Early Intervention: Essential Things to Know about Play

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Disclosures

• Employed by Kennedy Krieger Institute
• Research funding from CDC, NIH, IES, Simons Foundation
• Owner of Bundle of Learning which receives proceeds of sales of Bear’s Applesauce Picnic
Objectives

1. Identify the main stages of play development.
2. List 3 characteristics of toys that enhance the ability to target treatment goals.
3. List 3 evidence-based strategies that can be used when teaching in the context of play.
Topics covered

• Introduction: Essential things to know about play
• Identify the main stages of play development.
  – What is play and why is it important
  – Relation between play and other developmental domains
  – Vygotsky and developmental play levels
• Considering intervention goals
  – Selecting toys as treatment materials
  – Setting up intervention environment
• Evidence-based strategies – play
  – Integrating play and language intervention
Children with ASD

• Atypical attention biases
• Reduced frequency and qualitative differences in play compared to children with TD or other DD (see Lieberman & Yoder, 2012):
  – exploratory play (Williams, 2003)
  – nonsymbolic play (Stone et al., 1990; Williams et al., 2001)
  – symbolic play (Wetherby et al., 2007)
• Impaired joint attention
• Impaired social initiation and reciprocity
Inter-connectedness

- Language
- Social
- Play

e.g., Lieberman & Yoder, 2012 Meta-analysis
When we think about play

Must consider language and social ‘load’ and goals
Intervention involves Interaction

Play – Social Connection

Social Interaction

Play activity is challenging for the child

Play activity is within child’s skill level

(Pierce-Jordan & Lifter, 2005)
Play with objects

- representations
- generativity

Play with objects + people

- language
- turn taking
- anticipation
- relating ideas
Vygotsky’s Zones of Proximal Development

- Acquired skill
- Emerging skill
- Outside of ability level
What the child is doing reflects

What the child knows

What the child is thinking about (ideas)
Essential things to know about play

• Focus today: up to developmental age 3 years
• Play is a developmental construct
• Play is an integration of multiple developmental systems
• Play offers unlimited learning opportunities when strategically curated
• Play is work for kids, but must also be made fun
Play is important

- for promoting play as a developmental domain (developmental play levels)
- “for implementing a wide variety of developmental goals (e.g., language, social, and motor goals) because of the natural context that play provides.” (Lifter, 2011, p. 226)
What’s happening?

Belly Button Book
Sandra Boynton
There’s a lot to know!

- Where is this?
- What are they doing?
- What’s needed?
- What’s the sequence?
- Usual time of day?
- Why is this funny?
- What comes next?

Belly Button Book
Sandra Boynton
How does a child learn all that?

• Direct experience in a meaningful context (Schreibman et al., 2015)
• Over and over again (Nash & Donaldson, 2005)
• With language mapped onto the experience
  – “Wash your foot/hand/belly/hair/face”
  – “Splash”
  – “Soapy bubbles!”
  – Wet/dry
  – Off/on
  – Soap, towel, water, under…
• Often within engagement with others (Conboy et al., 2015)
Learning

• Rote vs networked and functional
• Networked and functional
  – Used to communicate, interact, make stuff happen, learn more, entertain self…
  – Builds gradually, needs repeated experience
  – Gets associated with other skills/knowledge
  – Transfers from being hard to do to being easy(ier)
Children are designed to

• Make stuff happen
The “quality of a child’s early environment and the availability of appropriate experiences at the right stages of development are crucial in determining the strength or weakness of the brain’s architecture, which, in turn, determines how well he or she will be able to think and to regulate emotions.” Shonkoff et al., 2008 p. 1
Not just any experience...

Screenshot retrieved from:
http://i2.cdn.turner.com/cnn/2012/images/04/02/t1larg.autism.bobby.irpt.jpg
Guided Experience
Familiar
Predictable
elements

Secure and reinforcing

Motivating

Verbal & Social Input

Developmentally appropriate

Meaningful role for child

http://www.healthzoneng.com
Different ways to think about play
States of Joint Engagement

**Stages of Play**

- **Unoccupied Play**
  - Birth to 3 Months
  - Babies play through movement of body and are learning how their body moves.

- **Solitary Play**
  - Birth to 2 Years
  - Child plays alone and isn't yet interested in playing with others.

- **Spectator/Onlooker**
  - 2 Years
  - Child watches others play, but doesn't play with them.

- **Parallel Play**
  - 2+ Years
  - Child plays alongside others, but doesn't play with them.

- **Associate Play**
  - 3-4 Years
  - Child begins interacting with other children but interaction is limited.

- **Cooperative Play**
  - 4+ Years
  - Child plays with other children and is interested in both the other children and the activity.
Play

- Toy Play
- Social Play
- Games with Rules
- Rough & Tumble Play
When SLPs are present,

- There is an agenda…
- We want children to
  - Engage
  - Learn
Through play, you can

• Help children *actively construct* new knowledge about objects, people, and events

• Map language onto that knowledge

• BUT success depends on *us*
  – *How you construct the learning experience*
To maximize success

- Start where the child ‘is’
  - With what the child knows
  - With what the child is thinking about
Sensorimotor–Exploratory
Relational–Nonfunctional
Functional–Conventional
Symbolic

**Change in Agent**
- Self-as-Agent
- Passive-Other-as-Agent
- Active-Other-as-Agent

**Change in Instrument**
- Realistic Object
- Substitute Object
- Imaginary Object

**Schemes**
- Single Scheme
- Multiple Schemes
- Complex/Planned Schemes

Play Development

- **Infancy**
  - Indiscriminate actions on objects: pick up & drop, bang, mouth, take apart to grasp objects.

- **Late Infancy**
  - Simple combinations (in and out of containers)

- **Toddlers**
  - Functional combinations (nesting cups)
  - Brush own hair

- **Late Toddler-Preschool**
  - Early pretend to symbolic
# Unfolding of play:

% of children making ≥1 response of each type given a metal tea set

Fenson, Kagan, Kearsley, Zelazo, 1976

<table>
<thead>
<tr>
<th></th>
<th>7m</th>
<th>9m</th>
<th>13m</th>
<th>20m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Banging</strong></td>
<td>.73</td>
<td>.83</td>
<td>.23</td>
<td>.12</td>
</tr>
<tr>
<td><strong>Relational</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Simple (touch spoon to pot)</td>
<td>.09</td>
<td>.92</td>
<td>.77</td>
<td>.88</td>
</tr>
<tr>
<td>Accommodative (lid on pot)</td>
<td>.00</td>
<td>.33</td>
<td>1.00</td>
<td>1.00</td>
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<tr>
<td>Grouping (cups together)</td>
<td>.00</td>
<td>.17</td>
<td>.38</td>
<td>.88</td>
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<tr>
<td><strong>Symbolic</strong></td>
<td>.00</td>
<td>.08</td>
<td>.77</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Sequential</strong></td>
<td>.18</td>
<td>.17</td>
<td>.23</td>
<td>.76</td>
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Development of Play

- Piaget
- Cognitive and developmental science
  - Cross-sectional and longitudinal studies
  - Infancy through preschool years

Watson et al., ASAP (2011)
<table>
<thead>
<tr>
<th><strong>Exploratory</strong></th>
<th><strong>Relational</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age of Emergence: 2-10 months</strong></td>
<td><strong>Age of Emergence: 10-18 months</strong></td>
</tr>
<tr>
<td><strong>E1.</strong> Child picks up and looks at a toy</td>
<td></td>
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<tr>
<td><strong>E2.</strong> Child plays with toys using both hands together (may include banging, shaking, rubbing, squeezing, mouthing, licking, smelling)</td>
<td></td>
</tr>
<tr>
<td><strong>E3.</strong> Child plays with one toy in three or more different ways</td>
<td><strong>R1.</strong> Child takes pieces of toys apart</td>
</tr>
<tr>
<td></td>
<td><strong>R2.</strong> Child puts toys together in simple ways</td>
</tr>
<tr>
<td></td>
<td><strong>R3.</strong> Child puts several toys together in specific ways</td>
</tr>
</tbody>
</table>
Exploring & Experimenting

- Treats all objects the same (mouth, bang)
- Differentiated actions for different object types (roll round things; squeeze soft things)
- Use 2 or more objects together

https://alphamom.com/parenting/baby/baby-mouthing-shared-toys/
https://lovevery.com/products/the-play-kits
Relational (Combinations)  
9-13 months

- Puts objects into and takes out of container
- Take apart, put together
- Cause-effect; More differentiation of combinations
## Discovering Relationships

### Relational

Age of Emergence: 10-18 months

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Battat – Pop-Up Pals  
Fisher-Price Giant Rock-a-Stack  
PlayKidz Super Durable Pound a Ball  
Fisher-Price Tumblin-Sounds-Giraffe

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Watson et al., ASAP (2011)  
Relational 1
Emerges ~10 months

Inny Bin Fat Brain Toys

https://messymotherhood.com/homemade-toys-clothes-pin-drop/
Construct relationships that use the unique physical properties of objects (e.g., stacking cups and blocks).


DJECO - DJE-108 Topanifarm Nest and Stack Blocks Set
**Function Emerges 12-18 mos**

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>F1.</strong></td>
<td>Child plays with toys in functional or simple pretend ways</td>
</tr>
<tr>
<td><strong>F2.</strong></td>
<td>Child plays with toys in simple pretend ways directed to self</td>
</tr>
<tr>
<td><strong>F3.</strong></td>
<td>Child includes a doll/action figure in simple pretend play with toys</td>
</tr>
<tr>
<td><strong>F4.</strong></td>
<td>Child includes other people in simple pretend play with toys</td>
</tr>
<tr>
<td><strong>F5.</strong></td>
<td>Child uses the same action in simple pretend play with two different people or dolls/figures</td>
</tr>
</tbody>
</table>

Watson et al., ASAP (2011)
## Symbolic

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<tbody>
<tr>
<td><strong>S1.</strong> Child makes doll/figure move or do things as if it were alive</td>
<td></td>
</tr>
<tr>
<td><strong>S2.</strong> Child does 2 different pretend actions, one right after another, with the same toy</td>
<td></td>
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<td><strong>S3.</strong> Child does 3 or more different pretend actions, one right after another, with the same toy</td>
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<tr>
<td><strong>S4.</strong> Child uses one toy/object to represent or stand for another</td>
<td></td>
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<td><strong>S5.</strong> Child uses pretend qualities in play</td>
<td></td>
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<tr>
<td><strong>S6.</strong> Child uses pretend objects in play</td>
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</table>
Setting up a sequence 22 months
Eat it. Eat. Hot? Is it hot?

23 Months
Substitution play

3-1/2 years
Object knowledge: Entry into representational thought & symbols
- Object function
- Categories
- Words; point of reference and shared knowledge

Relations between objects
- Play with combinations of objects
- Word combinations (ball in box)

Sequences
- Event representation
- Stories
- More imagination
Setting instructional goals

- **Play**
  - Concepts
  - Representational thought
  - Sequences

- **Language**
  - Vocabulary
  - Sentences
  - On-topic (conversation)

- **Social**
  - Turn-taking
  - Imitation
  - Joint attention
Setting instructional goals

**Play**
- Concepts
- Representational thought
- Sequences
- Problem solving

**Language**
- Vocabulary
- Sentences
- On-topic (conversation)

**Social**
- Turn-taking
- Imitation
- Joint attention

Meaning-related Emergent Literacy
Toys

OX Tools
Not all toys are equally effective treatment ‘tools’
Object Affordances

Dicartia

Affordance: property of an object that makes clear how it can or should be used

Merriman-Webster

Bundle of Learning
Discovering Relationships

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<table>
<thead>
<tr>
<th>Toy</th>
<th>Description</th>
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</thead>
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Watson et al., ASAP (2011)
Activity

- What can be done with this toy?
- What play levels?
- What other toys could you use with this toy?
Environmental Engineering

- De-clutter
- Choose objects
  - Child interest
  - Two can play
  - Multiple components
  - Developmental play level
  - Multiples of same object or object type
  - Afford play routines
  - Afford communicative temptations
  - Afford expansion
  - Accessibility for you/child
  - Goals
- Rotate

DJECO - DJE-108 Topanifarm Nest and Stack Blocks Set
Making do

https://www.greentoys.com/products/gt-train-blue

Instructional strategies

Naturalistic Developmental Behavioral Interventions: Empirically Validated Treatments for Autism Spectrum Disorder

Laura Schreibman · Geraldine Dawson · Aubyn C. Stahmer · Rebecca Landa · Sally J. Rogers · Gail G. McGee · Connie Kasari · Brooke Ingersoll · Ann P. Kaiser · Yvonne Bruinsma · Erin McNeerney · Amy Wetherby · Alycia Halladay
Intervention Strategies

- Face to face
- Clear and appropriate cues
  - So child knows what you want him/her to do
  - Developmentally appropriate
- Imitate and expand
- Motivating activities
  - Incorporate child’s interests; Follow child’s lead
  - Predictable (Routines)
- Prompting
  - Strategic use of modeling
- Reinforcing
  - Reinforcers relevant to the behavior
  - Quickly enough for the child to know s/he was being reinforced
Routines form the basis for how to cognitively represent experience with events.
Toy Routine Tips

1. Set out toys child likes *(motivating)*
2. Follow child’s lead *(child contingent)*
3. Keep *language simple* and the same each time (target vocabulary)
4. Take turns *(balanced turns)*
5. *Pause* and let child fill in what comes next
6. Help child when he/she needs it *(scaffold/modeling)*
7. Do the *routines* over and over again
8. Change it up *a little bit*
9. Make surprising things happen
10. Reward attempts
4 parts to a routine

- Getting started: Object or action
- Role for child. Role for you.
- Words for each part of the routine.
- Keep it simple.
- Make it fun.
Routines

• Predictable order
  – Put duck in bin
  – Pour in water
  – Wash duck

• Clear roles (child does, you do)

• Put words to it
<table>
<thead>
<tr>
<th>Toy sequence</th>
<th>Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put cow in truck</td>
<td>_____is in the truck.</td>
</tr>
<tr>
<td>Put sheep in the truck</td>
<td>_____ is in the truck.</td>
</tr>
<tr>
<td>Push the truck</td>
<td>Go truck. Go. Beep.</td>
</tr>
<tr>
<td>Dump the truck</td>
<td>The animals came out!</td>
</tr>
<tr>
<td>Feed the animals</td>
<td>The animals eat corn!</td>
</tr>
</tbody>
</table>
Toys + Books = Potent Teaching Tools
Using books to foster play, language, & social development

Bundle of Learning

Contact devscibooks@gmail.com
References


• Lifter K et al. (2011). Overview of play: Its uses and importance in early intervention/early childhood special education. *Infants and Young Children*, 24(3), 225–245
Question & Answer (Q&A)

- Instructions: In Slido, toggle over to the Q&A section to enter questions.
- All questions are moderated.