Schemas and young children’s learning
Cathy Nutbrown
School of Education, The University of Sheffield

Research into the patterns that seem to underpin young children’s learning has helped many early years practitioners and parents to understand more about how children learn and what they need to help them further develop in their learning.

In the early 1980s a research study\(^1\) identified these underpinning patterns or ‘schemas’ as children explored many indoor and outdoor experiences. Since then many early years practitioners have usefully developed work to support young children’s learning. This short paper sets out a few thoughts about schemas, how parents and practitioners can identify them, and how knowing the schemas children are working on can focus what adults do in response.

**What is a schema?**

From birth children have particular patterns of behaviour – early on we see sucking and grasping schemas - and as children grow these schemas increase in number and complexity. Eventually, simple schemas that involve vertical, horizontal and circular movements become integrated and coordinated.

How can you spot a schema?

Watching children play and explore is the best way to identify the schemas that may be forming an underpinning pattern in their learning. For example if children seem to seek out toys and experiences related to vertical movement they may:

- use the climbing frame,
- draw vertical marks
- build tall towers with bricks
- look up at aeroplanes and birds
- jump
- prefer to be up high when they have a choice

Sometimes children seem absorbed with circular movement. They may:

- like to be spun round and round on a roundabout
- enjoy spinning their bodies around
- be fascinated with large wheels on big trucks
- seek out objects that are circular or have wheels
- make circular marks in their paintings or drawings
- enjoy rolling out pastry or playdough
What do you do when you spot a child’s schema?

When a child’s interest in vertical movement is identified, other experiences and equipment can be offered such as:

- visiting a shopping centre and using the escalator and glass lifts so that a child can see and experience the movement of going up and down,
- playing with toy parachutes,
- rolling a ball down a slope

By matching the learning opportunities they are given (at home and in group settings) with children’s schemas, parents and early years practitioners have a greater chance of sharing a child’s interest and further developing their learning because what is being offered is more likely to be ‘in-tune’ with the child’s pattern of development.

How many schemas are there and do all children work through all of them?

The original project identified a small number of schemas to do with movement: vertical (going up and down), enclosure (putting things inside other things), circular (going round and round), going over and under, going through, going back and forth, going round a boundary.

Other researchers have since identified other patterns that have dominated children’s play such as ‘connecting’. It’s hard to say if all children work their way through all of these schemas, but observations have shown that common patterns of behaviour.

---

related to movements can be seen in many children. Spotting schemas depends on adults watching carefully for patterns in children’s preferences that emerge as they play, and taking note of the marks they make and the stories they enjoy.

Why is it helpful to know about schemas?

Understanding what lies behind young children’s behaviours is useful to adults who live and work with them because sometimes it can explain why children do the things they do. For example: some children might spend considerable time making collections of objects inside a bigger container, if they do this time and time again, it might offer a clue to other things that they might enjoy and be interested in. Many children seem fascinated at some point in their development by putting things inside other things. They may:

- collect a set of apparently random objects into a handbag, a tin or a box.
- like to hide themselves – in a tent, under a table, under their duvet, or inside the playhouse.
- be fascinated with the homes of tiny creatures – rabbit’s burrows, birds’ nests and so on.

When adults offer children new experiences, which match with their underpinning schema, they can extend children’s learning and thinking.

Knowing that a child is interested in ‘enclosing’ (putting things inside things) might lead an adult to offer objects and experiences that fit with this interest, such as:

- playing in tents,
- sorting a set of Russian Dolls,
• making food that has something inside (such as pies, sandwiches), hiding in large boxes or other enclosures.

So, knowing which particular schemas children are interested in helps parents at home, and practitioners in early years settings to offer them experiences – at home, in group settings and on trips and visits, which match their interests and are more likely to interest and capture their interest and attention.

_Schemas seem to be about moving – how does that help learning and development?_

Much of young children’s learning is physical, it involves a lot of moving around - jumping, twirling, hiding, skipping, rolling - healthy, happy children are on the move much of the time. And this movement supports the development of their minds as well as their bodies. One thing that I find fascinating is the way in which several schemas (vertical, enclosure, going over, under and through) involves children in making movements, and later marks, that include all those needed to write conventionally recognised symbols found in many languages around the world.

When spiders, spokes and sunshine appear in children’s drawings, they have most of the marks they need to write all the symbols in the written scripts of many languages. So the early development of schemas through children’s physical movement provides an essential underpinning for eventually beginning to write.

Watching children as they play is the best way to begin to understand the schemas that underpin their learning, and to plan the next steps in learning experiences to match their needs.