Brown Bear, What Do You See?* helps children to improve their vocabulary.

Children learn words like blue, green, purple, white, black, horse, frog, cat, dog, sheep and goldfish. When they start to read they try to differentiate that blue, green, purple etc., are colours and horse, frog, cat, etc., are animals. At first, they discover words then they try to put those words in different contexts. Gradually they read words first and they differentiate between animals and colours, after which they start to imagine the shapes of animals in different colour. Carle makes this rhythmic story a perfect introduction to read and learn about colours, animals and words with his exuberantly coloured artwork and favourite animals.

The end of the story sums up all the colours and animals. Children use their knowledge to decode unknown words in the text. Gaskins et al., in the article “Procedures for Word Learning: Making Discoveries about Word” suggest “word-learning procedures in reading connect text, by reviewing children about the language which enhance their enthusiasm in exploring words in order to discover new relationships” (n. pag.). Words like teacher and student depict the relationship of teacher and student in the society. Thus the article gives explicit instructions to children in order to learn phases of words from the word learning process. *Brown Bear, Brown Bear, What Do You See?* also gives a review of their word power to children. Children learn varieties of words with a key word from the book.

### **Role of Language Development**

Language is an important skill that allows a person to communicate. A child begins to develop language even before using words. Language development is important to a child in order to adequately exchange information with others in a meaningful way. Parents can encourage the development of language skills with a child by interacting regularly, singing songs and reading simple stories. Stories improve children to develop their language skills. Carle’s books help in improving children’s language skills. For example, *Brown Bear, Brown Bear, What do You See?* helps parents to teach a simple story based on knowing animals, colours and words for a language. Learning colours, animals and words are very essential in a language.

Parents play games with their children by naming objects or by practicing concepts of direction. For a change they can use simple stories to enhance the language skill and Carle’s books focus on language. They not only learn colours but also tend to know more about animals and words. Language is a lifelong process. Children understand a lot more than they can say. Carle’s book enhances a child’s ability to communicate, express and understand feelings. It also supports thinking and problem-solving, developing and maintaining relationships. To develop a language it is important to be exposed to different words in different contexts. This helps children to learn the meaning and function of words.

Children develop their vocabulary through stories and they start to use those words in the present context. Children who have limited expressive vocabulary make no word combination. Language problems can be solved after reading his books. Children with good receptive and

expressive language skills understand the nuances of language and they are able to tackle reading skills. Reading books opens the child's world and allows him/her to access information in language skills. Reading Carle's books become a source of entertainment and enjoyment and also serve as an effective means to gain language skills.

Picture books contribute much during story time. Teachers who share quality picture books with young children promote literacy in the fullest sense of the word. Children learn to love literature through joyous encounters with picture books shared with them by enthusiastic adults. Children's experiences with literature begin with enjoyment. Enjoyment is the force that sustains a young child's involvement with picture books when there are televisions and computers. Picture books are precursors to not only learning to read but also wanting to read.

Mathematics and Science teach imagination, problem solving, logical thinking and much more aspects. Carle's books also teach the importance of mathematics, science and language. The books chosen are *The Very Hungry Caterpillar*, *The Tiny Seed*, *The Very Busy Spider*, *Brown Bear, Brown Bear*, *What Do You See?*. In Mathematics, children learn the importance of numbers through a small story. In order to develop the concept of mathematics, Carle's books teach these aspects with animal characters. Children understand complex concepts such as multiplication, division and measurements. Concepts used in science grow and develop very early as far as children are concerned. Children explore the world with their senses.

Children are born curious and they like to know about their environment. Carle's books pave a way to know the concepts of science. Children also develop the processes that enable them to apply their new concepts, expand existing concepts and develop new ones. Carle's concept on science purely deals with life cycles. Children begin to learn the life cycles of animals and plants, then they gradually get curious to know about the life cycle of human beings. They develop to think about their surrounding that actively construct their own knowledge. The concept of language is prominent for children. Language has become an important skill that develops their competency. Carle's books encourage the development of language skills to a child by interacting regularly with his simple stories. His books can make children to improve their pronunciation and vocabulary.

## Children's Literature Helps Children's Cognitive Development

Thus, children's literature is very significant to improve children's cognitive development since they assimilate stories into their life. Carle's books instill imagination, problem solving aspects, virtues and acquire extensive knowledge. His books are more simple and comprehensible to children. They make children to think about their own selves in an optimistic way. When one thinks of children's books and its positive effects on the young readers, Carle's books are inevitable.

---

### Works Cited

#### Primary Sources:

- Carle, Eric. *Brown Bear, Brown Bear, What Do You See?*. USA: Penguin Putnam, 1967. Print.
- . *1,2,3 To The Zoo*. USA: Penguin Putnam, 1968. Print.
- . *The Very Hungry Caterpillar*. USA: Penguin Putnam, 1969. Print.
- . *The Tiny Seed*. USA: Penguin Putnam, 1970. Print.
- . *The Very Busy Spider*. USA: Penguin Putnam, 1987. Print.

#### Secondary Sources:

- Belle, Leah Van. "A Sense of the Beautiful: Life Cycles and Insects." *BioScience* 58.9 (2008): 892. Print.
- Gaskins, Irene W and C. Linnea Ehri, et.al. "Procedures for Word Learning: Making Discoveries about Words." *The Reading Teacher* 50.4 (1997). Print.
- Royce, Christine A and David A. Wiley. "Children's Literature and the Teaching of Science: Possibilities and Cautions." *The Clearing House* 71 (1996): 18-19. Print.
- Solomon, Debra Cooper. "A Look at Eric Carle." *School Arts* 98.9 (1999): 18. Print.
- Whitin, David J, and Heidi Mills, Eds. "Exploring Subject Areas with a Counting Book." *Teaching Children Mathematics* 1.3 (1994): 170. Print.

---

N. Lavanya, (II M.A. English Literature)

Dr. Raichel M. Sylus

**Language in India** [www.languageinindia.com](http://www.languageinindia.com) ISSN 1930-2940 16:6 June 2016

N. Lavanya (II M.A. English Literature) and Dr. Raichel M. Sylus

Cognitive Development among Children through Select Picture Books of Eric Carle

Asst. Professor (SS)  
Dept. of English  
Avinashilingam University for Women  
Coimbatore – 43  
Tamilnadu  
India  
[raichel\\_eng@avinuty.ac.in](mailto:raichel_eng@avinuty.ac.in)  
[raichelmsylus@yahoo.co.in](mailto:raichelmsylus@yahoo.co.in)