**Understanding Children’s Play through Schemas**

**Aims**

* Clarify what we mean when we talk about ‘schema’ or ‘schemas’
* Discover how to spot and understand schema
* Identify what different schema mean by reflecting on children’s actions and interests
* Consider the relationship between play and learning
* Evaluate the conditions that support schema development
* Review the planning and assessment cycle – considering children’s interests and planning for ‘next steps’ in children’s learning

**How do Schemas develop?**

* Schemas develop from prior experience and knowledge.
* They simplify reality, setting up expectations about what is probable in relation to particular context.
* So if we go back to eggs – did anybody say they bounce?

**Jean Piaget**



**Cognitive development theory**

* Children "construct" their understanding of the world through their active involvement and interactions.
* Studied his 3 children to focus not on what they knew but how they knew it.
* Described children's understanding as their "schemas” and the way they develop them through –assimilation –accommodation.

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| **Piaget’s Stages of Cognitive Development** |

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| **Typical Age Range** | **Description of Stage** | **Developmental Phenomena** |
| **Birth to nearly 2 years** | ***Sensorimotor***  **Experiencing the world through senses and actions (looking, touching, mouthing)** | **Object permanence**  **Stranger anxiety** |
| **About 2 to 6 years** | ***Preoperational***  **Representing things with words and images but lacking logical reasoning** | **Pretend play**  **Egocentricism**  **Language development** |
| **About 7 to 11 years** | ***Concrete operational***  **Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations** | **Conservation**  **Mathematical transformations** |
| **About 12 through adulthood** | ***Formal operational***  **Abstract reasoning** | **Abstract logic**  **Potential for moral reasoning** |

**The concept of a schema**

This definition of a schema involves action:

* A schema […] is a pattern of repeatable behaviour into which experiences are assimilated and that are gradually co-ordinated. Co-ordinations lead to higher level and more powerful schemas. Athey, 1990, p.37

**Children’s schemas**

* When young children are allowed to play freely they often repeat actions over and over again.
* They do this through sensori-motor behaviour, role play and representation (drawings, paintings, mark-making, movement)
* The patterns of play we see through these repeated actions can be interpreted as ‘schema’
* These schema allow a child to explore and learn about their world in a way that reflects their own learning style and brain development.

**Why are schema important?**

* Because during their early years – especially between 2 and 5 years a child’s learning is mainly through their schemas.
* If you observe them you will notice that some children seem quite compelled to follow a particular schema.

**Some schema you may know**

Have you noticed children who:

* Like to tie everything up with tape or string - This a connecting schema.
* Turn on taps and watch the sink overflow- This is a trajectory schema.
* Carry things from one place to another- This a transporting schema.

**2. We need to consider what our observations tell us about children’s learning and development. So that we can play for them to make better.**

**OBSERVING CHILDREN’S PATTERNS OF PLAY**

**1. We often notice what children are doing, write it down and think nothing more of it. BUT …..**

**5. If we know about a child’s interests it means we can help them continue their explorations so that they get a feeling of fulfilment and satisfaction.**

**4. They may be interested in everything to do with movement – rolling, swinging, playing with cars, riding on the bikes. This tells us a lot.**

**3. Making 2-3 observations of a child over a day or more will tell us what is on the child’s ‘mind’ currently.**

**What’s going on?**

* Schema: Positioning
* Group of wild animals
* Dinosaurs added
* Animals all lying down
* 4 animals matched with corresponding dinosaurs
* Group according to type – animals in one square and dinosaurs in another
* What is he demonstrating knowledge of?

**What’s going on?**

* Schema 1: Enclosing Schema 2: Positioning: On top
* Creating enclosures for animals
* Adding animal
* Creating beds for each family member
* Relative size appears to be taken into account
* What is he demonstrating knowledge of?

**Schema: description of possible behaviours**

**Transporting –** A Child may carry all the bricks from one place to another in a bag, the sand from the tray to the home corner in a bucket, push a friend around in a toy pram.

**Enveloping**- A Child may cover themselves with their flannel when washing, wrap a doll up in a blanket, sit in the same tray and cover their legs with sand, cover their whole painting with one colour.

**Enclosure/containing –** AChild may put their thumb in and out of their mouth, fill up and empty containers of all kinds, climb into large cartons, sit in the tunnel, build ‘cages’ with blocks.

**Trajectory: diagonal vertical horizontal-** A child may gaze at your face, drop things from their cot, make arcs in their spilt food with their hand, play with the running water in the bathroom, climb up and jump off furniture, line up the cars, bounce and kick balls, throw.

**Rotation-** A child may be fascinated by the spinning washing machine, love anything with wheels, roll down a hill, enjoy spinning around or being swung around.

**Connection**- A childmay distribute and collect objects to and from a practitioner, spend time joining the train trucks together, stick the masking tape across from the table to the chair.

**Positioning-** A child mayput things on their head, prefer their custard next to their sponge not over it, lie on the floor or under the table, walk around the edge of the sandpit.

**Transforming-** A child may add juice their mashed potato, or sand to the water tray, enjoy adding colour to cornflour or making dough.

**Schema and Mark-Making**

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**Horizontal**

**Vertical**

**Diagonal**

**Trajectory?**



**Is it a schema?**

* A child’s schema will be evident across a range of different situations
* It is important for practitioners to understand that a child is not being disruptive when engaged in schematic play
* Recognising schematic explorations as early learning is also important & practitioners should help to support the child by offering opportunities to test out their thinking BUT ….
* That doesn’t mean letting children do just what they want to do all of the time!

**Creating the conditions of learning (1)**

* Understanding where children are coming from (literally): home, family, pets, interests, journey, experiences, culture ...…..
* Providing a day which is punctuated by comforting routines but is filled with interesting and stimulating events such as walks to the park & the library; visits to a café or a farm; visitors who share their skills – a juggler, an artist, and a grandparent?
* An environment that invites engagement with others and a range of materials to explore, play with and create from.

**Creating the conditions of learning (2)**

* Open-ended activities
* Flexible use of resources
* Not one ‘right’ way to create
* Recognition of individual children’s preferred ways of learning
* Practitioners who are open to possibilities

**Planning for learning (1)**

* Observe the child so that you have a ‘picture’ of what they are exploring – note which schema or schemas any child is exploring – they may not all be exploring particular schemas.
* Review a series of observations to identify key information including how the explorations relate to the EYFS areas of learning.
* Use what you have found out about a child to plan new opportunities that will help them continue to explore ideas that interest them – these may be subjects such as dinosaurs, animals, superheroes, TV characters, cars, wheels or princesses.

**Planning for learning (2)**

* Some children may show little evidence of having a particular interest – this is where your planning can help them to develop a new interest – this might be triggered by sharing a book or introducing them to a new skill or technique.
* For a child who is highly involved in a particular schema it can seem as if they are simply repeating the same scenario or actions. BUT …. remember what we observed about the boy with the animals.

Ellie is very interested in exploring a rotational schema

Ellie loves dancing round with a scarf in her hand

**Next Steps:**

1. Extend Ellie’s interests in mark making showing her how to hold the pencil comfortably.
2. Introducestories, songs and poems that extend her interest such as: Here we ground the Mulberry Bush.
3. Introducevocabulary associated with movement such as round, circle, sphere, turn, rotate.

Ellie has been really interesting since we introduced the magnifying glass to look at a ladybird. She keeps making her fingers into a cylinder & putting them to her eye as if looking through a telescope

Ellie draws a lot of circles with felt pens

Ellie likes twirling round and round

**More experiences**

* Stories nourish children’s thinking.
* Children interested in positioning might be interested to think about ‘inside’ by looking at ‘Funny Bones’
* A child interested in transporting might enjoy Harry and the Bucketful of Dinosaurs.
* Children who are interested in enveloping might like Brown Bear, Brown Bear.

**Other experiences that support children’s learning**

* Almost any ‘real’ event such as a bus ride, a tram trip, going to the park or having lunch at McDonalds.
* Anything that is out of the ordinary such as a visit to a farm or the zoo, or seeing a live performance of a well-known character (such as Peppa Pig).
* Anything that is broadly connected with their interest such as a trip on a steam train, a ride on a donkey or digging for ‘treasure