FOR YOUNG CHILDREN, PICTURES IN STORYBOOKS ARE RARELY WORTH A THOUSAND WORDS

Judith A. Schickedanz • Molly F. Collins

Providing good feedback during read-alouds when young children misunderstand storybook illustrations can enhance their story comprehension.

A group of preschoolers was listening to a first reading of Rabbits & Raindrops. After the teacher read, “All of a sudden the sky turns dark, and big, heavy raindrops begin to fall” (Arnosky, 2000, p. 13), she commented: “The mother

Judith A. Schickedanz is professor emerita in the School of Education at Boston University, Boston, Massachusetts, USA; e-mail jaschick@bu.edu.

Molly F. Collins is a lecturer in the Department of Teaching and Learning at Vanderbilt University, Nashville, Tennessee, USA; e-mail molly.collins@vanderbilt.edu.
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rabbit's face looks kind of concerned, but the baby rabbits look kind of surprised by the raindrops, or maybe even curious.” Then, Mandy (all child names are pseudonyms) spoke (see Figure 1).

Mandy: The babies, right there, see bubbles. [pointed toward the baby rabbits]

Teacher: Oh, those are the raindrops splashing on the rabbits.

Teacher: [Teacher resumed reading and finished the story, turned back to a previous page, and started the story discussion.]

Teacher: How do you think the baby rabbits felt when it started to rain and they had to stop exploring the lawn and go back under the hedge for shelter?

Eric: They were sad, because they couldn't play.

Jason: They are happy.

Teacher: Why do you think they are happy?

Jason: Because the bubbles there.

Teacher: [did not respond to Jason]

Teacher: Who else wants to tell me how they think the baby rabbits felt when they had to go back under the hedge?

Despite a prominent rainstorm in this story and multiple uses of the words raindrops and rain, at least two children thought the raindrop images were soap bubbles. Young children actually misinterpret illustrations in storybooks frequently, and researchers have described this behavior in studies of children's responses to a variety of book types (Nodelman, 2001; White, 1984; Yaden, 2003).

Actually, it should not surprise us that young children have difficulty
with storybook illustrations, because illustrations are works of art that must be interpreted. Their interpretation requires thoughtful integration of information from a variety of sources. Preschoolers do not yet understand what is required. Even first and second graders still have much to learn about how these sources of information work together to convey a story’s meaning (Sipe, 2000).

In our work with story reading, we observed that preschool teachers frequently responded to children’s illustration misinterpretations with simple corrections, rather than with explanations. We also found that teachers sometimes ignored children’s comments. Teachers often told us they didn’t know how to respond, because they had “no idea where in the world a child’s comment had come from.”

As we began to work with teachers on feedback responses, we, too, often wondered why a child had misinterpreted an illustration. We soon realized that without an understanding of what might have led to a child’s misinterpretation, it was difficult to decide what to say in response.

We also noticed that, in the face of inadequate responses from adults, children typically held onto their misinterpretations, often insisting that they were right and the teacher was wrong. Moreover, children’s facial expressions and body language often seemed to indicate that they felt misunderstood.

We became concerned that failure to provide suitable feedback in these situations might reduce children’s engagement and thinking during story time. Given the importance of comprehension to children’s later reading success, and the relatively poor comprehension found among many U.S. fourth graders (National Center for Education Statistics, 2011), we thought it was important to help teachers provide better feedback in these situations. But first, we needed a better understanding of children’s thinking about stories. This need prompted us to start collecting children’s story time misunderstandings.

Although we did not confine our collection to instances of illustration misinterpretation, these turned out to comprise a large subset of items. An analysis of this subset showed that several basic sources of confusion appeared repeatedly (Collins & Schickedanz, 2012). As we became more familiar with these sources of confusion and began to share this information with teachers, we found that familiarity helped to guide the formulation of more adequate responses to children’s misinterpretations.

One purpose of this article is to help teachers understand four basic sources of confusion that contribute to the young child’s tendency to misinterpret storybook illustrations. A second purpose is to familiarize teachers with feedback strategies that can assist children in learning more about how to interpret these illustrations.

To achieve these purposes, we use “worked examples” (Trafton & Reiser, 1993), which present a misinterpretation, along with an analysis of the sources of confusion involved and suggestions for feedback to the child. In a section that follows the worked examples, we highlight and summarize four basic feedback strategies. Although we drew all of our examples from preschool classrooms, we think the lessons learned also apply to kindergarten and first-grade classrooms.

**Preschoolers’ Misinterpretations of Illustrations in Picture Storybooks**

We begin with a return to the raindrops. Then, we present three additional examples. For each example, we discuss four sources of confusion: illustration design, background knowledge, text information, and teacher behavior. We also provide a few suggestions for how a teacher might respond to each example of misinterpretation.

**Example 1: “The Babies, Right There, See Bubbles”**

**Illustration Design.** The large round raindrops in these illustrations do indeed resemble soap bubbles, even though other illustration details suggest a raindrop interpretation. For example, the line of water extending from the dark clouds to each raindrop indicates a fast downward movement. In contrast, bubbles float up and around, and only gradually down, without leaving a heavy watery trail. In representing bubbles’ meandering movements, illustrators are more likely to use much lighter marks.

Young children can miss details in these complex visual displays or fail to understand what specific details mean. Sometimes, young children do not yet have relevant background knowledge.
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Several researchers have noted that young children often ignore text information when interpreting storybook illustrations, relying, instead, on personal experience (Beck & McKeown, 2001; Brandao & Oakhill, 2005; McCormick, 1992). This occurs because young children do not yet know that a storybook’s text and illustrations work together and because they don’t yet understand that illustrations are art, not literal depictions of the world. Without these understandings, young children use personal experience, alone, to interpret what they see. Young children’s intense visual engagement with the illustrations also might decrease their attention to the text, especially in a teacher’s first reading.

Teacher Behavior. When the bubbles’ confusion first surfaced, the teacher said, “Oh, those are the raindrops splashing on the rabbits.” This is a simple correction, without any explanation. Because simple corrections don’t help children understand why they should reconsider an interpretation, they usually are ineffective.

What a Teacher Might Do. A teacher could help children notice important details by tracing a couple of water lines down from the clouds to raindrops, while explaining their likely meaning. A teacher could also prompt children to use their soap bubble knowledge more fully and to attend more closely to text information. A teacher might say:

These little circles sure do look a lot like the soap bubbles that you blow outside. But I am thinking that these are raindrops, because soap bubbles pop very quickly and the circles in the book are not bursting. Soap bubbles also float up into the air and then gradually float down to the ground, and these little circles are coming straight down. Do you see the water lines that come down from the clouds to each circle? I am thinking that these circles are raindrops, not soap bubbles, and I remember that the book said that big raindrops were beginning to fall.

The teacher’s comments model the reasoning involved in integrating multiple sources of information. In addition, the “I am thinking that” wording communicates to children that thinking, rather than a quick conclusion based on one salient visual detail and an isolated bit of knowledge drawn from personal experience, is needed.

Example 2: “I See Another One”

This misinterpretation occurred in the fourth reading of A Hat for Minerva Louise, a story about a hen who left her friends in the henhouse to explore the snow-covered outdoors. After reading, “They stayed inside all day with their heads tucked under their wings” (Stoeke, 1997, p. 3), the teacher asked the children if they could tuck their heads under their arms and if ever they did this in the morning. Next, she asked if Minerva Louise liked mornings. After quickly answering her question by saying, “She loves mornings,” the teacher turned the page (see Figures 2A and 2B). Then, Luke spoke:

Luke: I see another one on the gate! [pointed to Minerva Louise on the fence]

Teacher: Do you think it’s the same one? [slid finger from Minerva Louise on the left page to her image on the right page]
Luke: Yeah!
Teacher: She’s actually on the fence.
Teacher: “Everything was so beautiful!” [Teacher read the text on the right hand page.]

Illustration Design. These illustrations do not show Minerva Louise moving all the way to the fence, nor do they show Minerva Louise flying up to perch on the fence. The image of Minerva Louise on the fence is also considerably smaller than her image in the snow. Together, these visual features could lead a young child to think that two different hens are shown here, not two images of Minerva Louise at two different points in time and space.

Background Knowledge. The absence or misapplication of specific background knowledge about the physical world or chickens did not appear to be a source of confusion in this misinterpretation.

Text Information. The text states explicitly that the other hens did not like snowy days and stayed inside. Of course, unbeknownst to Minerva Louise, some other like-minded hen might already have left the henhouse. But, barring this possibility, the text provides information from which a child could infer that the hen atop the fence is Minerva Louise. Yet the child did not use the text information.

Teacher Behavior. In an effort to help clear up Luke’s misunderstanding, the teacher linked the two pictures of Minerva Louise with a finger movement. This gesture communicated, “The hen you think is another hen is actually Minerva Louise.” After Luke agreed that both images were of Minerva, the teacher commented only to correct his error in using “gate” (“She’s actually on the fence”).

What a Teacher Might Do. A teacher could explain why it is more likely that both images are of Minerva Louise. A teacher might say:

Oh, you see two pictures of a hen and you think this one is Minerva Louise [point to left page] and the other one here on top of the fence [point to right page] is a different hen? Actually, both pictures are of Minerva Louise. The illustration doesn’t show us Minerva Louise walking all the way from the henhouse to the fence and flying up to sit on it, but I think that’s what happened. Remember? The book said that Minerva’s friends didn’t like snow [turn back to previous spread] and stayed inside the henhouse to keep warm [return to the illustration at issue].

Minerva Louise looks a little smaller over here on the fence [point to fence illustration] than over here [point to left-hand page] in the snow. That might have made you think the hen on the fence was not Minerva. But the illustrator just made her a little smaller here on the fence [point to fence] because she’s a little farther away and part of a bigger scene.

Through such commenting, a teacher helps children begin to learn what to expect from illustrations; for example, that multiple images of the same character can appear on the same page and that a character’s size is sometimes portrayed differently in different illustrations. This comment also models the use of information from a variety of sources in the drawing of inferences about a character’s actions.

Example 3: “And That’s the Mommy Too”  
In the story Kitten for a Day (Keats, 2002), four kittens invite a puppy to play at their house. At the end, the puppy’s mother arrives to tell him to come home. The mother dog is shown with the puppy, and the four kittens are clustered together on the opposite page (see Figure 3). In a second reading of the book, Jada commented:

Jada: And that’s the Mommy, too. [pointed toward the four kittens]
Teacher: I think these are all the kittens.
Jada: And there are two babies.

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Jada: What happened to the other kittens?
Teacher: [ignored question; initiated a discussion about shadows that the kittens’ bodies cast on the walls throughout the story]

**Illustration Detail.** The head of the kitten in the back looms higher than the other kittens’ heads, making it look older. A second kitten is sitting up, making it look taller than the third and fourth kittens. In the child’s mind, two kittens present in the story, up to this point, are now missing.

**Background Knowledge.** Knowing that kittens are babies whose mothers usually keep close watch, a child might expect the mother cat to appear in the story, especially after the puppy’s mother arrived. Solid number knowledge also allowed this child to reason, “If there are only four cats here, and one cat is the mother and another is an older kitten, two babies that I saw throughout the story are now missing.”

**Text Information.** The text never indicates that a mother cat appears, nor does it ever refer to a mother cat. Thus the book’s text probably did not contribute to the child’s misinterpretation of the illustration.

**Teacher Behavior.** The teacher provided evidence and reasoning, but the “proof” seemed only to increase the child’s certainty that kittens were missing. This was the outcome because the teacher did not address the information on which the child based her interpretation (i.e., the differing heights of the kittens in the illustration).

An aspect of this teacher’s general story-reading behavior might also have played a role. In response to children’s plausible inferences about a story, when the text provided no explicit tutelage, this teacher usually said, “Well, the book doesn’t tell us about that, but books don’t always tell us everything. So, what you said might have happened.” The teacher’s general encouragement of children’s inferential thinking, coupled, in this instance, with her inability to address the problematic evidence, no doubt led this child to hold onto her interpretation.

**What a Teacher Might Do.** To address this confusion, a teacher might say:

You are right that the kitten here in the back [point to] looks much taller than the others, and this makes you think it’s the mother cat. But this kitten is standing up on its hind legs [point to] to see the puppy’s mother. If it sat down, the other kittens’ heads would be in its way.

You know that sometimes I ask you to sit down on your bottoms when you are in the front of our group, and I ask children behind you to sit up on their knees to see better. It looks like this kitten over here [point to head of the next tallest kitten] is also sitting up a little bit to see. The other two kittens are sitting down, because they can see the mother dog very well from their positions in the front.

We don’t see the kittens’ mother in this story. I think they probably have a mother, but she must be busy somewhere else.

“In the child’s mind, two kittens present in the story, up to this point, are now missing.”
Example 4: “He Found Another One!”

Children were listening to Whistle for Willie for the first time. When the teacher read, “He jumped off his shadow…” (Keats, 1977, p. 20), she used her finger to trace from the shadow on the sidewalk to Peter above it. While finishing the sentence, “But when he landed they were together again,” she pointed to the shadow on which Peter stood, on the right-hand page (see Figures 4A and 4B). Then, Brendon spoke.

Brendon: He found another one!
Teacher: Well, Peter's body made the shadows. His shadow was with him all the time.

Illustration Design. In many picture books, shadow illustrations bear some resemblance to the objects that cast them. This is true of the paper mouse shadow in Dreams (Keats, 2000), the butterfly shadow in The Puddle Pail (Kleven, 2000), and even a previous shadow of Peter in Whistle for Willie (i.e., a hint of Peter’s left elbow and his hat’s brim are in his shadow on a wall). But the shadows on the pages where the child’s confusion occurred contain no features of Peter’s body. Their absence makes these shadows rather abstract and thus harder to link to Peter’s body.

Background Knowledge. Although it's difficult to know what young children mean by what they say in a quick exchange during story time, this child apparently thought these shadows had been left on the sidewalk by another object, and Peter found them. As preposterous as this thinking seems, research indicates that young children know that shadows differ materially from solid objects, such as tables or rocks, yet still think that nonmaterial objects have some kind of substance (Carey, 1985, p. 170). This research suggests that a young child might actually think an object can leave its shadow on the sidewalk.

Because Brendon used the word shadows, a teacher might assume that he intended his use of found to mean that Peter noticed the shadows his body created (i.e., that Peter actually understood shadows), not that Peter actually found shadows. But a child can recognize a shadow and label it correctly without knowing that a shadow’s blackness is the mere absence of light, not some material substance. The teacher apparently concluded that Brendon did not have an accurate concept about shadows and, therefore, said exactly what he meant (i.e., Peter found two shadows on the sidewalk).

Text Information. The text refers to the shadows as “his,” suggesting strongly that Peter’s body made them. But if we set aside our understanding of shadows, we can entertain the possibility that this child understood the text as, “the shadows that belonged to Peter because he found them.” In this example, strong text information for an illustration’s intended meaning probably did not help Brendon, because he had an inaccurate concept about shadows.

Teacher Behavior. The teacher pointed to the shadow on the right-hand page to help children understand, “But when he landed they were together again,” even though Peter’s landing is not represented in the illustration. The distance between this shadow and the shadow from which Peter had jumped, coupled with the teacher’s direct pointing, could have misled children into thinking that this shadow was on the sidewalk before Peter reached it.

The teacher made two brief and accurate comments about the source of the shadows on these pages before she resumed reading. She did not attempt to explain how shadows are created.
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What a Teacher Might Do. The teacher could have used her finger to trace from the shadow on the left page to Peter above it, and then back down to the same shadow. Although using a gesture that interpreted the text accurately might have done little to aid Brendon, because his concept of shadows was inaccurate, careful pointing still can help children to learn the general idea that not all actions related in a storybook’s text are represented in its illustrations. Knowing this helps young children begin to create missing actions in their own minds (i.e., draw inferences).

Trying to explain shadows probably would not have helped, because it is virtually impossible for young children to understand shadows without concrete experience in creating them with a light source and multiple objects. We thought the teacher was wise not to attempt this, but to resume reading instead.

Strategies That Help Children Interpret Storybook Illustrations

The feedback suggestions we provided for the four worked examples include four basic strategies: explaining illustrations, providing or prompting the use of background knowledge, rereading or referring to the text, and modeling reasoning. In this section, we provide a bit more information about using each strategy.

Strategy 1: Provide Information About Illustrations

Usually, something about an illustration’s design contributes to a child’s misunderstanding of it. As our examples demonstrate, teachers can point out important details and explain their meaning. Teachers can also explain, through both gestures and words, any actions that still pictures cannot show, as well as actions a story’s illustrator chooses not to show (e.g., moving a finger from Peter above the shadow back down to it; stating that Minerva Louise walked all the way to the fence even though the illustrations do not show it).

When considering illustrations that are especially artistic, the teacher can comment explicitly that illustrators’ artwork is creative, just like children’s paintings and drawings. Over time, this information helps children refrain from jumping to a conclusion based on immediate first impressions, because they begin to understand that illustrations are not literal portrayals of objects and actions.

Strategy 2: Help Children Use Relevant Background Knowledge or Acquire It

For two of the examples, we indicated how a teacher could prompt children to use background knowledge. In Kitten for a Day, such prompting requires little more than linking children’s seating positions to the kittens. In Rabbits & Raindrops, the situation requires prompting children to compare details of soap bubbles to the characteristics of raindrops. More complex situations such as this one need sustained teacher guidance.

A teacher must judge the kind of background knowledge involved in each situation. Sometimes, a teacher judges that story time is not the context in which to provide a specific kind of background knowledge. In the Whistle for Willie example, the teacher seemed to make this decision, which was wise.

Even information books, with detailed diagrams and good explanations, rarely lead to adequate understanding of difficult physical concepts, if used alone (Leung, 2008). Young children need concrete experiences to develop many concepts.

Strategy 3: Reread or Refer to Relevant Text

In two of our examples, the text provided explicit information that contradicted the child’s illustration interpretation. Yet, the child underused text information or did not listen carefully when it was read. Rereading the relevant text, or referring to it, as we suggested for the Rabbits & Raindrops and A Hat for Minerva Louise examples, helps children attend more closely to the relevant text in the specific situation and also helps children learn, in general, that text information aids illustration interpretation.

Of course, in the Kitten for a Day episode, a teacher should not say, “the book didn’t say the mother cat appeared,” because this would lead...
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children to believe that important information is always provided in the text, which is not true. If children were to think it true, they would not engage in thinking to fill in gaps that authors leave in stories, which would work against good comprehension.

The shadows example also requires careful judgment, but for a different reason. In this case, the meaning of “his” is open to more than one interpretation. A teacher could say, “So Peter’s body made these shadows” to benefit children whose shadow understanding is adequate, although this information might not help a child who has inaccurate notions about shadows.

**Strategy 4: Model Reasoning and Support Children’s Attempts to Reason**

In both *Rabbits & Raindrops* and *A Hat for Minerva Louise*, the teachers offered simple corrections. Because simple corrections do not provide information or model the thinking involved in its use, children are not helped to reconsider their initial interpretations. Our suggested responses demonstrate how teachers might respond in ways that provide information and model reasoning.

**Closing Thoughts**

Many of us have taken the old adage “a picture is worth a thousand words” too much to heart when reading stories with young children, because the very nature of picture storybooks requires that children integrate information from a variety of sources.

As we focused on this work and its potential for increasing children’s comprehension of storybooks, we also thought more generally about goals that are part of current story-reading practices. We thought, too, about young children’s ability to reason. We share these thoughts here.

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**Balancing Goals for Story Reading**

A large body of research indicates that children’s oral vocabulary acquisition is aided when teachers use several word support strategies (e.g., pointing to illustrations, verbal explanations, gestures) while reading stories aloud (Collins, 2010; Elley, 1989; National Early Literacy Panel [NELP], 2008). Given the centrality of oral vocabulary to later reading comprehension (NELP, 2008), its acquisition is an important story-reading goal.

Yet our observations indicate that a primary focus on oral vocabulary while reading stories can sometimes create a barrier to a teacher’s use of strategies that help children comprehend stories. The teacher who read *A Hat for Minerva Louise* provides an example of a teacher with a rather singular focus on oral vocabulary development during story reading.

For example, she prompted the children to tuck their heads under their arms, after she read about the hens tucking their heads under their wings, but did not explain the warmth this provided on a cold day. (The text did not provide this information.) In addition, after the child’s misunderstanding about the Minerva Louise images became apparent, this teacher corrected the child’s error in using “gate” by saying, “She’s actually on the fence,” but did not explain how it is possible to infer that the two images in question are both Minerva Louise.

As a consequence of confining the focus for story reading to primarily one goal, this teacher did not use opportunities to foster children’s comprehension. Teachers can, in fact, nurture both oral vocabulary and comprehension, because explanations that help children understand illustrations also often support the meanings of key words. For example, in our suggestion for feedback in this episode, fence was used five times, with pointing to the illustration accompanying three of these uses.

Attending to both oral vocabulary and comprehension during story reading requires an equal commitment to both goals. It also requires a commitment to fostering children’s vocabulary, not only during story time, but also in other contexts. Children actually need multiple exposures to learn new words, and some of the exposures should help children gain an understanding that goes beyond the recognition level, because word knowledge at deeper levels yields the most benefit to reading comprehension (Ouellette, 2006).

Opportunities abound for supporting oral vocabulary development and other literacy-related goals outside of story time. In the case of tuck, a teacher might ask children to tuck a note into a pocket or tuck a doll under the blankets in a doll’s
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bed. To help children distinguish between gate and fence, a teacher could explain the difference when leading children through a gate to a fenced-in playground. (See the discussion in Paciga, Hoffman, & Teale, 2011, pp. 54–55.)

In contrast to word learning, we would suggest that helping children comprehend stories requires instruction primarily in the story-reading context. If a teacher does not use this context to point out or explain relevant details, link the story’s text to the illustration, or help a child activate relevant background knowledge, opportunities for children to engage in this kind of learning are simply lost.

Young Children’s Reasoning Ability

Sometimes, teachers are reluctant to support comprehension during story reading, not because they focus primarily on the goal of developing children’s vocabulary during story readings, but because they think the reasoning involved is beyond the young child’s capacity. Teachers base this concern on the fact that children’s inferences are frequently wrong. The problem, however, seems to be the use of insufficient or incorrect information, not an inability to reason (Carey, 1985; Gelman & Brenneman, 2004).

Even preschoolers can draw inferences (Kendeou, et al., 2005) and develop skill in answering inferential questions (van Kleck, Vander Woude, & Hammett, 2006). But research also indicates that younger children are not as inclined as older children to engage in reasoning on their own (Barnes, Dennis, & Haefele-Kalvaitis, 1996). It’s unclear why, although research on cognitive and social development indicates that children usually begin to engage in a behavior spontaneously only after a period of adult prompting and scaffolding (see Berk, 2002, p. 231, for an example).

Is it possible that teachers and parents rarely expect young children to reason about stories? Maybe. Perhaps, then, it is no coincidence that our Kitten for a Day example of child reasoning involved a teacher who accepted children’s probable inferences about story events. She also routinely provided evidence, not simple corrections, in the face of children’s improbable inferences, and she usually walked children through evidence to reveal her reasoning. Although this teacher was not successful in the Kitten for a Day example, her attempt caught our attention because it differs from the simple corrections and ignoring of children’s comments or questions that dominates the teacher feedback we have collected (Collins & Schickedanz, 2012).

We agree with Duke and Carlisle (2011) that the modeling of reasoning by parents and teachers of preschoolers might predict their later comprehension skill. Although we can’t say exactly what it might be worth to young children’s learning if teachers placed a higher priority on opportunities during picture book reading to develop young children’s comprehension skill, we think it holds enormous potential for fostering young children’s inferential thinking.

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