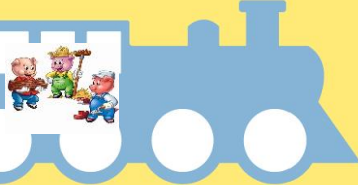


## THE PLAY PROJECT™

### Autism, Literacy, & Emotional Intelligence

*How reading and stories help children with ASD  
Become smarter and more social*



**Richard Solomon, MD**  
Medical Director, PLAY Project  
Ann Arbor Center for Developments  
and Behavioral Pediatrics

[www.playproject.org](http://www.playproject.org)

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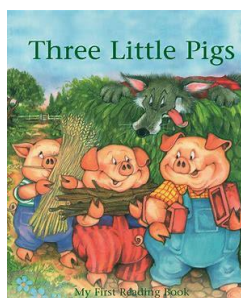
## Literacy

- **literacy**
- [ˈlɪdərəsi, ˈlɪtrəsi]
- NOUN
- The ability to read and write.
- **Focus on reading in the early elementary years**
- *synonyms:*
- ability to read and write · reading/writing ability · reading/writing proficiency · [learning](#) · [book learning](#) · [education](#) · [scholarship](#) · [schooling](#) · [letters](#)
- competence or knowledge in a specified area.

2



## Who's Afraid of the Big Bad Wolf?



3



## Overview

- **'Storytelling': Ancient and modern**
  - Why 'literacy' is so important for children with ASD
- **The '5 Stages of Bibliophilia'**
  - How to get children with ASD interested in books
  - Promoting development through books & storytelling
- **Reading Readiness for Children with ASD: A Review of the Literature**
- **Strategies for Promoting Literacy and Emotional Intelligence for Kids on the Spectrum**
- **Summary of Key Ideas on Literacy and ASD**

4



## Story Telling Ancient and Modern

Why 'literacy' is important for Children  
with ASD

5



## Autism & Literacy

- **Autism is primarily a disorder of social communication**
- **The child with autism wants to keep the world the same**
- **The reason is under-connected neuronal networks in the brain on a largely genetic basis**
- **Experientially, the child with autism is disengaged from the world.**
- **Literacy, through play and fun, is a way into the psychology of the child with ASD that can bring them into a shared world**
- **Help them understand the world in a more complex way**

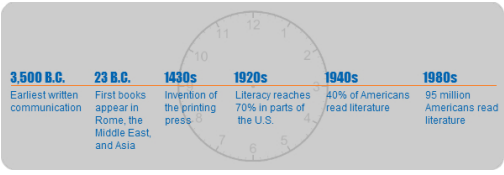
6

**Research on Hunter-Gatherers and Storytelling**

- For 100,000 years we were hunter-gatherers.
- Smith D, et al (12 contributors) (2017) *Cooperation and the evolution of hunter-gatherer storytelling*, Nature Communications, Dec 5, open access
- This research looked at narratives from multiple hunter-gatherer societies and discovered similar themes.
- Of 89 stories, around 70% concerned social behavior, in terms of 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,
  - Storytellers coordinated social behavior and promoted cooperation and created community.

7

**Literacy Timeline**



8

**Literacy**

- Historical Reasons for Literacy:
  - 1600s: Spiritual edification—The Bible (Puritans)
  - 1700s: To remain safe from tyranny (Free press)
  - 1800s: Status—I know how to sign my name.
  - 1900s: Public education (Become smarter)
  - 1950s: Recreation (Happiness)
  - Why should children with ASD become literate?

9

**... So they can understand the story of life. . .**

**Storytelling and literacy  
Bring us all into the  
Human family  
This is especially important  
for children with autism**

10

**Hunter Gatherers and Storytelling**

- Back to the very beginning of human culture, humans have evolved the capacity to create and believe in stories.
- Stories introduce individuals to situations beyond their everyday experience
  - Increase empathy
  - Improve perspective taking toward others
  - Something children with ASD need
- It all started with 'once upon a time' around the campfire

11

**From Storytelling to Literacy**



12

**We have evolved. Or have we?**



'An F? How do you get an F in 'Gathering?'

13

**Why 'Literacy' for Children with ASD**

- *Stories are built into our DNA & stories evolved into books*
- **Books: The high road to language, development, and emotional intelligence. ESPECIALLY FICTION.**
- **First, we find a way to have fun and play with letters, sounds, words, pictures, and stories**
- **Then literacy leads to personal growth and social functioning in children with ASD**
  - Affect/interest should lead the way
  - "When you do what the child loves, the child will love to be with you."
- **One the most important ways to brings the child with autism into our world and our culture**

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**ESPECIALLY FICTION**

- fiction
- [ˈfɪkʃ(ə)n]
- NOUN
- literature in the form of prose, especially short stories and novels, that describes imaginary events and people.
- *synonyms:*
- novels · stories · creative writing · imaginative writing · works of the imagination · prose literature · narration · story telling · romance · fable

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**Stories Brings Beings Together\***



\*Especially fiction

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**The 5 Stages of Bibliophilia (Love of Books)**

**Starts with Being Read to (Before the child can read)**

17

**Greenspan's: Functional Developmental Levels\***

1. Shared Attention & Self regulation (FDL 1: Infancy)
2. Engagement (FDL 2: 2-6 months)
3. Two way Communication(FDL 3: 6-12 months)
4. Complex two-way Communication (FDL 4: 12 month -2 yrs)
5. Shared Meanings & Symbolic Play (FDL 5: 2-3 years)
6. Emotional Thinking (FDL 6: 3-5 years)
7. Multi-causal Thinking (FDL 7: Early Elementary)
8. Shades of Gray Thinking (FDL 8: Late Elementary/Middle School)
9. Thinking Off an Internal Standard (FDL 9: High School)

\*Ages/Stages listed are for typically developing children

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**Being Read To . . .**

In the beginning was the book  
 And the book was good  
 And the parents read the books to their children  
 And the children loved books  
 And became smart and social

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**5 Stages of Bibliophilia**  
 How children with ASD learn to love books

- 5 Developmental Stages of Bibliophilia and associated Functional Developmental Levels
  - Stanley Greenspan MD and Serena Wieder PhD
  - Age is much less important than Functional Development
- 1. ‘Sensory Seeker’ Stage of Literacy (FDLs 1-3)
  - The book as object:
    - Flipping pages
    - Chewing on books
    - Pure looking
- 2. ‘Labeler’ Stage of Literacy (FDL 3-4)
  - Description
  - Naming people, animals, objects

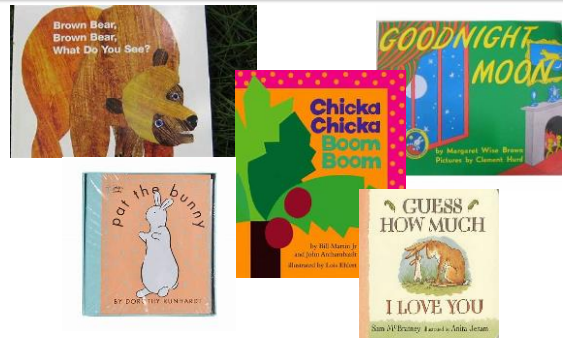
20

**Being Read To—Sensory Seekers (FDL 1-2)**



21

**Being Read To—Labelers (FDL 3-4)**



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**FDL 4: Complex Two Way Communication (Age 18m)**

- ‘Opening’ and ‘closing’ of 10-30 circles.
- Solid 4 =Totally ‘with us’. Continuous flow of interaction
- Gestural communication along with words. Imitation.
- 50+ words
- Follows spontaneous 1 step commands: Go, get, give to. . .
- Feelings more and more organized
- Problem solver! Has his/her own ideas.
- ‘Little stories’: ‘Gets’ meaningful sequences.
- Simple pretend: Phone to ear. Bottle to baby’s mouth
- **DON’T READ THE WORDS IN THE BOOK!!**

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**Pigs. Wolf! Houses. Hammer. . .**

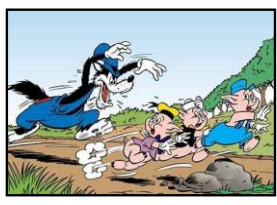


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### 5 Early Stages of Bibliophilia

3. 'Story on the Page' Stage of Literacy (FDL 4-5)
- Understand actions (verbs)
  - Follow 1-step instructions to 'give, get, bring'
  - Can answer: 'What, where, and who' questions
  - Understand feelings

"Oh no! Here comes the Big Bad Wolf!! Run little pigs! Run! They're scared!"



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### Being Read To: Story on the Page (FDL 4-5)

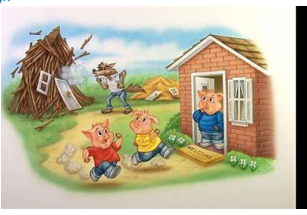


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### 5 Early Stages of Bibliophilia

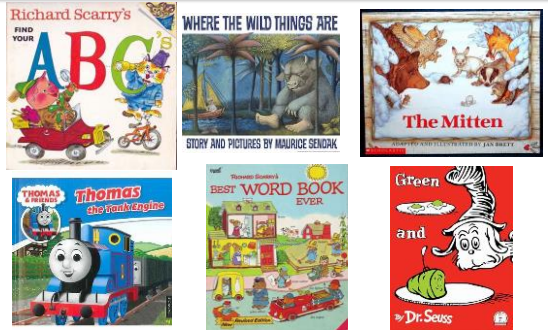
4. 'Story in the Book' Stage of Literacy (FDL 5-6)
- NOW YOU CAN READ THE BOOK! BUT IT MUST BE FUN!
  - Plot and time: Oh no! What's going to happen next?
  - "Why, when, and how"
  - Understand the idea Of letters and words

"The Big Bad Wolf went from house to house and blew the house of straw and the house of wood down. Why did he do that?"



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### Being Read To: Story in the Book (FDL 5-6)



28

### Early Stages of Bibliophilia

5. 'Early Reading' Stage of Literacy (FDL 6-7)
- Can sing the alphabet song
  - Name letters
  - Sound out/phonics
  - Blend sounds
  - Sight words



first little pig	brick
second little pig	straw
third little pig	chicken
big bad wolf	meat
house of straw	pot
house of wood	axe
house of bricks	stone
chicken	egg
straw	ball
brick	wheel
stick	meat

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### FDL 6: Emotional Thinking (3-5 year olds)

- Talking in sentences
- Can recall the immediate past.
- Builds bridges between ideas
  - Identifies own and others' feelings
  - Recognizes relationship between feeling, behavior and consequences
- 'Why' is emerging
- Two thematic play
- Carries on simple conversations
- Peer play established.
- Misbehavior as developmental accomplishment

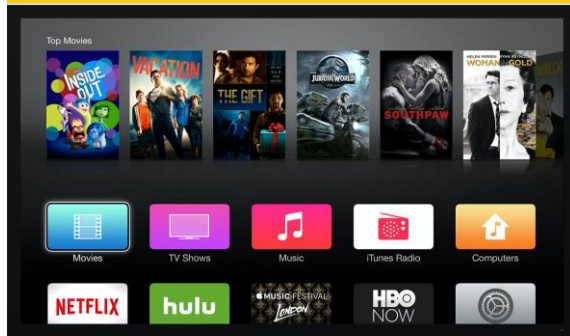
30

 Bibliophilia

We are 'wooning' children  
into a love of books  
by appealing to  
their developmental interests.  
Then they will love books!

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 A Word About Screens



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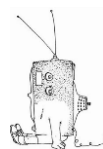
 A word 

**SCREENS ARE BAD!**  
They (screens) will blow down  
your child's house  
of straw and wood\*.

\*Small Print: When used well, however, movies  
Can enhance book learning and improve literacy.  
Sith. Don't tell anyone!

33

 Jimmy Jet And His TV Set  
by Shel Silverstein



I'll tell you the story of Jimmy Jet--  
And you know what I tell you is true.  
He loved to watch his TV set  
Almost as much as you.

He watched all day, he watched all night  
Till he grew pale and lean,  
From 'The Early Show' to 'The Late Show'  
And all the shows in between.

He watched till his eyes were frozen wide,  
And his bottom grew into his chair,  
And his chin turned into a tuning dial,  
And antennae grew out of his hair.

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.

And he grew a plug that looked like a tail  
So we plugged in Little Jim.  
And now instead of him watching TV  
We all sit around and watch him.

34




**Reading Readiness  
For Children with Autism:  
A Review of the Literature**

35

 Research Reviews: Literacy & ASD


- 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.
- Jacobs DW, Richdale AL (2013). Predicting literacy in children with high functioning autism spectrum disorder. *Research in Developmental Disabilities* Vol 34, 2379-2390
- 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
- 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. <https://dx.doi.org/10.1007/s10803-017-3209-y>
- 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. <https://dx.doi.org/10.1016/j.rasd.2017.07.002>
- Whalon K (2018). Enhancing the Reading Development of Learners with Autism Spectrum Disorders. *Seminars in Speech and Language*, Vol 39, No. 2, 144-157

36

 Reading *Fluency* vs Reading *Comprehension*  
In Children with ASD: Take Home Message


- Research shows that children with ASD are often early readers (good fluency)
  - Visual-spatial skills are a relative strength (though not extraordinary)
  - Memory is good
  - Early letter recognition is common
  - Orthography/spelling is good
  - Hyperlexia is not uncommon
- Reading comprehension in children with ASD is much poorer than reading fluency
  - Closely related to IQ and functional developmental level

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 Hyperlexia

- *Exceptional word reading skills that are well in advance of reading comprehension*
- **Early onset of precocious word reading without comprehension**
  - A compulsive preoccupation with letters and reading
- **Variable intellectual quotients including cognitive impairments**
- **Delayed speaking, echolalia, and/or prosodic abnormalities**

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 Reading *Fluency* vs Reading *Comprehension*  
In Children with ASD: Take Home Message

- Children with ASD fool the schools (and parents) with reading *fluency* but cannot read with comprehension
- **If** the child can understand the ‘*story in the book*’ then he or she is *beginning* to be ready for true literacy and ‘reading comprehension’
  - In typical children by age 5-6/kindergarten (FDL 6-7!)
  - Children with ASD who had good oral language syntax predicted better RC

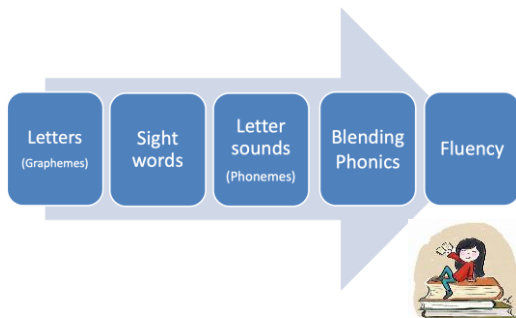
39

 ASD & Reading: A Heterogenous Group


- *Kindergarteners with ASD arrive with a very broad range of reading readiness deficit and/or skills*
  - From total lack of print and phonological awareness to fluent readers
- School age children with ASD have trouble with reading comprehension unless IQ and receptive/expressive language were comparable to typical peers (more of this later. . .)
- In the beginning was the letter. . .
- The process of arriving at ‘reading fluency’ i.e. being able to decode letters into words looks like this. . .

40

 Reading Fluency



41

 The Hard Work of Phonics (FDL 6-7)

- Phonological awareness is critical for word reading ability (NICHD, 2000). FDL 5-6 Skill.
- In the *full alphabetic phase*, students’ growing knowledge of grapheme–phoneme correspondences enables them to decode unfamiliar words (Ehri & McCormick, 1998).
- In the *consolidated alphabetic phase*, students are able to identify frequently reoccurring letter patterns such as morphemes, syllables, or sub-syllabic units such as onsets (beginning sounds) and rimes (ending sounds)
  - Letter sequences and spelling patterns are recognized without phonetic decoding

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## Morpheme

- morpheme
- [ˈmɔːrˌfɛm]
- NOUN
- **morphemes** (plural noun)
- a meaningful morphological unit of a language that cannot be further divided (e.g. **in**, **come**, **-ing**, **forming** **incoming**).
- a morphological element considered with respect to its functional relations in a linguistic system.

43

## Onset & Rime: C + at = Cat

What are Onset and Rime?

Onset and rime are terms that technically describe the phonological units of a spoken syllable. Syllables are normally split up into two parts, the onset and the rime.

**Onset** - the initial phonological unit of any word which contains the initial consonant or consonant blend. However, not all words have onsets.

**Rime** - the string of letters that follow the onset which contains the vowel and any final consonants.

e.g. In the word cat, c- is the onset and -at is the rime.

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## Phonics Help

- Use one fourth of an egg carton as a 'caterpillar' for syllables
- For onset-rime sound patterns
  - using flip chart books, with onsets on the left, paired with rimes on the right, and blocks with printed onset/rime patterns
- Computer-aided literacy software programs can increase



- » phonological awareness
- » the alphabetic principle and
- » onset-rime manipulation
- » language expression, and
- » Enjoyment in students



<https://www.earlychildhoodeducationzone.com/best-online-reading-programs/>

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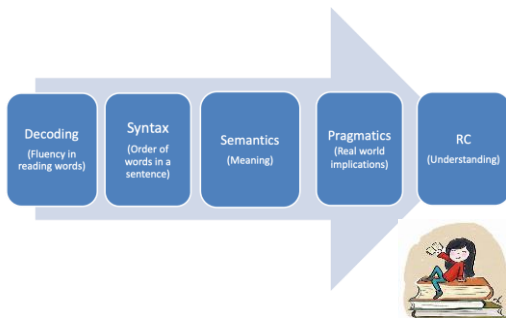
## Temple Grandin's Suggestion

Temple Grandin, a successful livestock equipment designer who has autism, suggested using associative letter-to-sound pictures, such as a picture of a choo-choo train for the /tS/ sound, a cat for the hard /k/, or somebody praying for the long a, /e/



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## From Fluency to Comprehension



47

## Research: Reading Readiness

- "A reader must comprehend a variety of syntactic structures and word meanings (semantics) to understand a passage of written information."
- High Functioning Children with ASD (HFASD) and Typically Developing) TD children did not differ on variables associated with decoding: Cognition, Phonological Awareness, Phonological Memory, Rapid Naming (RN)
  - RN may be predictive of early literacy
- When matched by IQ, no significant differences emerged on RC despite the HFASD (High Functioning Children with ASD, ages 6-8) group demonstrating poorer skills than TD peers on semantics and pragmatics.
- Oral sentence syntax predicted decoding and reading comprehension for children with HFASD

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RC Take Home Message

“Overall then, the importance of IQ to academic skill appears equally relevant to children with HFASD as to their TD peers.”

The question then is . . . ‘How do we help children with ASD improve in their Literacy IQ?’

49

Developmental growth often leads to love of books, (i.e. Bibliophilia) but books can powerfully impact developmental growth.

Developmental growth often leads to love of books, (i.e. Bibliophilia) but books can powerfully impact developmental growth.

50

Practical Strategies To Promote Literacy and Emotional Intelligence

Practical Strategies To Promote Literacy and Emotional Intelligence

Through individualizing literary relationships, we are helping the child with ASD become a more complex emotional thinker

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Research: 3 Types of Readers

- The research is evolving and shows that there are proven methods to help early readers in 3 categories
- Emergent: Pre-readers (FDLs 1-5)
- Conventional (FDL 6): Can read and draw meaning from texts
- Skilled Reading (FDL 7-8): Derive meaning from printed text accurately and efficiently
• No matter what level of reader, relationships matter. . .

From Lantner & Watson

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Relationships and Reading

Relationships and Reading



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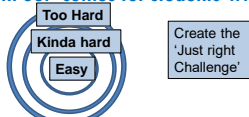
Relationships & De-schooling

- Very little in the literature about the quality of the relationship between the parent/professional and student around literacy
- The interactional process should be emphasized
- Fun should be a priority
- The child's FDL profile must be taken into consideration
- The child's special interests especially should be included in any learning plan.
- Educators must control the task difficulty and talk about task difficulty as part of the relationship.

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## Control of Task Difficulty

- Control of task difficulty has been found to be a major factor in the achievement outcomes for students with learning disabilities
  - Easy
  - Kind of hard
  - Too hard
- Most students find learning easy to kind of hard
- Where possible adults should *talk to students about how hard it feels to do the work* and adjust the texts accordingly.
  - Texts may need to be one or two grades below the students' word reading abilities.
- Start with what they love and expand: Stone in the Pond



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## Stone in the Pond: Groceries

- Look up the location of the grocery store in a phone book,
- Find the location on a map,
- Use a shopping list of different food labels
- Write about the experience on a visual chart
- Use a story outline, pictures, or other artifacts from the experience may help the FDL 6 student recall the experience
- List the events in the proper sequence.
- Vocabulary specific to the experience, as well as print concepts such as writing from left to right, can be stressed.

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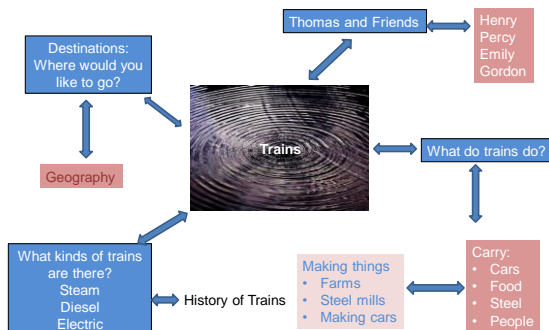
## The Dictionary\*

- Encourage parents to buy a children's dictionary
  - Regularly look up words that you don't know
- Helps with problem solving
- Solidifies the alphabet
- Online dictionaries are cheating but here's a good one:
  - <https://en.wiktionary.org>



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## The Stone in the Pond: Trains



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## m&m's

- How to help children with ASD become more literate?
- Give them m&m's: Meaning & Motivation
  - Why should it matter? Fun!!
  - To make them smart
  - To win prizes?
- Individualizing the curriculum
  - The Stone in the Pond
- Exhorting: Motivation
- De-schooling?



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## Developmental Readiness: ADHD

- ADHD is like the big bad wolf that stalks the children with ASD
- Is it ADHD or is it ASD that keeps the child from focusing.
- Research shows that only 50% of children with ASD respond to stimulants when suspected of ADHD
- More likely it is lack of interest.
  - When the child with ASD is interested he or she can focus
- We have to find what interests the child

60

## Beware Standard Curriculum/IEP

- Parents, teachers, and therapists should familiarize themselves with their school's language arts curriculum
  - Orton Gillingham
  - Wilson Reading
- Check goals and materials used to promote reading and their appropriateness for the child with ASD
  - School and parents should feel free to 'de-school' the literacy curriculum and IEP
  - Adjust the IEP as needed to meet the unique needs of the child with ASD
- What follows is a set of individualized strategies that connect with the child individually *through relationship!*

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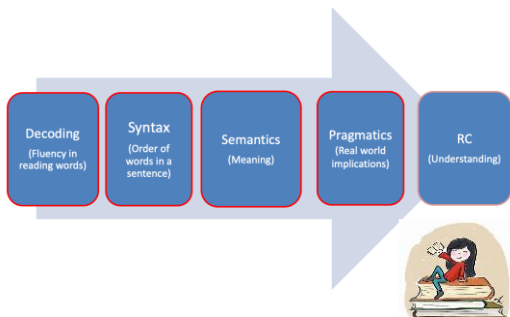
## Emergent Readers (FDL 6)



### Emergent Readers (FDL 6)

62

## From Fluency to Comprehension



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## Help for Emergent Readers\*

- Avoid 'reading readiness models'—you don't have to be 'ready to read' to begin the reading process
  - "Promotion of reading skills helps some students with ASD advance their oral language skills"
  - Spoken language abilities should not be viewed as a prerequisite for literacy learning i.e. See the 5 Stages of Bibliophilia and 'being read to'
- Frequent and repeated readings of texts
  - Is a source of great enjoyment
  - Increases oral language and attention
  - Decreases in echolalia, stereotypic behaviors, and verbal outbursts
  - Promotes students' recognition of familiar schemas
  - Improves students' narrative and expository text comprehension

From Lantner & Watson

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## Labeling the Child's World



- Sight word instruction is an evidence-based practice to teach students with ASD.
  - Overall, students with ASD, even those with no prior reading instruction and limited oral language, learned to identify printed words.
- Labeling objects with words and pictures promotes sight word reading
  - Put the sight words on the furniture



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## Labeling the Child's World

- Singing to transmit messages (I like 'London Bridge')
  - "Now it's time to find your chair find your chair find your chair. Now it's time to find your chair, my dear students."
  - Flip charts show a picture of students finding their chair
    - The word 'CHAIR' printed on the chart
- Studies show that functional literacy tasks built around routine events improve. . .
  - Book handling,
  - Alphabet knowledge,
  - Written language attempts, and
  - Oral language



66

**‘Life Itself’: The Story of *Your* Life**

- Students develop scripts based on familiar experiences in their personal lives.
- Write a ‘preview story’ (add pictures):
  - “Today we are going to the grocery store.
  - We will get on a bus.
  - We will get off at the grocery store.
  - We will buy food for a picnic.
  - Then we will get back on the bus and come back to school.”
- These scripts contribute the child’s general knowledge from their prior knowledge

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**Emergent Readers: Visuals**

- Use visual aids.
  - Before readings, *story maps* or outlines may be used to highlight the textual schema before, during, and after reading a written narrative
- *Pre-teaching* before the class is a great idea!
- Visuals also can help students with ASD infer characters’ thoughts.
  - Draw thought bubbles over copied pictures from texts
  - Have students with ASD draw character representations and accompany them with thought bubbles.



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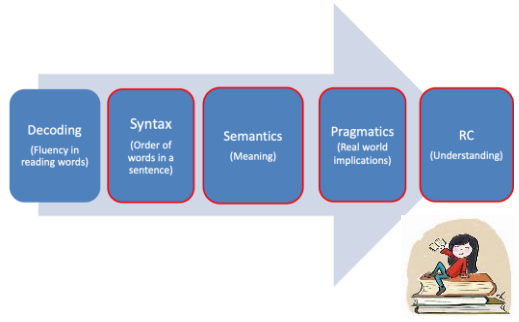


**Conventional Readers: Strategies**



70

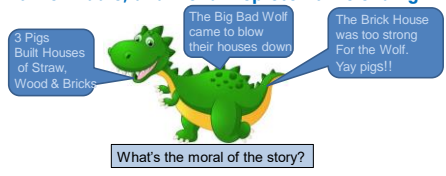
**From Fluency to Comprehension**



71

**Help for Conventional Readers**

- Books that have simple pictures, a predictable story line, clear cause-and-effect relationships or goal-directed behavior by the protagonist
- *DinoStory*,” whereby the head of the dinosaur represents the beginning of the story, the body represents the middle, and the tail represents the ending.



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## Moral

- moral
- [ˈmɔrəl]
- NOUN
- a lesson, especially one concerning what is right or prudent, that can be derived from a story, a piece of information, or an experience.
- "the moral of this story was 'hard work keeps you safe'"
- synonyms:
- [lesson](#) · [message](#) · [meaning](#) · [significance](#) · [signification](#) · [import](#) · [point](#) · [precept](#) · [teaching](#)



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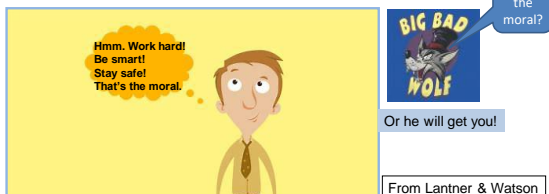
## Literacy and Development

- Scene/description brings awareness to sense perceptions and the 'thingness' of the world
  - "The first little pig built a house of straw."
- Character helps to develop awareness of emotions, personality type, and internal motivation
  - "The 3rd little pig was a very hard worker and built a house of bricks"
  - "Why did he build a house of bricks. . ."
- Plot helps develop a sense of time and integrates actions over time.
  - "Watch out little pigs! The big bad wolf is coming to eat you!"

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## Help for Conventional Readers\*

- Story retelling promotes students' increasing recognition of narrative story schemas, their "sense of story"
- SLPs and teachers must specifically demonstrate to students how extract meaning from texts while they read, a process referred to as "think- alouds"



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## Relationships

- Promote text monitoring.
  - Students with ASD have been observed to quickly read through passages with few pauses and little rereading of certain sections
  - Presenting questions throughout a passage may help students with ASD monitor their text comprehension.
- O'Connor and Klein found that when they interspersed questions in a text that asked students to select an antecedent to a pronoun from a choice of three, or complete cloze questions about a segment of the text, students with ASD would pause and reread sections of the text to find the answer.



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## Cloze

- cloze
- US:(klōz)
 

adj. Linguistics pertaining to or being a procedure used to measure comprehension or text difficulty, in which a person is called upon to supply elements that have been systematically deleted from a text.



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## Peer Relationships and Reading

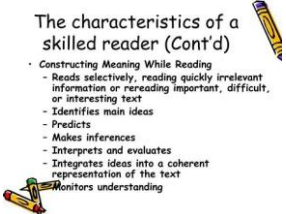
- Consider group reading.
  - Paired or small-group reading with socially supportive, academically capable peers may help students with ASD comprehend texts.
- In one study of school-age children with ASD, a reciprocal questioning approach was used to improve the comprehension outcomes of students with ASD working first with their teacher to learn the strategy and then with their peers

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### Skilled Readers: Strategies

- The characteristics of a skilled reader (Cont'd)
- Constructing Meaning While Reading
    - Reads selectively, reading quickly irrelevant information or rereading important, difficult, or interesting text
    - Identifies main ideas
    - Predicts
    - Makes inferences
    - Interprets and evaluates
    - Integrates ideas into a coherent representation of the text
    - Monitors understanding



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### ASD: Later Reading Problems

- Weak Central Coherence (WCC)** causes challenges in identifying main ideas and summarizing
- Theory of Mind (ToM)** do not comprehend the emotion/internal states of characters in reading passages and thus are challenged with predicting character actions
- Executive Dysfunction Theory** challenges with planning, flexibility, and self-monitoring
- Reading comprehension, for students with ASD, is achieved when they can summarize information, retrieve and apply prior knowledge, understand social cues and character emotions, and make inferences from printed text.

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### Skilled Readers

- “Derive meaning from printed text accurately and efficiently”
- Vocabulary and broader language skills
- Prior knowledge
- Application of active mental to help one make sense of the text including. . .



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### IQ

- Questioning,
- Predicting,
- Mental image construction,
- Relating the text to one's prior knowledge,
- Monitoring one's comprehension,
- Summarizing, and
- Seeking clarification when necessary
- In short. . .



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. . . Work on the higher Greenspan levels. . .

- FDL 7. Multi-causal Thinking**  
Early Elementary
- FDL 8. Shades of Gray Thinking**  
Late Elementary/Middle School
- FDL 9. Thinking Off an Internal Standard**  
High School



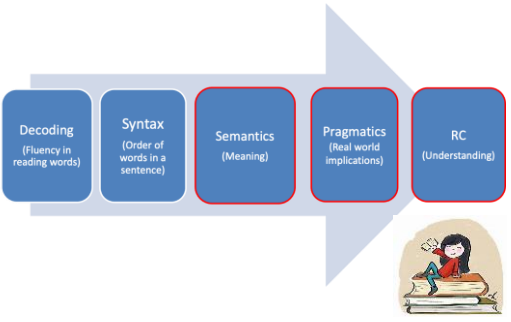
. . . to increase complex thinking and feeling

\*Stages listed are for typically developing children

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### From Fluency to Comprehension



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## Skilled Readers: Research

- Children with HFASD rely on a bottom up approaches 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-aged samples."
- So, RC problems may not become apparent until the mid to late primary school years when texts require both problem solving and *inference skills* i.e. higher-level semantic and pragmatic interpretation is needed.

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## The 3 'I's'

- Students with ASD are more likely to interpret language literally
- 3 I's
  - Inferences
  - Implications
  - Innuendoes
- They need work on prediction and perspective taking related to characters and events.
  - Including metaphor and verbal absurdities.
  - They have trouble recalling information from ambiguous texts



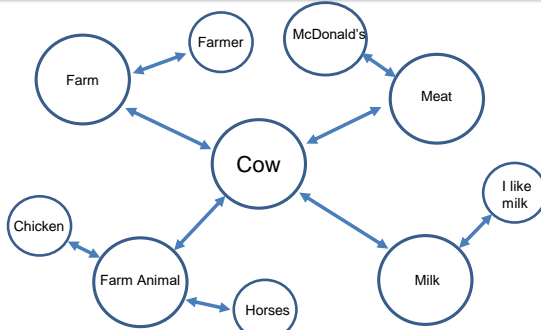
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## Strategies for RC

- Colasent and Griffith (1998) presented a *content overview* before reading themed books to students with autism.
- *Building background knowledge* through 'pre-teaching' i.e. orienting the child the day *before* school.
- Use of *visual aids* in the forms of semantic feature analysis, *semantic maps*, or Venn diagrams for brainstorming and organizing known information related to a topic before reading or *especially writing*.

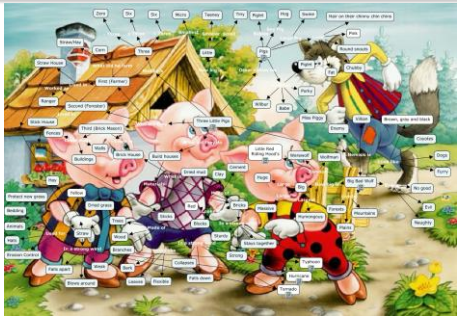
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## Spidergram/Brain Storm Map



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## Evaluating Narratives



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## Evaluating Narratives

- **Causative:** Identifying causes for events or motivations for behaviors. **THERE MUST BE A REASON!!!**
- **Emotion and cognition**
  - Label characters' internal states
  - Explain internal states
- **Character speech**
  - Adopt the character's perspective by speaking in the character's voice: LETS ACT IT OUT. YOU BE THE PIG WHO PLAY'S THE FLUTE. WHAT WOULD HE SAY?
- **Negatives Hedges**
  - State conditions or situations that are contrary to expectations: WHAT IF THE BIG BAD WOLF HAD A TERRIBLE CHILDHOOD?
- **Onomatopoeia and sound effects**
  - Draw listener's attention to story events



(What's he thinking?)  
 Why are they having fun and he is working so hard?  
 Intensifiers/attention getters  
 —Draw listener's attention to the importance of certain aspects of the narrative  
 • Subjective remarks: What do you think about this scene?

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PLAY PROJECT A Literary Prize if you can define. . .

### Anacoluthon

- anacoluthon
- [ˌənəkəˈloʊθən]
- NOUN
- a sentence or construction in which the expected grammatical sequence is absent, for example while in the garden, the door banged shut.

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PLAY PROJECT Summary

- Children with autism will become bibliophiles if books are presented at the right time in the right way.
- Literacy is the magical doorway into the world of human culture and human potetial.
- We must exhort children with autism to appreciate the beauty of words, books, and reading (especially fiction)
- Development leads to literacy and literacy leads to development

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PLAY PROJECT Summary

- Reading (especially fiction) is a most wonderful way to help the child with autism grow intellectually, emotionally, and socially.
- By building their literacy capacities, the children and adolescents with ASD will be encouraged to reach for their full potential and flourish in the real world—Life Itself!
- So let's encourage our children and adolescents to work hard, build a strong brick house, so the Big Bad Wolf won't get them. . .

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PLAY PROJECT . . .and they will live happily ever after



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PLAY PROJECT playproject.org

## The End!

 An illustration of three pig characters from the story 'Little Pigs'. One pig is saying 'Bye!' in a speech bubble. Another pig is saying 'Love Books' in a speech bubble. A third pig is pointing to a book titled 'Especially Fiction'. The characters are standing on a blue platform that looks like a pair of glasses.

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www.playproject.org

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