AUTISM, LITERACY, AND EMOTIONAL THINKING:

THE 5 STAGES OF BIBLIOPHILIA

Richard Solomon MD

Autism, Literacy, and Emotional Thinking: The 5 Stages of Bibliophilia

Helping Children with Autism Learn to Love Books

(and Become More Social!)

By Richard Solomon MD

CONTENTS

Introduction	3
Overview	6
The 5 Stages of Bibliophilia	9
Conventional Readers	38
Skilled Readers	44
Summary	51
References	53
Appendix A	56
Dr. Richard Solomon (BIO)	60

INTRODUCTION

The human soul, our subjectivity, our most intimate, creative, and complex thoughts and feelings, have been and will always be best expressed through imaginative stories. The love of literature leads to the deepest understanding of what it means to be human. From the Bible to Shakespeare to The Three Little Pigs, the stories we tell ourselves represent the wisdom of our species in all of our glorious complexity.

I am going to describe, based on my decades of experience as a developmental and behavioral pediatrician (and with help from The Three Little Pigs), how learning to read books in a fun and playful way is one of the best ways to bring the child with an autism spectrum disorder (ASD) into a shared social world and help them understand and imagine life in a more complex way. I am convinced that literacy, especially the reading of fiction, is the high road to high levels of language, imagination, and social-emotional intelligence for all children including those with an ASD.

What is an Autism Spectrum Disorder?

Autism spectrum disorders, according to the psychiatric bible, the Diagnostic and Statistical Manual, 5th Edition, (DSM 5), are characterized by two primary criteria: 1.) Difficulties with *social communication* and 2.) *repetitive, stereotyped behaviors and interests*. Secondary criteria list delays in language and/or sensory issues. Children with autism have a natural tendency to socially isolate in an effort to 'keep the world the same,' remain neurologically regulated, and emotionally comfortable. I will refer to 'children with an ASD' because the autism spectrum is quite broad, with some children having no words and being very hard to engage socially and others with completely typical language and a strong interest in being social. In other words, this is a very neurodiverse group of people! My focus will be on children from roughly 18 months of age to elementary school age children.

Anatomical studies of the brains of children with autism have consistently found that, in multiple or specific brain areas, the networks of nerves (aka 'neurons') are disorganized and/or under connected (Minshew et al, 1997). The way I explain this to parents is that the child's brain is like a net that is loose and can't capture the complexity of the world, especially social complexity. The basis for this brain profile is largely genetic though environmental causes (e.g. extreme prematurity, older parental ages, etc) can contribute to the condition.

The saving grace for these children is something called *brain plasticity*, the ability of the brain to form new neuronal connections over time especially when children are young. The research evidence, confirmed by my clinical experience, is that, because of brain plasticity, children with an ASD can improve dramatically in their IQ and their functional development (i.e. social language and social abilities) when given optimal, intensive early interventions (Lord et al, 2001; Steinbrenner et al, 2020; Binns & Oram-Cardy 2019; Fein et al, 2013) including especially the playful, social interactions that happens around books and reading. But you have to do it the right way!

The Right Way

I want to talk right away about the right way. While it is true that children with an ASD have a genetic neurological basis for their condition, it is also true that they are children first. Their full humanity—their intent, their ideas, their feelings— should be honored and respected. There should be utter regard for their perspective. The approach that I will be sharing with you honors the children's neurodiversity and is not based on *ableism*. Ableism is when we 'incorrectly assume that there is a set of definable social norms and rules that exist for people to follow.' As *ableists* we can easily fail to empathize with those who do not fit our definition of 'normal.' We the *neurotypical* are imposing our norms on the *neurodiverse*. Instead of thinking of the child as having 'a disability,' we should instead think of the child as being 'differently abled.' We say that people with an ASD have problems with empathy. But what about those of us who are neurotypical who are not empathizing with the differently abled?! In short there is a 'double empathy' problem (Milton, 2012). I totally agree with this perspective.

Now, does that mean we should leave the child with an ASD 'to do their own thing?' Not at all. It's the parent's job to help their child succeed in society whatever that means to each parent. My fundamental philosophy, based on my experience with thousands of children with an ASD, is this: 'When you accept your child exactly where they are at developmentally, that is the best way to help them reach their full potential.' It so happens that the path of any child's potential, including the child with an ASD, follows a predictable progression, much as a flower follows a predictable progression toward flowering when you give it water and the right soil. By using books and reading in a special fun and interactive way designed to appeal to the child with an ASD, we can help the child grow, develop, and flower to reach their potential.

OVERVIEW

I'll start with the importance of storytelling and trace the history of literacy. Then, with the help of the classic story of The Three Little Pigs, I will describe how to build the brick house of literacy by listing and detailing the '5 Stages of Biblophilia' i.e. How to appeal to children with an ASD so that they love books.

Along the way, with both evidence from recent research (see references) and experience based on my clinical practice, I'll describe how children with an ASD *develop a desire* to become fluent readers who can read with comprehension though I'm not going to focus on reading skills per se as this is the domain of elementary school curricula.

Though *literacy* is defined as the ability to read and write, I will not be focusing on *writing* or *spelling* though I will briefly discuss both *hyperlexia* and *dyslexia*. I will also not talk too much about sensory issues that children with an ASD may have with the learning environment, important as they are (see the link to Temple Grandin's suggestions). I'm going to focus on how to engage children with an ASD in fun and interactive ways around books.

I'm writing primarily for parents, but I expect that this topic will be of interest to any child development professional (e.g. early interventionist), educator, and/or pediatric professional (e.g. speech/language pathologist, occupational therapist) working with children who have an ASD. Following the reference section, I have included a list in Appendix A of the best books of all time for children, based on developmental stage.

Most importantly, I hope to show, with practical strategies and many

examples, how literacy can lead to emotional intelligence (EQ) in children with an ASD so the Big Bad Wolf won't blow down the house of your child's development!

A Short History of Story Telling & Literacy

Once upon a time there were no books. In fact, for the past 100,000 years we lived in *pre-literate* hunter/gatherer (HG) societies. But one thing from the beginning that always existed, even in HG societies, was storytelling. Daniel Smith (Smith et al, 2017) and his fellow anthropologists studied narratives (stories) from several HG societies and discovered similar themes. Seventy percent of HG stories concerned social behavior including food sharing, marriage, hunting, and interactions with in-laws or members of other groups including strangers. Overall levels of cooperation were higher in camps with a greater proportion of skilled storytellers! In other words, storytellers coordinated social behavior and promoted cooperation as well as created community. Storytelling is in our DNA with important implications for children with an ASD.

It wasn't until 3500 B.C. that the very first words were put onto papyrus and not until 23 B.C. that the very first books appeared in Rome, the Middle East, and Asia. Once Gutenberg invented the printing press in 1430 A.D. everything changed. In the 1600s, the press was used for books having spiritual edification, especially the Bible. In the 1700s, literacy in the form of 'the free press' helped Americans stay safe from tyranny. In the 1800s people used literacy as a form of social status because *they* knew how to read and write (and others didn't!). By the 1920s literacy reached 70% in the United States and served as the basis for universal public education i.e., 'the Three Rs.' Literacy is now at 86% in the U.S. (not a great number compared to other developed countries). Over the last 10 years, sadly, functional literacy rates have *declined* with 1 in 4 children not knowing how to read by 4th grade!

The cause? According to the National Education Association the decline in literacy is due in significant part to a dramatic increase in the number of hours children watch 'screen-based media.' Screens are a major threat especially to children with an ASD. There is a huge difference between reading a book and watching screens in terms of their impact on the brains and minds of children. Reading engages the child's imagination. Watching screens puts the mind in neutral (or worse, addiction mode). The Big Bad Wolf is going to get your children if they spend too many of their hours on screen time!

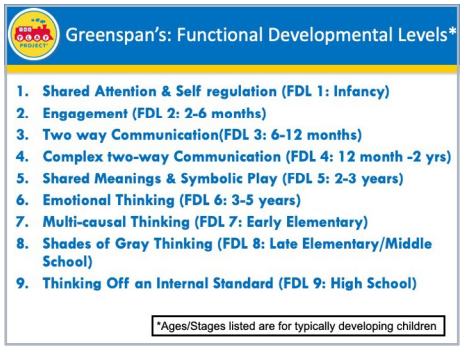
So, storytelling is built into our DNA. Stories transport children, especially children with an ASD, to worlds beyond their everyday experience; stories increase perceptivity (description), understanding of people (character), actions over time (plot) and increase social-emotional sophistication. And to think it all started with 'once upon a time' around a campfire 100,000 years ago! So, let's talk about how to help children with autism learn to love books through the *5 Stages of Bibliophilia*.

THE 5 STAGES OF BIBLIOPHILIA
(Love of Books)

In the beginning was the book. And the book was good. And parents used the book to engage their children. And the children loved the book and became smart, imaginative, and social.

In this section, I will talk about how children with an ASD come to love the book by traveling down the long and winding road of *The 5 Stages of Bibliophilia*. At the end of the road, hopefully, our child will have progressed from a simple interest in the physical book, to being read to, to an appreciation of the ideas and stories in the book—the path of their potential.

Over decades of work with children who have ASD and their families, I have been guided by the developmental framework, the Functional Emotional Developmental Levels (FEDL), of my colleagues Stanley Greenspan MD and Serena Weider PhD (Greenspan, 1992; Greenspan & Weider, 1997) and their DIR—Developmental, Individual Differences, and Relationship-based—model. 'Functional emotional development' is the stage-based progression toward which all children, including children with an ASD, become able to function socially, aided and fulfilled by literacy. As we go, I'll give you charts with quick thumbnail sketches of each of the FEDLs but let's start with the list and the ages at which they emerge in *all* children:



I'll use *The 5 Stages of Bibliophilia*—and the story of The Three Little Pigs—to help you understand the nature of each of these FEDLs. We will start with the children who have trouble with simply sharing attention (FEDL 1) and being engaged (FEDL 2) and progress to the higher capacities. Speaking metaphorically, we will start with the house of straw that is easily blown down and overwhelmed by the demands of life, then build to the next level of development that is stronger like a house of sticks, which gives the child the skills to make sense of the world until we help the child attain the strongest developmental level he or she is capable of, like a house of bricks, so the Big Bad Wolf—the demands and challenges of the world—will be handled in a skillful and effective way. We're going to outsmart that Big Bad Wolf!

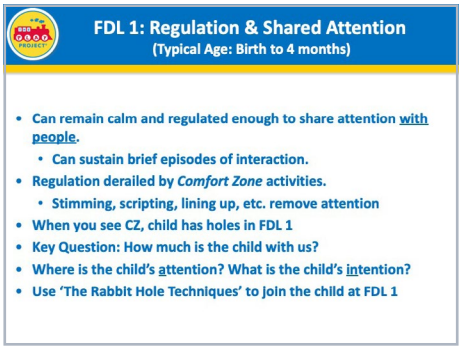
Before we get started, I want to say a word about 'age.' Though these FEDLs are based on typical development, a child with an ASD is usually delayed in development compared to peers of the same age. Having an ASD costs your child on average at least 2 years of a neurotypical development. So, a 3-year-old child with an ASD is likely to be functioning developmentally like a typically developing 1-year-old. This is not a problem. As a developmentalist, age doesn't matter. In fact, I am a rabid *anti-ageist*. What matters to me is who your child is and how they are functioning socially and emotionally. When you accept your child exactly where they are at developmentally, that's the fastest way to help them reach their full potential. So, I will *not* be basing my approach on the child's age as much as on their functional emotional developmental profile which will be unique to them.

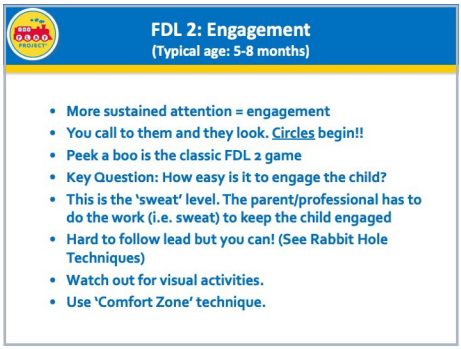
Bibliophilia

SENSORY SEEKER STAGE

(FEDL 1-3)

Let's start with Bibliophilia Stage 1. Regardless of age, ask yourself if your child can *share attention (FEDL 1)* and *stay engaged (FEDL 2)* long enough to *interact in a back-and-forth manner (FEDL 3)*? Does your child turn to their name when called *(FEDL 1-3)*? Can they play simple social games like peek a boo *(FEDL 3)*? (Are you getting a feel for the FEDLs?) Here are the thumbnails for FEDL 1 & 2.





If your child, regardless of age, is having trouble sharing attention and staying engaged (FEDLs 1-2), then they are not going to be ready for actually reading a book and won't find words meaningful or interesting.

On the other hand, children at Greenspan's FEDL 1/2 may find *flipping* the pages of books fun. In which case, flip away and enjoy page flipping with them and make it fun. They may like seeing the pictures as the pages turn. They make like the *sounds* you make as they turn the pages. For children at the lower FEDLs the book is not a book! It's a source of visual, tactile, oral, and auditory (i.e., sensory) stimulation.

I like to 'narrate' the activity in dramatic, silly, and fun slapstick ways. Here are a few examples:

- Label one image on the page with a big, loud finger point: "Pig,

Wolf, House". It's not the word, it's the *sound* of the word and your gestures that matter to the child at this level.

- As the child 'visually stims' (visually examines the book) while flipping the pages of the book you say, as each page is flipped, "*Flip the page*," emphasizing the word *flip*. It's not the meaning of the word, it's the *sound* of the word (viz. onomatopoeia).
- *Touch each page as the page is turned* and go 'boom' every time you touch a page.
- Then ask yourself, 'What are 10 other fun ways I can join my child around a book?' We call this technique 'theme and variation.' For instance, you can take the book and bonk it on your head and loudly say, "Ouch!." I'll leave it up to you to make the rest of the list.

The Interactional Process

But, and this is very important, don't teach and, for goodness sake, DON'T READ THE BOOK! The child should be having a good time with you interacting around the book as *an object*. You are watching the child closely to see what *their (perhaps simple) idea* is. You are joining. You are following. What if their idea is to chew the book or throwing the book, then you join the chewing (maybe by wiggling the book in their mouth in a fun way) or bringing the book back so they can throw it again. "Bye bye book!"

Many of my patient's parents have told me that they don't like 'doing autistic things' like letting their child just flip pages of the book, or chew on the book, or throw the book. "*This* is going to help my child?!" they ask me skeptically. I understand. It seems a little counterintuitive, but I try to convince them that "Yes, this will help your child." By joining and accepting your child's intentions and ideas in a fun, playful way, the child WILL make progress developmentally.

As you join the child in sensory play around a book, be aware of the *interactional process*, the IP, the back and forth of interaction. You are 'reading' the child—pun intended—to join him or her in a way that makes you fun to be with. Interactions are made up of back and forth *circles of communication* (COC).

A circle of communication has two parts: opening and closing. 'Opening' a circle means initiating a social interaction and 'closing' a circle means responding to that open circle. If I offer to slap you five, I'm opening a COC; when you respond and slap my hand back you are closing that COC. Am I opening a COC with you, dear reader? If you are saying to yourself, "That makes sense" then you are closing a COC with a thought in response to me! Get it? A continuous social encounter is comprised of dozens of COCs often way too many to count. These COCs include facial and body gestures, eye contact, head nods, etc. as well as words.

An ideal IP is a contingent, reciprocal, balanced, social interaction. *Contingent* means I do something *because* you did something first. *Reciprocal* means the interaction is back and forth (i.e., has COCs). *Balanced* means one person is not dominating the interaction and opening most or all of the circles; we are taking turns in the interaction. And *social* means the interaction is not about things but about people.

Intensive Intervention

In order for the child with an ASD to truly make progress in their functional social abilities, there must be *intensive intervention* provided on a daily basis (Lord et al, 2001). The dose matters. Intensive intervention means:

- Spending 1 to 2 hours per day total time (through a few play sessions of 15-20 minutes/day and through all daily interactions)

- Providing engaging and fun interactions one-on-one (adult with child)
- Using an evidence-based approach (Binns & Oram-Cardy, 2019; Steinbrenner et al, 2020) that has been shown to promote the child's functional social emotional development

These levels of Bibliophilia are a good introduction to the way that parents can provide intensity to their children through books. But I want to emphasize that all interactions throughout the day are what matter and parents should 'make every interaction a good interaction' i.e., one that is engaging and opens and closes lots of COCs.

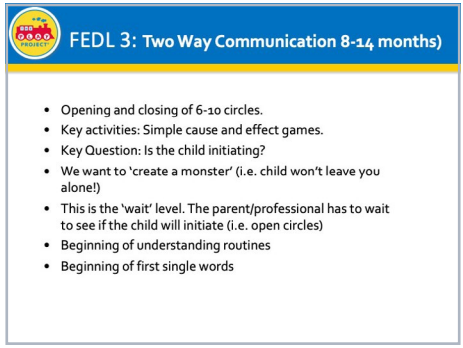
Bibliophilia

THE LABELER STAGE

(FEDL 1-3)

So, in Bibliophilia Stage 1, a book is not necessarily a book but an object. When you 'read' the child to see what they are enjoying in the book and then join them in their enjoyment, you are making the activity more fun with *you* than when they do it alone. *When you do what the child loves, the child will love to be with you!*

For those children entering Bibliophilia Stage 2 (FEDL 3 & 4) who ARE able (regardless of age) to sit, pay attention, and actually look at the pictures on the page with some enjoyment and recognition, my advice still is DON'T READ THE BOOK!! This is the picture stage. Just look at the pictures, name the pictures and point out parts of the pictures.



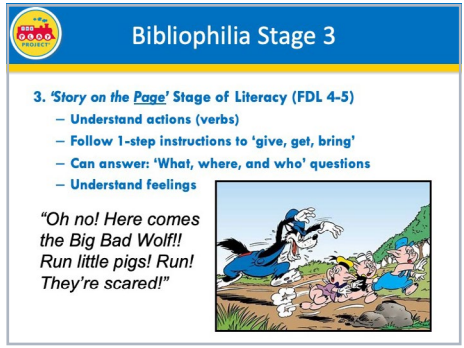
At this stage COCs (Circles of Communication) described above continue to be very important. FEDL 3 is all about back and forth interaction, the IP. You will know whether or not what you are doing is working because the child will stay with you, *open* (initiate) circles for 'more,' look at you, and love being with you, as you engage them around the book, labeling and acting silly and singing dramatically. You should still honor their idea whatever it is. Don't forget to 'read' their cues, go slow, follow their lead-idea-intent.

The child at FEDL 3-4 is beginning to be purposeful. They are beginning to talk with single words. They love simple cause and effect games 'open the book-close the book.' They LOVE naming and labeling and sequences. So, name away! Label pictures, letters, numbers, colors, and shapes. For them, it's a beautiful thing, so satisfying to have a one-to-one correspondence of a word and a picture. They also LOVE repetition and rhythmic sequences. It makes the world make sense. Label each picture and each part of a picture (like eyes, nose, mouth, ears) with verve and rhythm and music. There should be happiness in your voice with a sense of surprise to make it fun and interactive. "Wow did you see that train?! And look at those wheels! Woo woo. Chugga chugga woo woo!"

Bibliophilia

THE STORY ON THE PAGE

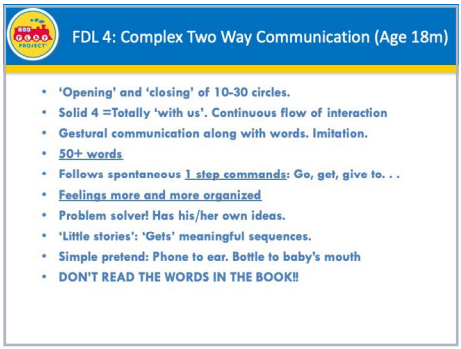
(Greenspan FEDL 4-5)

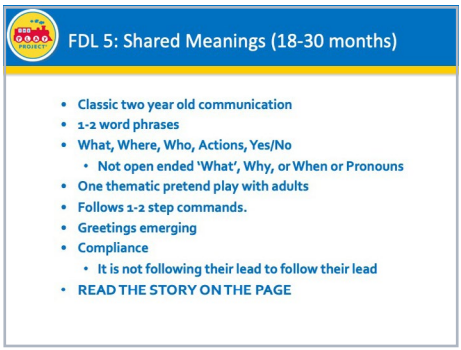


Let's move on to Bibliophilia Stage 3 and FEDLs 4 (Complex 2-way Communication) to 5 (Shared meanings). For those children who can understand ACTIONS, still DON'T READ THE BOOK! *Talk* about what's happening on the page. This is STORY ON THE PAGE stage. These are the FEDL 4 to 5 children who understand *actions*. So the subject-verb-object (SVO) design of sentences is going to make sense. They may even like to answer the simple wh- type questions:

- What is this?
- Who is this?
- Where is this?

"Where is the pig who is dancing?" or "Oh no! The Big Bad Wolf is chasing the Three Little Pigs!" Try to get dozens of COCs in a given encounter around a book. Dwell in the interactive process; enjoy the interaction; make it last; add some COC consciously. Have fun with it.





Remember the child with an ASD, especially at Bibliophila Stage 3, still LOVES one-to-one correspondence no matter what it is. But this step is more complicated than just one-to-one naming. These children understand the *meaning* (FEDL 5) of simple objects and actions, "Oh look. The dog is sleeping. There's a cow. He's eating grass. What does the cow say? Mooooooo!" Subject-verb-object (SVO). "Thomas the Tank Engine (subject) is going up (verb) the hill (object). Up, up, up. Go Thomas go."

Take advantage of this appreciation of labels, pictures, actions, letters, numbers, colors, and shapes. For them, putting a name with a thing is very exciting. You can even begin to spell—not to teach spelling— just to label a letter with a sound. They won't even know they are *learning phonics*! This labeling of objects and actions has the advantage of promoting sight words, the first form of reading. So labeling is great but don't forget to add some pretend.

Pretend & Imagination

A word about pretending. The word '***Imagination***' is bolded, with a capital 'I', italicized, and underlined, the only word to receive this royal treatment. Here, at Bibliophilia Stage 3 your child has now entered the magical world of their own ***Imagination***. Starting with FEDL 4 and developing by leaps and bounds to FEDL 6 and beyond, the child's ***Imagination*** is like a magnificent, magical, beautiful flower that, if nurtured, will blossom. ***Imagination!*** Everything humans achieve requires ***Imagination***. Every object, every invention, every book, every single thing in your house is a byproduct of someone's ***Imagination***.

It is a source of sadness to me that so little attention is paid to the imagination of the child with an ASD, especially when that magical flower of imagination is one of the secrets to the child's potential. Keep the child's imagination in your mind because every single thing about reading requires it. Eventually the child will be able to imagine the future, recall the past, imagine what others are thinking and feeling, and use their imaginations to create new things in the world through writing, art, music, drama—the very pursuits that make us unique as a species.

So, when you are reading, try a technique called *'everything come alive.'* Talk to the pigs, "Hi pig," the wolf, "No no no wolf! Go away!," the house, "Brick house, you're a very strong house." Be silly, be fun, be dramatic and watch the child to see if *they* think you are fun.

Now I will contradict myself. You actually can read some books. This is where some of the best books actually work AS BOOKs. I love for instance the *Very Hungry Caterpillar* or *Brown Bear Brown Bear* or *Green Eggs and Ham* or even *Good Night Moon* (see the list of the best books for children in Appendix A). The words in these books work so well together. That's why they are great. But always sacrifice reading the book for connecting with the child in the *process* of reading the book. The child's interests, autonomy, and agency come first!

Book Suggestions

For this stage, I like the Fisher Price Little People on the Farm book for its great pictures and the little flaps that create suspense: "I wonder what is under this flap? Oh, it's little chickens!" "Where is the dog who's eating? That's right! Yum Yum Yum Yum Yum Yum Yum."

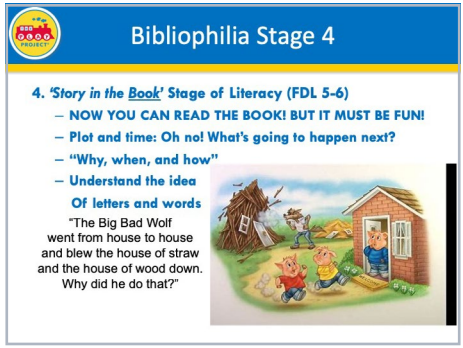
I also like Richard Scary books (They are not scary at all): "Oh look there's Lowly Worm. He's riding in his car." "O look, there's Fireman Doggie. He's putting out the fire." (Touch the flame with your finger. . .) "Ouch that fire is hot! Don't touch the fire! Go ahead touch the fire. DON'T touch the fire."

At the risk of repeating myself, this is still a stage where the interactive process (IP) matters. Go slow. Don't take over. Don't assume anything. You must be as tentative as a cat on ice, as aware as a bird at the feeder. Be aware of the back and forth of circles of communication. Books are your path for engendering interaction, but IP is the key and should be happening throughout all daily activities, not just reading.

Bibliophilia

THE STORY IN THE BOOK

(Greenspan FEDL 5-6)



Finally, we come to those children, Bibliophilia Stage 4/Greenspan FEDL5-6, who can understand a simple plot; not just the story on the page, but THE STORY IN THE BOOK! The child with an ASD might not be ready for Bibliophila Stage 4 until age 5 or 6 (or older) whereas typical children usually understand and enjoy simple plots by age 3 to 4. This stage of Bibliophilia gets both complicated *and* easier because we are now on the familiar territory of telling or reading a story and approaching the usual methods for engaging children around books. We are getting to true literacy and it is here that reading promotes high-level thinking and feeling leading to higher levels of EQ.

But is there any way to know for sure that the child with ASD is ready for the 'story in the book'?

In fact, there are two simple questions you can use that will tell you that the child is ready:

- What did you eat for breakfast?
- What do you do when you're hungry? Or tired? Or thirsty?

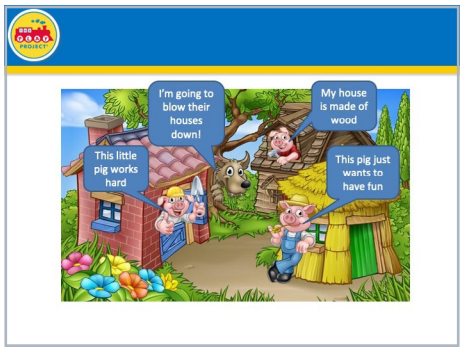
The first question is a 'when' question. If the child can answer this question, then they are living *in* time and have the ability to create a mental construct of the recent past and the imminent future. Parents can say, "Well that was a good breakfast. You had eggs and toast and milk." and the child will think, "Yeah, I remember that." Or, "We're going to go to grandma and grandpa's after lunch." And the child will think, "I can't wait to see grandma and grandpa." Or 'The Big Bad Wolf is coming soon. Watch out little pigs!" And the child at Bibliophilia Stage 4/FEDL 6 will be hooked on what will happen next, the essence of a good plot.

The second question—What do you do when you're hungry/thirsty/tired?—is a type of 'why' question but 'why' questions are a bit tricky. Even typically developing children don't start by asking or answering 'why' questions with the word *why*. The typical child's first use of the word 'why' is usually a 'whining why.' "Jason you have to stop your video

game and come to dinner." "Whyyyyyy?"

The child who can answer question 2, though, understands the essence of a 'why' question, namely the ability to *put two ideas together logically*. When you ask, "What do you do when you're hungry? Or tired? Or thirsty?" If the child says, "Eat." or "Sleep." or "Drink." (or something similar), then the child has put 2 ideas together logically. I eat pizza *because* I'm hungry (two ideas: eat and hunger). Why do you drink? Because I'm thirsty. Get it? "It's raining outside. We need to get our umbrellas or we'll get wet." Rain implies wet—two ideas *logically* connected. The Big Bad Wolf is chasing the pigs *because* he wants to eat them up! And that's a sad story but true.

If the child passes the two-question test, then (finally!) YOU CAN READ THE STORY IN THE BOOK (maybe). I would still be careful about reading the book verbatim. Remember, reading should always be understood as an interactional process (IP). You should *ask questions about the story* that have to do with 'what', 'who', 'where', 'when' (time) and 'why' (cause/effect). You'll want to *summarize the story* as you go along in a way that the child will find interesting (see plot summaries in the picture).



Be dramatic and fun! While making a wolf's claw with your hand, sing in an operatic voice: "O no! O no! Here comes the wolf!" which is

much better than reading the book: "Then when the Three Little Pigs were going to sleep, the wolf began to creep up on their houses." Visual aids also can help students understand character's thoughts (as above). Draw thought bubbles over copies of pictures from text and ask the child, "What do you think the wolf is thinking?" Before reading a book, parents, teachers and school staff can make 'story maps' or outlines to highlight, summarize, and predict the plot or main ideas before, during, and after reading a narrative.

Being Read To

I also want to make it clear that up through this 4th Stage of Bibliophilia the child does not have to be "ready to read" to begin the literacy process, nor does the child need to have great oral language abilities. Reading to the child gets the child ready to read. Frequent and repeated reading of texts by the adult is not only a source of great enjoyment but it also increases oral language abilities and attention. Studies show that *being read to* decreases echolalia, stereotypic behavior, and even verbal outbursts. It promotes students' recognition of familiar words and leads to comprehension of plot and information (Whalon, 2018).

Sight Words

So, being read to leads to sight word recognition. Sight word instruction is an evidence-based practice for students with an ASD autism (Zein et al, 2014). Even those with no prior reading instruction learned to identify printed words. Labeling objects with words and pictures promote sight word reading. For example, you can tape sight words on furniture: chair, table, cat. (Just kidding. Don't tape your cat!). *Singing* to transmit messages is a way of helping to label the child's world. I particularly like the song for London Bridge. "Now it's time to take

your plate, take your plate, take your plate, now it's time to take your plate to the si-ink!" A picture can show the child taking their plate to the sink.

The Book of Life

Studies also show that functional literary tasks built around routine life events improve book handling, alphabet knowledge, written language attempts, and oral language (Lanter & Watson, 2008). For instance, let's say Toni, a child with an ASD at Bibliophilia Stage 4, loves going grocery shopping especially when buying food to take on a picnic. Toni loves picnics!

- You might first tell a story with Toni as a co-creator. "Once upon a time, there was a little girl named Toni who went to the store with her mommy in the car to buy food for their picnic in the park!" Invite Toni to add to the story by saying something like, "When they went to the store Toni bought. . . " and let Toni fill in the story if she can.
- Then, with Toni's full participation, locate the grocery store on the Internet, singing (To London Bridge again), "Let's go and find the store, find the store, find the store. Let's go and find the store, we're going on a picnic!"
- Find it on Google Maps or Map Quest, "There's Kroger's! (Toni's favorite store.) Let's go Krogering!"
- Then make a shopping list, "What should we buy at the store, Toni? Help me make a list."
- You could even draw out the adventure together on paper with stickers or markers called: "Going to the store for our picnic." If Toni was interested, you could make a little paper storybook, with mommy and Toni as characters, the car, the store, the picnic. The book of life!

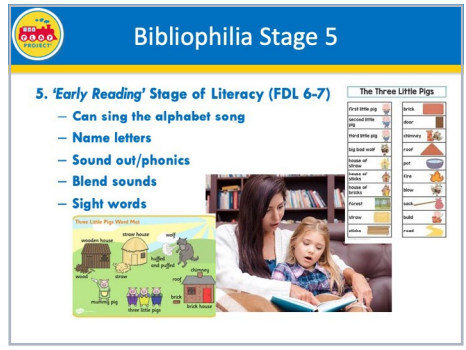
- Later you can recall the experience using pictures from your smart phone, "Oh look Toni, there you are with the picnic potato chips!" or other artifacts—like a receipt or coupons—from shopping. Each of these 'literacy' experiences for the child with an ASD contribute to the child's general knowledge from their prior knowledge.
- Finally, you could develop vocabulary with drawn or printed pictures specific to the experience—'sandwiches,' 'potato chips,' 'chocolate milk,' 'blanket,' 'picnic basket' where Toni begins to learn about print concepts such as writing from left to right.
- Finally, You can use a dictionary with Toni sitting in your lap to look up a word Toni might not know, like 'coupon.' "Toni, look (holding up the long piece of paper), we got 'coupons' from Kroger's. Hmmm, what's a 'coupon'? Let's look it up in the dictionary. 'C' 'o' 'u' 'p' 'o' 'n'. Here it is! 'A small, printed paper that gives us a discount, money back the next time we shop.' Yay, money back." Even if Toni doesn't completely understand, hopefully she'll find this magical book called a dictionary fascinating.

Dictionaries!

Speaking of dictionaries, dictionaries are critically important to helping children at Bibliophilia Stage 4 (FEDL 6) and beyond gain literacy skills. Even though they are not ready to use a dictionary, introducing this magical book early is fun. Parents should buy a children's dictionary and regularly look up words. Do not use the Internet! (That's too easy) A real handheld child's dictionary with lots of pictures promotes sight word identification and introduces the child to definitions. Make looking up words an amazing experience: "Toni, in this magical book are ***all*** the words in the world! Amazing!"

Bibliophilia

EARLY READERS



It's been a long and winding road to get to Bibliophilia Stage 5, the stage of *early reading* also known as the stage of 'emergent readers' (Jacobs & Richdale, 2013). In this section I'll be referring to the scientific literature regarding early reading and autism and I may refer to the child as a 'student.'

Let's start with an interesting finding of researchers in this field that confirms what I've seen in my practice: When matched for IQ, students with an ASD tend to be *better* than their same age peers when it comes to *fluency* but worse when it comes to *reading comprehension* (RC) (McIntyre, Solari, et al, 2017).

What's the difference between reading fluency *with* RC and just reading fluency alone? How can parents and other caring professionals promote complex RC in children with an ASD? This is where Bibliophilia Stage 5 matters for children who have, at a minimum, achieved solid social functioning at Greenspan FEDL 6, with skills listed in this figure.

Screen Warning: Beware!

Before we get too far into Bibliophilia Stage 5 and emergent reading skills, let me first say a word here about *screens*. The word is 'bad,' as in Big *Bad* Wolf. According to the National Endowment of the Arts (NEA), our society now makes viewing media so easy and alluring that literacy in the United States has actually declined! Careful curating of screens is recommended by the American Academy of Pediatrics. For a good percentage of the children with ASD that I care for, allowing too much media exposure (>2- 3 hours per day total time) can blow your child's house down!

The American Academy of Pediatrics has recommended that *typically* developing children before the age of three not spend more than 1-2 hours per day watching screens including TV, video, and/or social media. Three years old in Greenspan terms is FEDLs 6 (see above). If, as a

rule, children with an ASD lose about two years of their developmental life, then most children with ASD should not be spending much time watching screens before the age of five or six! I recommend limiting all screens to 1-2 hours per day. If you allow more, what happened to Jimmy Jet, as foretold in a poem by Shel Silverstein, might happen to your child.

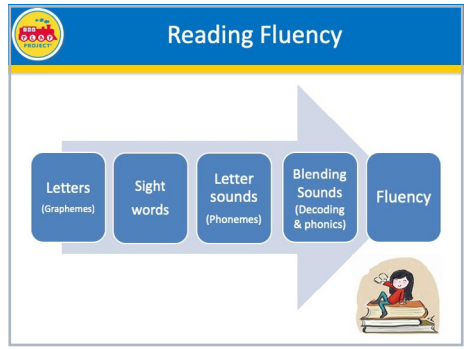
And his brains turned into TV tubes,
And his face to a TV screen.
And two knobs saying 'vert.' and 'horiz.'
Grew where his ears had been.

Reading Fluency vs Reading Comprehension

Okay, I feel better knowing that I've warned you about the Big Bad Wolf of screens. Let's start this section on reading fluency and reading comprehension with an important general rule: *Children with an ASD who have successfully achieved Bibliophilia Stage 5, are not only able to understand the 'story in the book', but they are also capable of early reading skills* including recognizing letters and sight words and knowing that letters make sounds. Stated in the negative, most children with an ASD no matter what age are not going to be ready to sound out words *until* they have achieved Bibliophilia Stage 5.

Now I will contradict myself. While this general rule above holds true for *most* children with an ASD, research shows that many children with ASD are precocious at reading fluency (McIntyre, Solari, et al, 2017). Why? Because they often have a compulsive pre-occupation with letters, relatively strong visual spatial skills, and good visual memories. All of which makes learning letter recognition and sight words (the first steps in fluency) relatively easy. These talents, when combined with a not uncommon ability to sound out letter combinations, leads to *decoding and phonics* (see chart). This makes many children with an ASD *appear* to be ready for reading comprehension when they are *not*. This is closely related to *hyperlexia*.

Let's highlight this distinction starting with ***fluency***, the ability to decode and sound out words; then we'll end with ***reading comprehension or true literacy***, the ability to extract meaning and real-world implications from a text.



Hyperlexia and Dyslexia

One of the most astounding examples of fluency, not uncommon in children with an ASD, is *hyperlexia* defined as having "exceptional word reading skills that are well in advance of reading comprehension" When I was practicing as a general pediatrician, I'll never forget my first experience with hyperlexia when the 2-year-old, despite his developmental delays, clearly and articulately read the immunization schedule on my wall! "Diphtheria, Pertussis, Tetanus, Haemophilus influenza"! He couldn't speak very well but, boy, could he read!

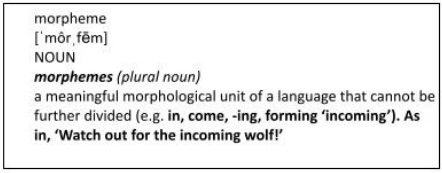
Then there is the child with good ability to understand spoken language but has trouble with decoding and phonics—the opposite of hyperlexia. This is called *dyslexia*, which is estimated to occur in 5-10% of the general population. Though I have not been able to find evidence that dyslexia is more common in children with an ASD, I have certainly seen my share of children with an ASD who have dyslexia. Dyslexia should be addressed by reading specialists in the schools (Karipidis &

Hong, 2020). I also discovered this important talk by Tim Conway PhD about recent interventions for dyslexia.

Phonological Awareness (PA)

When a child with an ASD has *truly* reached Bibliophilia Stage 5, without hyperlexia or dyslexia, he or she is *both* ready to be a fluent reader *and* ready to read with comprehension. Let's first talk about fluency (see figure), then we'll move on to reading comprehension, starting with the cornerstone of fluency called *phonological awareness* (PA).

PA is the reading experts' technical term for the capacity of the child to recognize that letters (graphemes) have sounds (phonemes) and, when letter-sounds are blended together they form words (Ehri & McCormick, 1998). In the 'full alphabetic phase' of PA students growing knowledge of 'grapheme-phoneme correspondences' enables them to decode unfamiliar words fairly quickly. In the 'consolidated alphabetic phase' students are able to identify frequently reoccurring letter patterns such as 'morphemes' (see definition below), syllables, or sub syllabic units such as 'onsets' (beginning sounds) and 'rimes' (ending sounds). In the word cat, c- is the onset and -at is the rime. This is also known as the CVC (consonant-vowel-consonant) approach to learning phonics.

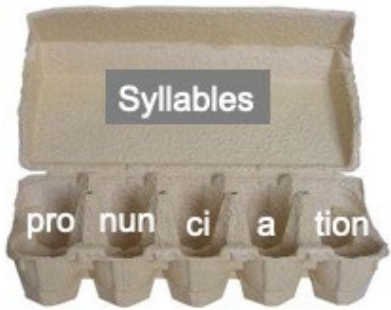


How can we help our children gain PA? Brick by brick! Practicing letter sounds, then combining letter sounds to form short words, then. . .

Learning PA is hard work. This is what schools do well and I will defer to teachers and reading specialists to help the child with ASD to become a fluent reader (but see my advice about relationships and literacy below.) There are also many resources outside of school for learning letters and their associated sounds including excellent computer-aided literacy software programs from less expensive and public, to more expensive and private. I would suggest you check out this link to consider different online options.

Also, here are some handy dandy ideas I discovered while learning about reading fluency:

- For onset-rime sound patterns you can use a flip chart box with the onset on the left side and rimes on the right.
- Use an egg carton as a "caterpillar" for helping children understand syllables:



- Even the famous Temple Grandin has weighed in on the use of PA. She suggests using *letter-to-sound pictures*. For example, use a picture of a cat for the hard /k/ sound or a choo-choo train for the /tS/ sound.

The Sensory Environment and Sensory Issues

Children with an ASD often have unique sensory profiles. They may be hypersensitive to the environment and avoidant of certain sensations; they may also be sensory seeking and crave input. They may have preferences based on their sensory profile that should be recognized so that the environment can be adapted to make the experience of learning to read enjoyable and effective.

- Here are Temple Grandin's suggestions for teachers teaching children with an ASD that address many sensory issues that may interfere with learning.

Relationships and Literacy

Before we move on from fluency to reading comprehension, I would like to talk about the critical importance of *relationships* and *motivation* in the context of learning something new. I will have more to say about this when we talk about reading comprehension.

Let's face it. Learning is change. Learning means compliance and effort—not necessarily doing what you want and often doing what is difficult. To learn letters, letter sounds, and blending sounds to make words takes hours of practice. "Why should I work so hard? This is too hard for me! I want to play my video games; they're a lot more fun and easier." These are common thoughts and feelings in the mind of any child facing demanding learning experiences.

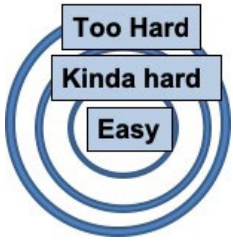
Interestingly and sadly, I did not find a research-based discussion in the scientific literature about the *relationship* between the caregiver, teacher, or professional and the student learning to read. It is just probably assumed that good parents and teachers are intuitively able to have fun with, motivate, and enjoy teaching the child with an ASD to read. Many children in my practice have great teachers and love going to school.

But I also have many families who complain that their child is not enjoying learning new things. The child (and the parents!) have anxiety. Children might worry that they can't do the work. They are task avoidant. They perceive the task of learning to read as 'too hard.'

Talk About Task Difficulty

My advice? Talk *to the child* about ***task difficulty*** as part of the learning relationship, especially since the perception of task difficulty has been found to be a major factor in the achievement outcomes for students with learning difficulties (Vaughn et al., 2000). Tell them or read them the story of The Three Little Pigs!

Most school-age children find learning most academic tasks fairly 'easy' or, at worst, 'kind of hard.' When tasks are perceived to be 'too hard' the child is very likely to resist learning. At the first sign of avoidance, I recommend using this diagram below to help students identify their perception of the level of difficulty of a given task. "So, what do you think, Joey? Is working on letter sounds easy, kind of hard, or too hard?"



It's important to ask students how hard it feels to do a specific task for five reasons.

1. First, this type of question honors and respects the child's perceptions and feelings and addresses the issue of motivation. If a child feels they can't do the work, they will not be motivated. (They

may not be motivated even when the work is not too hard because they perceive it as boring! More about this later.)

2. Second, by asking them to rate task difficulty we are also empowering the child to control their learning process. We are honoring their autonomy and agency.

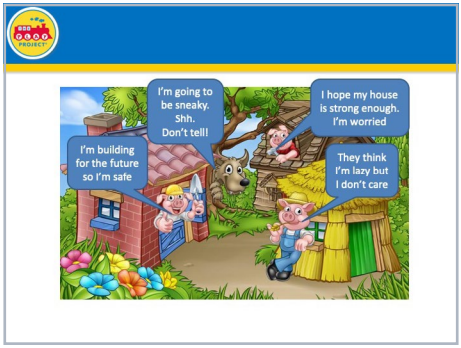
3. The third reason, and perhaps the most important, has to do with the EQ (EI) this engenders, one of the major themes of this blog. By asking a child to rate their feelings about how hard the work is, we are inviting and promoting self-reflection. This is a huge step toward EQ for children with an ASD. We are saying to the child 'I value your feelings and perceptions about learning.'

4. Fourth, asking students about task difficulty leads to great EI conversations. For instance, we can help the child understand why they should work hard: "When you can read you are going to be so smart." We can exhort our children to achieve something difficult: "Even though it's kind of hard, you can do this!" We can share the joy of learning: "Yay, you did it! You are learning to read!" We can discuss delayed gratification: "Sometimes you have to do things you don't like to do, to get things you want." And then there's perfectionism and obsessiveness, so common in children with an ASD: "You got that one wrong but that's okay. Nobody does it right all the time." Finally, working on confidence: "You thought it was too hard, but you did it! See, you can do it if you try." How wonderful to be able to talk about these things with the child!

5. Finally, this whole discussion of task difficulty would be useless if the tasks really were 'too hard' or 'too boring'. The child's functional emotional developmental level must be taken into considerations when determining IEP goals. The child's special interests should be included in any learning plan, and learning should be fun! More on this below.

From Fluency to Reading Comprehension (RC)

While developmental growth can lead to a love of books, books can lead to developmental growth and EQ (emotional intelligence). I will conclude with some practical strategies to promote advanced forms of EQ through reading for those children with ASD who are beginning to be conventional readers. At this stage, they can understand the basic storyline of The Three Little Pigs, as well as the moral of the story, its implications, the pigs' different personalities and psychologies, and the wolf's different feelings.



Studies show that readers advance through three stages (See the excellent review by Lantner & Watson, 2008 for this section):

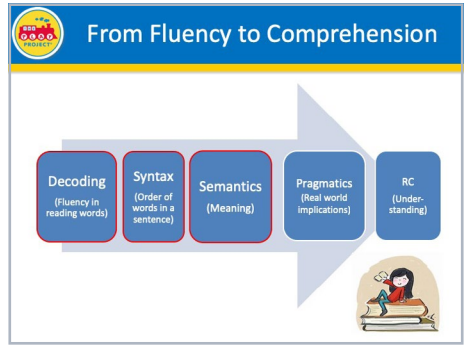
- Emergent: Pre-readers (Greenspan FEDL 5/6)—See the discussion above on Bibliophilia Stages 3 & 4 and fluency.
- Conventional readers (FEDL 6/7): Who can read and draw meaning from the text and
- Skilled readers (FEDL 7-9): Who can derive meaning from printed text accurately and efficiently.

Studies also show that there are proven methods to promote advancement through these stages. You might think of these as the straw, wood, and brick stages of reading!

CONVENTIONAL READERS

According to studies on conventional readers, children with high functioning autism (HFA) when compared to neurotypical children of similar IQ did not differ significantly on variables associated with *decoding* including phonological awareness (PA), phonological memory (the ability to recall word sounds), and rapid naming (the ability to name pictures shown quickly)

When matched by IQ, children with HFA also compared well with typically developing children on overall *reading comprehension* too (i.e. they could answer general questions about the text as well as neurotypical children). But the children with HFA had more trouble with the subtleties of meanings, namely inferences, implications, and innuendoes (which I call 'The three Is'). They had trouble applying what they read to their life (also known as *pragmatics*—see figure below where the boxes in red are easier for children with an ASD).



To make matters even more complicated for parents and teachers, the research (and my clinical experience too) shows that one student with ASD could arrive at kindergarten with no reading readiness skills at all (i.e. they could still be in Bibliophilia Stages 1-4) and another (same age) student could have advanced reading abilities! That's why it's called a *spectrum*.

Research has shown that kindergarteners with an ASD typically have trouble with reading comprehension (RC) *unless* their IQ *and* receptive/expressive language abilities were comparable to neurotypical peers. Unless, that is, they have what's called *high functioning autism* (HFA). Interestingly, the ability of the child with ASD to speak in well-constructed short sentences was also predictive of conventional reading abilities at entrance to kindergarten (Whalon, 2018).

So, how do we help the child with an ASD move from decoding to understanding sentence structure (syntax) to grasping the meaning of a text (semantics) with its real-world implications? The child has now traveled to the new territory of true reading comprehension and it associated EQ (emotional intelligence)!

Giving Your Child M&M's

Let's start by giving the child m&m's! Of course, I mean 'Meaning and Motivation' not candy! Those who teach children with an ASD should always ask themselves "Why should it matter to this child?" Fun? Making them smart? Winning prizes? Many Students with 'conventional reading abilities' who have an ASD are not going to learn in a conventional way. If the student can't learn the way we teach, maybe we should teach in the way the student can learn. In short, we may have to use unconventional methods and more interactive learning.

In order to meet the unique learning styles (including sensory profile and preferences—see Temple Grandin above) of children with an ASD, parents, teachers, and other professionals should familiarize themselves with the school's conventional language arts curriculum, goals, and materials and be willing to think outside the box as part of the child's IEP.

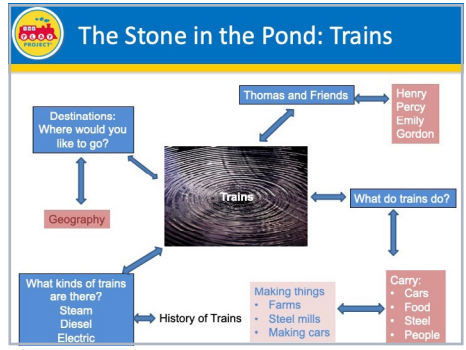
For instance, studies show that students with an ASD have been observed to quickly read through passages with few pauses and little re-reading of certain sections (O'Connor & Klein, 2004). Stopping to ask questions about the text at regular intervals may help students to monitor their texts comprehension. Did I mention the importance of relationships? A study by O'Connor and Klein found that when they interspersed questions in a text that asked students, for example, to 'select an antecedent to a pronoun,' students would pause and reread sections of the text to find the answer.

The Stone in the Pond

Another way to make reading easy, interesting (not too hard or boring), and interactive, is to *incorporate the child's special interests* into what they are learning whenever possible. And children with an ASD always have special interests. I called this the 'Stone in the Pond' approach.

The *stone* is what the child *loves* and when you throw a stone into a pond, the waves ripple out in concentric circles to the banks. These concentric circles are the logical expansion of a topic.

For example, let's say the child loves Thomas the Tank Engine trains. So, one might start by looking on the internet to find the different kinds of Thomas trains, naming them, spelling them, reading their names, maybe writing their first letters or names out—whatever the child enjoys learning. Then you might search for real trains on the internet. Then, get a Thomas book or a book about trains, about what trains do and where they go. Depending on what the child is capable of understanding and interested in, you could read about the history of trains, etc. Since all knowledge is connected, you could start with Thomas and, as the waves ripple out to the very edges, end up talking about transportation theory in modern society!



For early conventional readers, the focus now becomes more on semantics (meaning) and pragmatics (real world implications) leading to reading comprehension. Books (did I mention especially fiction books?) that have simple pictures, a predictable storyline, clear cause-and-effect relationships, or goal directed behavior by the protagonist are best.

Interestingly, there is an almost linear relationship between literacy (especially fiction) and a child's developmental and intellectual capacities.

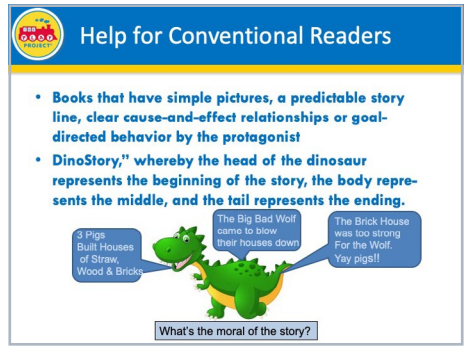
Scenes and descriptions bring awareness to easier-to-understand sense perceptions and 'things in the world' like straw, wood, and bricks.

The concept of *'character'* is more advanced as it helps the child develop awareness of emotions, personality types, and internal motivation. For example, "The second little pig thought he was so smart, but he wasn't. He was arrogant. He thought his house of sticks would be strong enough to keep him safe, but the Big Bad Wolf blew his house down. He should have built a house of bricks." You could look up the word 'arrogant' and have a discussion about making mistakes.

Plot, perhaps the most demanding literary element for children, helps integrate time, story, and meaning. Asking the child to summarize the plot—"What was the story of The Three Little Pigs about?"—is not easy for children with an ASD and must be practiced.

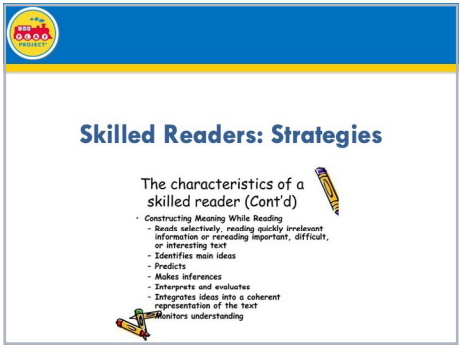
A strategy called 'think alouds,' where the adult summarizes the main idea or moral out loud, helps students extract meaning from the text.

Another nice strategy I discovered is to create a "Dino story" whereby the head of the dinosaur represents the beginning of the story, the body represents the middle, and the tail represents the end of the story.

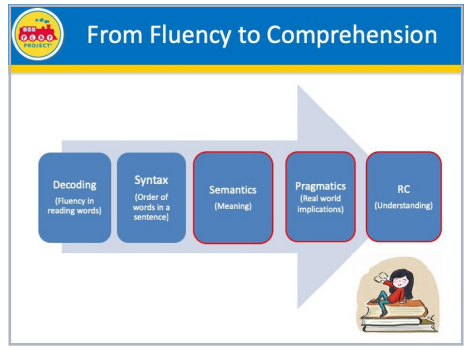


Another good technique to help promote reading for conventional readers is to read in a small group with socially supportive peers who can help the child with an ASD comprehend texts. In one study of school-age children with an ASD, a reciprocal questioning approach was used to improve the comprehension outcomes of students with an ASD working first with their teacher to learn the strategy and then with their peers.

SKILLED READERS



Finally, we have arrived in the territory of *skilled readers*. Here is where the Big Bad Wolf gets his due—hopefully. Here is where we help the student to know what's coming, build the fire of literacy, and chase the wolf of limitations away! In other words, skilled reading is where high levels of literacy can lead to high levels of EQ—if you can overcome the challenges that the children face when it comes to semantic, pragmatics, and truly literate reading comprehension (outlined in red). Here again, the student with an ASD tends to learn differently because of his or her tendency toward simplifying the world to make it more understandable. Our task as parents, professionals, and teachers is to help the student become a more complex thinker and feeler because it is within their capacity to do so.



Evidence from multiple converging studies have identified three primary challenges that the student with an ASD must overcome if he or she wants to reach his/her potential when it comes to the more complicated levels of reading comprehension (Lantner & Watson, 2008):

- One is called *weak central coherence* which causes challenges in identifying main ideas and summarizing.
- The second is *theory of mind* where students have difficulties understanding the subtleties of the emotions and internal states of characters in reading passages and so are challenged with predicting characters actions.
- The third challenge is in the realm of *executive functioning* in which children have problems with planning, being flexible thinkers, and self-monitoring.

Neurodiversity and the Differently Abled

I must mention here again that each of these three primary challenges have been criticized by autism's neurodiversity advocates. Instead of seeing the child with an ASD as disabled in these three domains, we should instead think of the neurodivergent individual as 'differently abled' with a different perspective that is just as valid as our own. Every child's feelings matter; their autonomy in learning should be honored; and their agency encouraged.

The real danger is that the student's unique, creative, and novel responses might be dismissed in favor of what we consider to be the 'correct' interpretation of a text. Those of us who are deemed *neurotypical*, the advocate say, are imposing our norms on those who are neurodiverse. In short there is a 'double empathy' problem. When we 'incorrectly assume that there is a set of definable social norms and rules that exist for people to follow' we fail to empathize with those who do not fit our definition of 'normal.' (Milton, 2012). I totally and utterly agree.

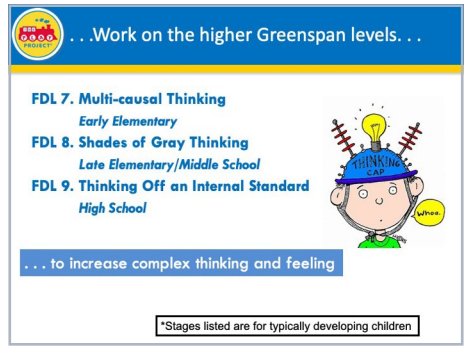
Yet, dismissing the child's perspective happens all the time.

I hope I have made it clear that we can and should take into consideration the feelings, wishes, and opinions of the student. Everything should be 'checked out' with the person especially as we move into the later grades. Is what we are doing meaningful and motivating (m&m's)? What if the person doesn't want to learn to summarize story plots? Does this matter? Absolutely! Ask the student, "Is understanding the character's motives important to you?" We may disagree. We may argue for the importance of doing the hard work of understanding the character's development. In an authentic dialogue, we must exhort the student to challenge themselves and convince them that it is in their interest to meet the challenges they face but welcome their opinions and heartily give them permission to disagree. It is exactly this kind of authentic dialogue around literacy that leads to EQ.

So, let's assume you have asked for their permission and you've made your case for the importance of advanced reading skills and that they want to do this hard work of literacy

Reading Comprehension

True reading comprehension is achieved when the child can summarize information, retrieve and apply prior knowledge, understand social cues and character emotions, and make inferences from printed texts. These capacities are reflected in Greenspan's higher FEDLs.



Skilled readers can:

- Derive meaning from printed text accurately and efficiently
- Develop a larger vocabulary and broader language skills overtime (Did I mention the importance of dictionaries?)
- Acquire prior knowledge that they apply with active mental strategies to help make sense of the text including questioning, predicting, and constructing mental images
- Relate the text to their prior knowledge monitoring their comprehension
- Form opinions about what they read
- Seek clarification when necessary, when they realize they don't understand something

In short, they are demonstrating capacities of multicausal thinking (FEDL 7), Shades of Gray thinking (FEDL 8), and Thinking Off an Internal Standard (FEDL 9).

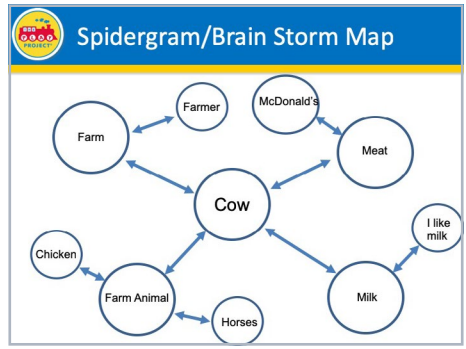
In FEDL 7, students are encouraged to think about the *multi-causal* factors in a given event, story, or even personal situation. How can we help the children evaluate narratives? The pig who built the house of bricks did so for *several* reasons. He wanted to build a strong house

because he was a hard worker AND he was *worried* about future safety AND he wanted to feel proud of what he did. It's fun to identify emotions and label character's internal states (Why did the one little pig not worry and the other little pig did?) There were multiple factors/ causes for his behavior. Reasoning in a multi-causal way helps the child with an ASD become a much more complex thinker and feeler.

A fun and creative way to promote higher-level thinking might involve the student acting like the character. Can they adopt the character's perspective by speaking in the character's voice? (Let's act it out. You be the pig who plays the flute. What would he say?)

There is a concept called *negative hedges* where students can consider conditions or situations that are contrary to expectations: "What if the Big Bad Wolf had a terrible childhood?" *Intensifiers* and *attention getters* draw the listener's attention to the importance of certain aspects of the narrative.

Colasent and Griffiths (1998) presented a content overview before reading themed books to students with an ASD. The authors built in background knowledge through pre-teaching and orienting the child the day before school. They used visual aids in the form of semantic feature analysis (listing the various meanings of the text), semantic maps or Venn diagrams for brainstorming and organizing known information related to a topic before reading or especially writing.



Children with an ASD tend to be concrete, black-and-white, all-or-none thinkers and feelers.

Research (Jacob & Richdale, 2013) confirms this and has shown that children with high functioning autism (i.e., who have comparable IQ and language skills when compared to neurotypical students) instead of being big picture thinkers, rely more on a *bottom-up* approach to reading, with the emphasis on phonological processing to decode and thus comprehend the written information. "Pragmatics may be a better predictor of reading comprehension in older age samples." *So, RC problems may not be apparent until the mid to late primary school years!* I have found 4th grade to be a big academic dividing line when texts require both problem-solving and inference skills i.e. where higher level semantic and pragmatic interpretation is needed.

FEDL 8: Shades of Gray Thinking helps the child with an ASD address the three challenges by helping them become more aware of subtleties, like the three 'I's: inferences, implications, and innuendos. Shades of Gray thinking applies to degrees of feeling: furious, angry, upset, miffed, annoyed. A *thesaurus* will help the child understand the subtle shades of meaning in one word. Moral thinking can be a quite subtle form of Shades of Gray thinking especially when rules are broken and the child with an ASD gets upset: "She got out of line! That breaks a rule. I'm going to tell." And his friend, thinking in shades of gray, says,

"I know, but she got back into line fast. She was just getting a drink of water. Don't tell on her. It'll get her into trouble over nothing and she'll be mad at you. Don't you want her to be your friend?"

As students move into 3rd and 4th grades, they leave the Three Little Pigs behind and move on to the *jokey, tongue-in-cheek* (idioms like 'tongue in cheek' by the way are hard for children with an ASD to understand) books like *Captain Underpants* and *Dog Man*. These and hundreds of other chapter books challenge the students to a broader understanding of life with sarcastic humor, where you say what you *don't* mean! And moral dilemmas: "Should Captain Underpants trick Mr. Krupp his principal if it helps his friends?" And humor: "What kind of a superhero wears underwear and a cape anyway?!" Eventually, our children will be introduced to and learn to appreciate fine children's literature like *Charlotte's Web* with a complex plot, wise themes, and the full range of emotions where Charlotte teaches Wilbur about friendship, trust, and love—the deepest forms of emotional intelligence. That would take us into FEDL 9 in junior high school and adolescence. But that's a whole other story.

SUMMARY

Stories are and have always been a magical doorway into the world of complex social relationships from the time of hunter-gatherer to the present. It is my overarching theme (with help from The Three Little Pigs and the Big Bad Wolf!) that stories, being read to, and the progression to full literacy is one of the best ways to help all children develop emotional intelligence and reach their full potential; but it is especially important for children with an ASD.

Children with an ASD are a neurodiverse group with common developmental difficulties, namely a natural tendency toward repetition and keeping the world the same that leads them to have problems especially with understanding social complexity. If we don't intervene early and intensively with children on the spectrum, their development can be derailed by their natural tendencies and limit the often extraordinary potential that is within them. Literacy can unlock that potential to help the child with an ASD become more socially functional, more imaginative, and more emotionally intelligent; a set of goals that all parents want for their child whether that child is neurotypical or neurodivergent. Children with an ASD will predictably move through the 5 Stages of Bibliophilia to become readers when books are presented in the right way, at the right time, and at their right functional emotional developmental levels.

I hope I have shown how development leads to literacy and literacy leads to further development. I have emphasized, based on research and on decades of experience that, in order to help the child with an ASD reach their full potential, parents and professionals must be

aware of the interactional process (IP) itself, must honor and respect the child's functional developmental capacities (not based on age) and must join with the child's intent, strengths, and interests in a way that is motivating, meaningful and fun. We must talk about task difficulty with our children. We must use the book of life to help them see daily activities in a literary way. We must individualize our reading curricula.

Let's not settle for straw houses (though we should have fun along the way!). Let's not fool ourselves thinking that a house of twigs is good enough. Let's encourage our children and adolescents to build toward their full potential of a strong brick house so the Big Bad Wolf of life won't get them, and they will live happily ever after.

REFERENCES

- Binns AV, Oram-Cardy J. (2019) Developmental social pragmatic interventions for preschoolers with autism spectrum disorder: A systematic review. *Autism & Developmental Language Impairments*, 4(1), 1-18. DOI: 10.1177/2396941518824497
- Colasent R, & Griffith P. (1998). Autism and literacy: Looking into the classroom with rabbit stories. *The Reading Teacher*, 51(5), 414–420.
- Ehri L C, & McCormick S (1998). Phases of word learning: Implications for instruction with delayed and disabled readers. *Reading & Writing Quarterly*, 14(2), 135–163.
- Fein D, Barton M, Eigsti I, Kelley E, et al. (2013) Optimal outcome in individuals with a history of autism. *Journal of Child Psychology and Psychiatry,* 54(2), 195-205.
- Greenspan SI. (1992) Infancy and Early Childhood: The Practice of Clinical Assessment and Intervention with Emotional and Developmental Challenges. Madison, CT, *International Universities Press*.
- Greenspan, SI, and Weider S. (1997) An Integrated Developmental Approach to Interventions for Young Children with Severe Difficulties in Relating and Communicating. *Zero to Three National Center for Infants, Toddlers, and Families.* 17(5).
- Jacobs DW, Richdale AL (2013). Predicting literacy in children with high functioning autism spectrum disorder, *Research in Developmental Disabilities,* Vol 34, 2379-2390

- Karipidis I, Hong D (2020) Dyslexia in Pediatrics: Simple Practices to Tackle a Complex Issue. *Pediatrics*, 146(1) DOI: https://doi.org/10.1542/peds.2020-1470
- Kidd, D. & Castano, E. (2017). Different stories: how levels of familiarity with literary and genre fiction relate to mentalizing. *Psychology of Aesthetics, Creativity, and the Arts,* 11(4), pp.474-486. doi:10.1037
- Lanter E, Watson LR (2008), Promoting Literacy in Students with ASD: The Basics for the SLP, *Language, Speech, and Hearing Services in Schools*, Vol 39, 33-43
- Lord C, Bristol-Power M, Cafierol J. (2001) *Educating Young Children with Autism*, Washington D.C. National Academy Press.
- McIntyre NS, Solari EJ, et al (2017). The scope and nature of reading comprehension impairments in school-aged children with higher- functioning autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 47, 2838–2860. http://dx.doi.org/10.1007/s10803- 017-3209-y
- Milton, D (2012) On the ontological status of autism: the 'double empathy problem'. *Disability & Society*, 27 (6). pp. 883-887. ISSN 0968-7599.
- Minshew NJ, Goldstein G, Siegel D. (1997) Neuropsychologic functioning in autism: profile of a complex information processing disorder. *J Int Neuropsychol Soc*, 3:303--316. Disorder. *J Autism Dev Disord*. Nov, 42(11): 2323-34.
- O'Connor IM, & Klein PD. (2004). Exploration of strategies for facilitating the reading comprehension of high-functioning students with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 34(2), 115–127.

- Smith D, Schlaepfer P, Maajor K, et al (2017), Cooperation and the evoluation of hunter-gatherer storytelling, *Nature Communications*, 8, 1853 https://www.nature.com/articles/s41467-017-02036-8

- Solari EJ, Grimm R, et al (2017). The relation between text reading fluency and reading comprehension for students with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 41– 42, 8 –19. http://dx.doi.org/ 10.1016/j.rasd.2017.07.002

- Steinbrenner, J. R., Hume, K., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2020). Evidence-based practices for children, youth, and young adults with Autism. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, National Clearinghouse on Autism Evidence and Practice Review Team. El Zein F, Solis M, Vaughn S, & McCulley L (2014). Reading comprehension intervention for students with autism spectrum disorders: A synthesis of research. *Journal of Autism and Developmental Disorders*, 44, 1303-1322.

- Whalon K (2018). Enhancing the Reading Development of Learners with Autism Spectrum Disorders, *Seminars in Speech and Language*, Vol 39, No. 2, 144-157

- Vaughn S, Gersten R, & Chard D J (2000). The underlying message in LD intervention research: Findings from research syntheses. *Exceptional Children*, 67(1), 99–114.

APPENDIX A

Best Books of All Time for Kids

The 10 Best Online Reading Programs

My Favorites by Stage (with some overlap)

Bibliophilia Stages 1 & 2: Sensory and Labeler Stages

Brown Bear Brown Bear What Do See? by Bill Martin Jr.
The Very Hungry Caterpillar by Eric Carle
Chicka Chicka Boom Boom by Bill Martin Jr. and John Archambault
Pat the Bunny by Dorothy Kunhardt
Good Night Moon by Margaret Wise Brown
Fisher Price: Little People on the Farm

Bibliophilia Stages 3: Story on the Page

Fisher Price: Little People on the Farm
The Three Little Pigs (Little Golden Books)
Funniest Story Book Every by Richard Scary
What Do People Do All Day? by Richard Scary
The Snowy Day by Ezra Jack Keats
Green Eggs and Ham by Dr. Seuss
If You Give a Mouse a Cookie by Laura Numeroff

Bibliophilia Stage 4: Story in the Book

Harold and the Purple Crayon by Crockett Johnson
The Little Engine That Could by Watty Piper
Green Eggs and Ham by Dr. Seuss
Corduroy by Don Freeman
Where the Wild Things Are by Maurice Sendak

Bibliophilia Stage 5: Early Readers (Being Read To)

Where the Sidewalk Ends by Shel Silverstein
Green Eggs and Ham by Dr. Seuss
Where the Wild Things Are by Maurice Sendak
Alexander and the Terrible, Horrible, No Good, Very Bad Day by Judith Viorst
Charlotte's Web by E.B. White

Baby (Bibliophilia Stages 1-3)

The Going-To-Bed Book by Sandra Boynton
Good Night Moon by Margaret Wise Brown
Dear Zoo by Rod Campbell
The Very Hungry Caterpillar by Eric Carle
Peek-A-Zoo! by Marie Torres Cimarusti
Time for Bed by Mem Fox
Kitten's First Moon by Kevin Henkes
Where's Spot? by Eric Hill
Where is Baby's Belly Button by Karen Katz
Pat the Bunny by Dorothy Kunhardt
Little Blue & Little Yellow by Leo Lionni
Chicka Chicka Boom Boom by Bill Martin Jr.
Brown Bear, Brown Bear What Do You See? By Bill Martin Jr.
Guess How Much I Love You by Sam McBratney
Mouse Paint by Ellen Stoll Walsh

Ages 2-4 (Bibliophilia Stage 4)

My Friend Bear by Jez Alborough
I'm the Best by Lucy Cousins
Llama Llama Mad at Mama by Anna Dewdney
Big Dog... Little Dog by P.D. Eastman
Planting a Rainbow by Lois Ehlert
Corduroy by Don Freeman
My Garden by Kevin Henkes
The Snowy Day by Ezra Jack Keats
A Book of Sleep by Il Sung Na
If You Give a Mouse a Cookie by Laura Joffe Numeroff
Not a Box by Antoinette Portis
No, David! by David Shannon
Dinosaur vs. Bedtime by Bob Shea
Art & Max by David Weisner
Knuffle Bunny: A Cautionary Tale by Mo Willems

Ages 4-8 (Bibliophilia Stage 5+)

The Mitten by Jan Brett
Ramona by Beverly Cleary
Mercy Watson series by Kate DiCamillo
Bread and Jam for Francis by Russell Hoban
The Hello, Goodbye Window by Norman Juster
Pinkalicious by Victoria Kann
Fancy Nancy by Jane O'Connor
Of Thee I Sing by Barack Obama
Paula Deen's *My First Cookbook*
Amelia Bedelia series by Peggy Parish
Chicken Butt by Erica Perl
Duck! Rabbit! by Amy Krouse Rosenthal
Where the Wild Things Are by Maurice Sendak
Skippyjon Jones by Judy Schachner
Alexander and the Terrible, Horrible, No Good, Very Bad Day by Judith Viorst

Ages 9-12 (Greenspan FEDLs 7-9)

Mr. Poppers Penguins by Richard Atwater
SuperFudge by Judy Blume
The Secret Garden by Frances Hodgson Burnett
Charlie & the Chocolate Factory by Roald Dahl
The Lemonade War by Jacqueline Davies
Hardy Boys series by Franklin W. Dixon
Guinness Book of World Records
Nancy Drew series by Carolyn Keene
Diary of a Wimpy Kid by Jeff Kinney
When Life Gives You O.J. by Erica Perl
39 Clues series by Rick Riordan
Harry Potter series by J.K. Rowling
Wayside School series by Louis Sachar
Stuart Little by E.B. White
Charlotte's Web by E.B. White

DR. RICHARD SOLOMON (BIO)

A developmental and behavioral pediatrician with over 25 years' experience diagnosing and providing intervention for children with ASD, Richard Solomon MD (also known as 'Dr. Rick, The Fun Doctor') is a nationally recognized expert and speaker in the field of autism science and intervention. He is a researcher with dozens of publications in scientific journals and is the author of Autism: The Potential Within, The PLAY Project Approach to Helping Young Children with Autism.

He is in private practice at The Ann Arbor Center for Developmental and Behavioral Pediatrics and founder of The PLAY Project, an evidence-based, parent implemented autism intervention model. Hundreds of PLAY Consultants, trained by Dr. Solomon and his team, serve thousands of families nationally and internationally using the program's developmental, relationship-based, and playful approach.

Dr. Solomon serves as the Medical Director of Autism and Rehabilitation Services for Easterseals Michigan and is Chairman of the Developmental and Behavioral Pediatrics Work Group for the Michigan Chapter of the American Academy of Pediatrics. His career includes fellowships and faculty positions in pediatrics, editorial peer review for pediatric journals, and numerous volunteer positions with nonprofit boards and state appointed committees. He is married, has two adult children, and four grandchildren.