Addressing the Thinking Mind:
A Constructivist Approach to Informational
Stories for Children

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Constructivism is an approach to teaching and learning, but it can also be an approach to children's literature—particularly the type of children's stories that are also meant to provide particular information or teach particular concepts. For lack of a better term and for the purpose of this paper, such stories are hereupon termed *informational stories*. To show how the constructivist approach can be used to evaluate such stories, four informational stories published by Adarna House will be analyzed: Heidi Eusebio Abad's *Polliwog's Wiggle*, Carla Pacis's *Hipon and Biya*, Robert Magnuson's *Mister Beetle's Many Rooms,* and Christine Bellen's *Filemon Mamon.*

Before analyzing these stories, it is important that the concept of constructivism be clarified. The word c*onstructivism* is derived from *construct*—a product of mental synthesis. As an approach to teaching and learning, constructivism is based on the premise that learning is the result of a learner's construction of meaning; that is, a learner structures new information by fitting this together with what s/he already knows. It likewise represents a paradigm shift from education based on behaviorism to education based on cognitive theory (Gagnon and Collay). Cognitive constructivist perspectives (which have their historical precedents in the works of Dewey, Montessori, Piaget, Bruner and Vygotsky, among others) emphasize that learners create or construct their own knowledge through acting on and interacting with the world (Woolfolk 277).

The constructivist process is defined in terms of how learners construct meaning—how they organize, structure, and restructure their experiences in accordance to existing schemes of thought (Morrison 81). Such a view of learning has consequences for educators and students alike: teaching has to focus on the learner (not the lesson to be taught) and knowledge is dependent on the meaning constructed by the learner or the community of learners (Hein). Such consequences, in turn, have their implications in the way a lesson is designed and structured and the method by which learning activities are conducted in the different subject areas.

In applying these principles of constructivism to the writing process—specifically writing geared toward producing informational stories for young children—one realizes that writers for children need to approximate what their target readers already know, how these young readers receive and process the information they get from a story, and how these recipients of information structure, restructure, and organize what they have learned. And because these writers are likewise *literary* writers, they have to make sure stories are not only effectively informative but also engaging, entertaining and meaningful. This then underscores what most writers for children already know but what other writers take for granted – writing for children is serious business.

To write for children is to take children seriously. It is to know them up close, to know their needs, their likes and dislikes, how they think, what makes them laugh and cry, to know what they fancy—in other words, to know what it means to be a child.

What it means to be a child is what this paper partly would like to address. Specifically, it would like to address what it means to be a *thinking* and *learning* child. This is why it focuses on informational stories—stories for children that do not only entertain but give relevant information and teach a certain concept—be it one in mathematics, science, history, or other areas of learning.

There are already a number of informational stories in the Philippines. In the Bulilit Stories of the NCP Publishing Corporation of the 1980s, these were stories included in the Aklat Talisik titles which are stories on mental development. The Hiyas Children's Collection also has its own titles, like the "Mga Kwento ni Tito Dok" series of Dr Luis P. Gaitmaitan. Adarna's Aklat ng Karunungan series consists of stories that contain basic lessons and information meant to prepare children for formal schooling. The series tackles colors, shapes, numbers, time, the alphabet, science and technology. More recently, Adarna published a new set of informational stories meant for nine- to eleven-year old children and these include the four stories mentioned earlier. Eusebio Abad's *Polliwog's Wiggle* describes the life cycle of a frog, Pacis's *Hipon and Biya* teaches the concept of mutual symbiosis, Magnuson's *Mister Beetle's Many Rooms* shows how plants grow, and Bellen's *Filemon Mamon* shows ways of preventing obesity in children.

In informational stories like these, though the primary aim is to provide enjoyment (because it *is* literature), the "teaching" part of the story is not incidental but *deliberate*. This implies that informational stories, more than anything else, have to be first effective as stories—they have to be well written, engaging, and meaningful. From this kind of story, children—readers are able to understand and learn about a target concept. This, in turn, implies that if the story also aims to teach a concept, the writer has to be certain of his/her facts and has to be accurate in presenting the concept in the context of the story.

To better understand and appreciate the importance of making the story both engaging and informative, it would be good to focus on some principles of constructivist thinking outlined by Hein:

1. Learning is an active process in which the learner uses sensory input and constructs meaning out of it.
2. People learn to learn as they learn: learning consists both of constructing meaning and constructing systems of meaning.
3. The crucial action of constructing meaning is mental: it happens in the mind.
4. Learning involves language: the language we use influences learning.
5. Learning is a social activity: our learning is intimately associated with our connection with other human beings—teachers, peers and family.
6. Learning is contextual: we do not learn isolated facts and theories; we learn in relationship to what else we know, what we believe.
7. It takes time to learn.
8. Motivation is a key component of learning.

The first three items in Hein's list imply the importance of holistic teaching, and in the context of this paper, "holistic writing." The informational story must appeal to the thinking mind; it must provide the necessary sensory input which children-readers can use to construct meaning. In writing an informational story for children, what could this sensory input consist of? It could be the different elements of the story—the setting (the place where the story unfolds and the time when it happens), the characters, the theme and the style of writing. This implies that the story has to be rich in sensory images—things that appeal to the sense of sight, smell, touch, taste, and hearing. Children reading the story must be able to see, smell, touch, taste, hear and grasp the essence of the story. In other words, the writing has to be vivid (this

can be done through the use of concrete and specific words) and has to provide a "fresh" rendition of the narrative (i.e., neither a cliché nor a rehash of usual plot formulas). In this way, it would be easy for children-readers to see the story through the mind's eye.

The importance of helping children-readers see the story in this way becomes clearer when one considers that many informational stories target children who are in what Piaget calls the "concrete operations stage." These are children who are around seven to twelve years old and who "begin to use mental images and symbols during the thinking process" and whose mental development can be facilitated "through the use of concrete or real objects as opposed to hypothetical situations or places" (Morrison 90).

If children are to learn a concept as they are engaged in a story, the story must lend itself to their construction of meaning and of their relating what is newly introduced in the story to what they already know. This, in turn, implies that writers of informational stories must be able to approximate what their target readers already know so that they will be able to build on this prior knowledge.

How do these principles apply to the Adarna stories?

In *Polliwog's Wiggle*, sensory input comes from the description of the setting ("In a swamp near a shade of mangrove trees . . .") and the varied description of the growing and changing main character:

> They found a small, jellylike ball stuck on the roots of an old mangrove tree. Because it was soft and transparent, they could see a tiny, black, fish-like creature wriggling about inside.

> A few days later, the jellylike egg seemed to change shape. Suddenly, out popped a tiny, black fish with a big head, some feathery gills, and a wiggly tail! Because it had a rolly-polly shape that wiggled its way through the water the minnows called it polliwog.

Note how a number of words in these short paragraphs appeal to the different senses: "small," "tiny," "transparent," "big," "black" (sense of sight); "jellylike," "soft," "wiggled" (sense of touch); "popped" (sense of hearing). There are relatively difficult words in these paragraphs, e.g., "mangrove," "larvae," and these therefore are some of the relatively new concepts being introduced in the story. But since they are paired with relatively familiar words ("mangrove trees," "mosquito larvae"), the writer is able to build on prior knowledge to introduce the new. The concept of "mangrove" becomes more concrete and understandable because the word is paired with "trees"; the same is true with "larvae," which is paired with "mosquito." Both the words "trees" and "mosquito" are approximately within the experience of young children and therefore are assumed to be prior knowledge.

In *Hipon and Biya*, the writer also begins with a description of the setting and the characters:

> On the white sand of a coral reef lived Hipon and Biya. Although they were not of the same sort, they lived together in a burrow that Hipon had dug out. They were happy living this way.

> It was Hipon's job to keep the burrow clean and free from any sand particles the waves constantly brought in. With his ten long, spiny legs, this was no problem.

A number of words and phrases found in these paragraphs appeal to the different senses and thus serve as sensory input for its readers: "white sand," "coral reef," "burrow," "clean," "sand particles," "waves" and "spiny legs." A relatively difficult word is "burrow" —yet the context clues ("lived together," "dug out") provided in the same sentence where the word is found can help children-readers figure out what the word means.

Mister Beetle's Many Rooms also provides its readers with enough sensory input:

> One morning, Mister Beetle woke up to the sound of music playing.
>
> When he searched for the source of the music, Mister Beetle found a terrible surprise—a few branches had sprouted from the top of his house! There were rooms that had not been there before. On top of one branch sat Cricket, playing a guitar.

Again, several words and phrases in these paragraphs appeal to different senses: "sound," "music playing," "few branches," "had sprouted," "on top of one branch," "playing a guitar." A relatively difficult word is "sprouted," but the context in which it is found can help young readers infer what the word means in relation to the branches of a plant.

The key word here is *relation* and the same can be said of *Felimon Mamon.* Here is an example of a passage from the story in which the meaning of difficult words can be inferred from their relation to other words in the passage:

> For a change, Filemon wanted to be Andres Bonifacio in a play. The fearless leader of the Katipunan. "Charge!" he shouted. Especially when he saw the table loaded with food. It was like a fiesta! He sniffed the savory smell of adobo and lechong paksiw bathing in oil. He drooled over the green mangoes and bagoong. He went crazy over the desserts drowning in heavy syrup.

The relatively difficult words in this passage are "fearless," "sniffed" and "drooled." Such words are made easier to understand by putting them in meaningful context and using them in relation to other concepts and words in the same passage. The word "fearless," for instance, is used in relation to "Andres Bonifacio," "leader," "Katipunan," and even the exclamation "'Charge!'" The word "sniffed" goes with the phrase "savory smell" and the word "drooled" with the phrase "green mangoes and bagoong."

Recalling the list of principles of constructivist thinking, items four to six imply that learning activities must (1) help learners develop the vocabulary—the language—necessary for further learning in a particular subject area, (2) build on what learners already know, and (3) provide opportunities to learn with others. Applying these principles to the writing of informational stories for children, such stories must also help children readers acquire the vocabulary necessary for them to gradually learn the target concept. The key word here is *gradually.* Though writers for children teach certain concepts deliberately, they should not do so at the expense of what is termed "information overload." Like a beautiful story, information must unfold in a seemingly natural (not too contrived) manner that allows children-readers to grasp and understand one concept after the other, building on what they already know, and constructing new knowledge from old ones. This is because "the process of development is a gradual, continual process occurring over a period of time and resulting from maturation and experiences" (Morrison 91).

And this is where the challenge lies for writers. For instance, how do writers for children do away with jargon and use vocabulary that is within the experience of their target readers yet not so simplistic that such vocabulary leaves no room for cognitive and language

development?

In *Polliwog's Wiggle*, part of the vocabulary and concept building comes from the varied descriptions of the growing and changing main character: "a small, jellylike ball stuck on the roots of an old mangrove tree;" "a tiny, black, fish-like creature wriggling about inside; out popped a tiny, black fish with a big head, some feathery gills, and a wiggly tail!;" "Later on, a pair of hind legs grew near the base of its wiggly tail; Even the feather-like gills near its mouth had disappeared."

Note that in these sample passages, there is the gradual introduction of change—the metamorphosis—that happens to Polliwog. Without using the word metamorphosis, the writer is able to show children-readers that changes that happen to a tadpole are major although gradual.

Aside from focusing on the need for the stories to help children develop necessary vocabulary skills, items four to six in Hein's list also imply the need for informational stories to be, first and foremost, literature written in clear, coherent and beautiful language before they are able to teach a concept. Likewise, because learning is also a social activity, stories must address the "social dimension" in which children also learn these concepts. This social dimension is a little tricky. This can be taken as having children-readers feel they are not alone in exploring the story—that there is somebody, perhaps a mentor, providing the child with what Vygotsky calls "scaffolding" or the assistance provided by more mature learners (Charlesworth and Lind 9). This mentor also allows the child to reach the zone of proximal development—the area of challenge and opportunity between what a child can do independently and what s/he can do with a little assistance at the right time in the learning process (Ruddell 47). In *Polliwog's Wiggle*, this mentor can be seen in the character of the minnows. The story lends itself in such a way that the child-reader can identify with Polliwog's learning experience—an experience the minnows help clarify. The minnows do this by taking the point of view of the learning child for whom everything apparently is a new and welcome experience. The limited omniscient narrator thus describes the discovery of Polliwog from the minnows' point of view.

The experience of discovering a tadpole is new to the minnows—thus, they describe the experience in terms of what they already know by saying that the new creature is a "black fish with a big head"—something that a child learner might also do if such child does not know yet what a tadpole is. In a way, therefore, the minnows help in scaffolding by providing the child learner with assistance in understanding, clarifying, processing, and organizing the new information by relating it to what the child presumably already knows, that is, what a fish looks like.

In *Hipon and Biya*, the main characters themselves serve as mentor to each other. Near the end of the story, when both Hipon and Biya learn their lesson, it becomes clear to children-readers that the concept of mutual symbiosis, which the story teaches, is true not only at the "survival level" but also at the "educational level", and applied to human beings, people need each other not simply to live and survive but also to enjoy life, to learn, and to relearn:

> Just after sunrise the next day, Hipon worked his way out of the burrow. And who should be waiting outside but a very hungry and very dirty Biya!

> "You're back!" shouted a very happy Hipon stretching out his nine and a half spiny legs to the fish.

> "I need you to watch over me! I promise to be nicer and will never ask you to do anything I know you cannot."

"That's good to know," said Biya, who was just as happy to be back home.

"I need you to scratch up my food and dig me a home. All the other shrimps have partners and the reef can be a dangerous and lonely place for a homeless and lonely fish," said Biya as he flicked his tail three times to warn the shrimp of a hungry stonefish lurking in the coral nearby.

And so Hipon and Biya lived together in a burrow that Hipon dug out.

They were happy living this way.

In the above passage, Hipon and Biya learn their lesson from each other, not through direct instruction but paradoxically through an "absentee mentor"—they learn what they can and cannot do in the absence of the other.

In *Mister Beetle's Many Rooms*, Mister Beetle himself learns from and with his neighbors:

Mister Beetle could not believe it! His neighbors picked him up and flew him to the roof of the tree where the most dazzling party had been prepared. Bumblebee made all the yummy dishes. He turned out to be a magnificent chef. Cricket played his guitar all through the night.

"You've been a kind neighbor to let us all stay," he sang. "We hope you're not serious about going away."

They then asked Mister Beetle to give them a speech.

"There's just one more thing to make our evening complete," he said.

Everyone watched as Mister Beetle took out his watering can and began to water the roots of their small tree.

"The one you should thank is this wonderful tree," Mister Beetle said. "It made rooms for us all, and not just for me."

Through the story of Mister Beetle and his neighbors, children-readers can experience vicariously not only the gradual growth of a plant (which parallels the growth of the community) but also the growth of friendship (bonding takes time). Thus, children-readers get to join the community of learners, so to speak. This is beneficial according to Vygotsky's learning theory because children's mental, language, and social development is supported and enhanced by others through social interaction (Morrison 95).

Learning through social interaction is also seen in *Felimon Mamon*. Felimon, an obese boy who dreams of playing the role of Gregorio del Pilar in a play discovers that such dream is not the only reason why he needs to "get thin." Together with his equally obese parents, he learns that they can discipline themselves and work toward a healthier style of living:

They started watching less TV and preferred walking in the park every afternoon. They got interested in gardening as a hobby. Nanay started serving new dishes. Usually, there were fish and vegetables. Fruits became their favorite snack.

Recalling once more Hein's list of constructivist learning principles, items seven and eight —that pertain to the importance of motivation and time in learning—imply importance in

providing learning activities that do not only reinforce learning but also make it more interesting and enjoyable. Applied to writing informational stories for children, this means that the story has to offer various ways of learning and relearning target concepts. As mentioned earlier, this can take the form of the gradual introduction of vocabulary. It can also take the form of "variations of the same theme." For instance, in *Polliwog's Wiggle*, the metamorphosis of Polliwog is first introduced in the person of the "oddly-shaped," "moss-covered stone" that appeared "one afternoon, after a brief drizzle." The description of this adult frog, "Suddenly, two large, bulging eyes blinked at them! A second later, with a quick flick of the tongue, the odd creature caught a mosquito!" is echoed later in what also happens to Polliwog.

Teaching and re-teaching target concepts can also be done by repeating key phrases in the story. In *Hipon and Biya*, the repeated key phrases/clauses have something to do with the respective unique qualities of Hipon ("in a burrow that Hipon had dug out;" "it was Hipon's job to keep the burrow clean;" "Hipon would plug the entrance to the burrow with a pebble") and Biya ("Biya fiercely guarded the burrow from trespassers;" "Biya would flick his tail several times;" "with a flick of his tail, Biya was gone;" "said Biya as he flicked his tail three times to warn the shrimp of a hungry stonefish"). Such repetition is understandable when one considers that what the story intends to teach is the concept of mutual symbiosis—a kind of partnership that works well because each partner offers something that the other does not have. In the case of Hipon and Biya, Hipon is able to dig a burrow and provide Biya with both shelter and food, while Biya—with the flick of his tail—is able to provide Hipon (who has poor eyesight) with timely warning against dangerous predators.

Repetition is also the technique used in *Mister Beetles' Many Rooms*. To emphasize the gradual growth of the tree where Mister Beetle lives, several words, phrases, and clauses are repeated: "a few new branches had sprouted;" "rooms that had not been there before;" "he wondered where these new branches came from;" "to see if any new rooms would appear;" "a new branch had sprouted right above him;" "more and more rooms seemed to grow from the top of his house;" "the house grew into a small tree; it made rooms for us all." Such repetition is effective in helping children-readers realize how the growth of a tree is natural and how such growth parallels the growth of a community (the more branches and "rooms" sprout, the more insects are able to live in the tree).

In *Filemon Mamon*, the contrast between being obese and staying healthy is also emphasized through the repetition of contrasting/opposite ideas: "flabby," "rounder," "fat," "round," "Piggy," "Fatso," "Bola," "Bundat," "Biik," "Bilog," "Tabachoy," "big," and "chubby," as against "thin," "nimble," and "skinny."

In sum, constructivism can be an approach to writing and evaluating informational stories for young children. As an approach to writing, it requires writers to approximate what their target readers already know because it is by understanding this that writers can help children construct new knowledge. Likewise, as an approach to writing, constructivism emphasizes the need for writers to consciously use language that is clear, coherent, concrete and meaningful, and to consider the social dimension of reading and learning as children-readers receive, process, organize, and construct new knowledge.

As an approach to evaluating informational stories for children, constructivism requires evaluators to focus on how the story exemplifies "holistic writing"—how it addresses not only the child's need to know but also the child's need for beauty and order, the need to belong, and the need to achieve competence, among others. Constructivism as an approach to evaluating informational stories for children likewise requires its evaluators to focus on language and how it is used as a tool for teaching, for introducing difficult concepts, for exploring possibilities, for

creating beauty and order, for unlocking vocabulary, and for self-discovery. Moreover, it means determining if the story lends itself to the gradual yet systematic organization, structuring, and restructuring of its target readers' learning experiences.

Finally, constructivism allows writers and evaluators alike to realize that writing and evaluating stories for children is still about knowing their target readers—young children—who they are and what they are. This, of course, implies that it is also all about writers and evaluators keeping in touch with the child in themselves.

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