

The revised EYFS Curriculum: Supplement with SchemaPlay

By John Siraj-Blatchford and Lynnette Brock

***Good sense which once ruled far and wide,
Now in our schools to rest is laid.
Science, its once beloved child,
Killed it to see how it was made***

(Giuseppe Giuste, 1849).

A number of weaknesses have been identified in the recently published EYFS reforms (2020, Early Adopter Framework). The revisions are clearly intended in part to increase the reception year curriculum subject content of the EYFS; this is clear in the new emphasis upon 'Educational Programmes', the reduced emphasis on practitioners 'responding' to children's interests, and the new emphasis upon them 'stimulating' their interests instead. All of this change of emphasis is particularly pronounced in the statements made that relate to the reception year. While the orders used to suggest that more adult-led learning might be gradually introduced when developmentally appropriate, we now have a clear expectation that every child by the time they reach the end of reception should be 'ready' for adult 'taught' content. This renewed demand for universal 'readiness' seems especially naive when we consider the negative side effects of relying upon direct instruction in Primary schools, and the fact that the children born in the summer months have 20% less life experience than their peers. These are the most rapid years of intellectual development, but even if we were talking about secondary school experience, a 20% difference in age is substantial. Few parents or teachers would be comfortable with the idea that their 13 year-old child should be expected to compete against 16 year-olds for their norm referenced GCSE grades and it is equally unrealistic to expect a child of 35 months to benefit from the same curriculum as a child of 43 months.

It is valuable to reflect upon the underlying origin of the difficulties with this revision. A fundamental fact of scientific research is that the more reliability that you seek in your findings, the narrower they have to be defined. Whilst many of the findings of the most robust and theoretically grounded early childhood studies, such as the Effective Provision of Preschool Education (EPPE) (Sylva et al, 2010), were extremely influential in the expansion of provision and in quality improvements in the sector, in the more recent economic context of austerity, they have become politically inconvenient.

Policy makers have also increasingly commissioned, and been overly influenced by studies that have prioritised reliability over theoretical relevance. Increasingly education has adopted the methodologies of medical research, but has failed to follow their good practice in studying the side effects of the 'treatments' they test (Zhao, 2017). High quality research is expensive, and recent studies that have been carried out with older children in primary education are now too often applied uncritically to early childhood. Misinterpretations are also rife as the final decision making is often in the hands of educational 'experts' who demonstrate a poor understanding of early childhood learning and development.

In this article we identify two related problems with the revisions and we argue that the supplementary adoption of SchemaPlay

principles and practices would go a long way towards alleviating these problems. The problems relate to the over-emphasis on the relative importance of language learning and development, and a lack of understanding of 'emergence' in early childhood development.

As Helen Moylett (2020) has argued, the statement that is made in the revision that; "*the development of children's spoken language underpins all seven areas of learning and development*" is neither developmentally nor chronologically correct in early childhood. References made to the importance of 'conversations' and 'vocabulary' also suggests a lack of understanding of the nature and importance of 'sustained shared thinking' as a pedagogic engagement of adults and children. The revisions also fail to fully recognise the importance of physical education and PSED; both subject areas that are critical contributors to the child's overall cognitive development. The focus placed on attachment and executive function skills as *Early Learning Goals* is also inappropriate; as Anne O'Connor (2020, online) has suggested: "*It is not the Child's responsibility to work hard at creating attachments... Responsibility for children's attachments lies with us, the adults caring for them, not the children.*"

Understanding 'Emergence'

If we consider any one of the 'Early Learning Goals' that are specified in the English EYFS curriculum framework, it is clear that the skills, knowledge and understanding that they demand requires the child's development of psychologically complex intellectual and affective structures. But as soon as any 'desirable outcome' or 'Learning Goal' is defined there will be some individuals who imagine that this can simply be broken down to reveal its constituent pre-requisite competencies and that education will then simply involve a teaching process where each is sequentially introduced to the child to achieve the target outcome. This assumption totally disregards one of the central principles of early childhood learning and development; a principle that has been strengthened by recent evidence gained from cognitive and neuroscience research. Learning and development is widely understood as a highly complex systemic process that is characterised by 'emergence'. In his influential text, *'Thought and Language'*, Vygotsky (1934) referred to two alternative ways of thinking about the psychological structures of the mind. The first, he argued, might be to follow a form of *scientific fundamentalism* and adopt the perspective of a chemist in trying to identify the particular *elements* that make up the structure as a whole. Vygotsky identifies the futility of this approach with the example of water (H₂O): If one was looking for an explanation for its valuable property of extinguishing fire it would clearly be unhelpful to look at either one of its constituent elements: Hydrogen burns fiercely, and oxygen also sustains fire...neither would extinguish it. The natural world is replete with other examples of emergent qualities; life itself is an example of emergence; neither sodium nor chlorine taste at all salty, yet salt *is* sodium chloride (NaCl); the totally independent movements of starlings, and other flocking and swarming animals, combine to create amazingly elegant patterns; and the independent behaviours of ants and termites combine to create highly complex and sophisticated structures. In every case, emergent phenomenon cannot be reduced to, and they achieve significantly more than, the contributing elements that make them up. So when we apply the term

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'emergence' to early childhood learning and development it suggests that the cognitive structures that emerge in children are irreducible to their component parts.

Emergence was, in fact, an underlying assumption in the developmental psychologies' of both Piaget and Vygotsky (Sawyer, 2003).

Many will be familiar with the term 'emergent literacy'. This was a term first applied in Marie Clay's doctoral dissertation (Clay, 1966); and Sulzby and Teale (1991) define the concept accurately as:

"...the skills, knowledge, and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing", as well as; "...the environments that support these developments." (p. 849).

In practical terms we know that emergent literacy is all about encouraging playful 'mark making', the use of one handed tools, and resourcing activities to promote hand-eye co-ordination, as a natural prelude to writing, it is also about *reading* a range of different kinds of text to children, and drawing their attention to the value and uses of text in the world around them, naming objects and labelling them. Emergent approaches to literacy encourage 'literacy play' in the nursery, setting up pretend office play environments, libraries and story books for children to integrate into their play. Parents and practitioners will also show children the value that they place in their own use of print and encourage the children to develop an emergent awareness of the nature and value of these resources for themselves.

SchemaPlay also supports practitioners in scaffolding many of the less obvious but crucial pre-requisite action schemes in free-play that are pulled together by a child when they learn to read: these include their oral language; their embodiment of the shapes that make up letter forms; including their visual discrimination of similarities and difference of shape through 'sorting', and 'matching' activities that extends to sorting and matching letter symbols; auditory discrimination of sounds; their capability of 'matching' letters to sounds; resources and tools to support wrist flexibility and anti-clockwise movements, supporting later letter formation, as well as their pincer grip, and sequencing games and activities to support later letter blending to create words and sentence structures. SchemaPlay recognises that children creatively pull these pre-requisite capabilities together and they achieve competence in reading and writing once they have developed an understanding of the purpose and value of reading and writing, and when they are strongly motivated to do it for themselves. This concept of 'emergence' applies to the development of complex operations across the curriculum more widely, and SchemaPlay resources identify activities to support young children in learning the skills, knowledge and attitudes that may be identified as the *(necessary but insufficient on their own)*, developmental precursors to all of the EYFS Learning Goals.

SchemaPlay pedagogy is firmly based upon the fact that each individual learner contributes to, and collaborates in, their own learning. Effective teaching and learning is co-constructed through a meeting of minds, which is facilitated by practitioners observing what children 'know' and 'can do' in their free-play and then creatively responding to this.

In practical terms this is achieved through identifying children's established schemes, and also the dominant figurative schemas, that reveal the most meaningful and motivating areas of knowledge that they engage with in their play. The practitioner is then able to provide the most appropriate resources and/or activities to seed the child's play in the direction of further learning and development. Practitioners identify what children 'know' about and find meaningful when they observe the child's self-chosen play resources and the ways in which they use them. For example, are they using a shopping bag to carry objects, or placing a train on a track or selecting a net for fishing. Listening to children's voices is also extremely important in helping practitioners identify a child's particular schema interests. Their observations of a young child might reveal a dominant interest in a particular superhero, in trucks, diggers, or in doctors or nurses. This might be conveyed figuratively in their drawings, in their actions and behaviours, from their repeated selection of a particular toy in their play, or from their talk in small-world and role-play narratives. Or, as pictured below, they may be playing out, 'in role', the schematic knowledge that they have gained from a recent trip or walk in the community.



An emergent recycling operative

A child was seen collecting various, apparently unrelated, items in a shopping trolley. His practitioner was at first puzzled and unsure how to respond to the play. The eureka moment came when she recognised that he was applying the schemes of 'transportation' and 'containment', and when he used the word 'recycling'. The practitioner then provided some props and resources that allowed the child to develop the play, applying his transporting and containing in 'matching' and 'sorting' the materials. She later learnt that the boy had visited a local recycling centre so she provided him with a high-vis jacket and hard hat that matched the costume of people he had seen working there. She also helped him find the large containers (pictured above) that represented for him in his play the large containers that were used to sort the waste materials. All of this matched the figurative schema of the recycler and the recycling containers that he had seen at the 'tip'. She found that he had gained a good understanding of the role of the recycling operative

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and this was demonstrated through his direction of 'customers' to different bins; his application of the schemes of transporting, sorting and containing the recycled materials, and in his recording of his peer's names as they entered his improvised recycling centre.

The practitioner had used this motivating context to introduce him to the ideas of 'matching' materials and 'sorting', which were both important mathematical schemes. She also noted that this was the first time the child had demonstrated mark making for a purpose. The practitioner supported the play, and encouraged other children to join it by introducing stories, videos, dance and drama related to recycling. She also went on to facilitate the extension of his schemes of containing, sorting, matching and recording to other schema contexts, such as sorting colours, sizes, vehicle types, shapes, etc. She always took care to provide scaffolding for learning by drawing upon something the children were comfortable in doing and which they enjoyed, beginning with something well within their capabilities that fostered new learning opportunities.

For a young child reading, writing and recycling are all extremely complex operations requiring the simultaneous application of a wide range of skills and capabilities.

In SchemaPlay we recognise that many of these pre-requisite capabilities are physical and spatial. In fact they are embodied. When we read, and in the execution of many other complex operations in mathematics, science and even when riding a bicycle, it is clear that conscious reasoning is not usually involved in the process. In fact conscious reasoning might actually inhibit performance. Despite this rather obvious fact, the revised EYFS argues that: *"The development of children's spoken language underpins all seven areas of learning and development"* (p8). Applying what is almost certainly a limited Vygotskian perspective and an over emphasis upon verbal reasoning in early childhood, it is suggested that communication and language *"form the foundations for language and cognitive development"* (op cit). This is an assumption commonly made by educational policy makers and it is consistent with another strong concern for practitioners to prioritise: *"...the phonics knowledge and language comprehension necessary to read, and the skills to communicate"*:

"If pupils cannot read, they will not be able to access the curriculum, and will be disadvantaged for life. Early deficits can persist throughout primary education, and children who lag behind in reading during pre-school will typically continue to do so for the rest of their schooling" (Ofsted 2019, p20).

From a primary school perspective, that either ignores, or is unaware of the realities of emergence, the logic of this may seem self-evident. But emphasising the formal teaching of phonics and comprehension in reception classes in the interest of 'readiness', is entirely unhelpful unless practitioners are supported in providing a more balanced and cross-curricular emergent literacy education throughout the whole of the foundation stage. Concerns to 'close the gap' between the learning outcomes of the most advantaged and disadvantaged children is a laudable objective and, as long as this is a gap that grows wider as children get older, it is understandable that from the perspective of schools that

they may be concerned that the gap already exists even before the child enters compulsory schooling. But the problems here are not simply a matter of 'readiness'. It is not only schools who sometimes complain about how 'ready' a child is. Even in pre-school settings practitioners sometimes complain that children come to them with 'insufficient language', experience or toilet training... What all these educators (who complain about readiness) have in common, is that they have forgotten, or perhaps they never learnt, what should be regarded as the **PRIME DIRECTIVE** of educational practice: ***Education requires that you first identify what a child knows and can do, and then you can build upon it...*** As Ausobel put it:

"If I had to reduce all of educational psychology to just one principle, I would say this:

The most important single factor influencing learning is what the learner already knows. Ascertain this and teach accordingly" (Ausobel et al, 1978, p163).

This was also one of the ten main findings of the largest research programme that has ever been funded by the UK Economic and Social Research Council; the £43 Million ESRC Teaching and Learning Research Programme (James & Pollard, 2011). It is also where SchemaPlay supports practitioners most significantly, helping them identify the schemes and schemas that are meaningful and motivating to young children, and providing the resources to support them in building progressively upon this prior knowledge and experience.

Language in Child Development and Learning

As previously suggested, the over emphasis on language and communication at the expense of physical and social development may be, in large part, due to a lack of understanding of the concept of 'Sustained Shared Thinking' (SST). Given the strength of the research evidence that has associated SST with early and enduring learning outcomes, it is not at all surprising that the concept has been highlighted in a number of DfE and Ofsted guidance documents. If care had been taken to examine the original research sources more closely it might have been recognised that SST has a great deal more significance than simply the increased use of language or conversation. Whilst it is closely related to verbal (cognitive) exchanges that are typical of what Wells (1999), Mercer (2000) and Alexander (2004) referred to as 'dialogic' practice or 'Inter-thinking' this takes on a quite different form in the early childhood educational context than it does in schools:

"What is novel and important about SST is its evidential basis in group settings, and as a useful concept for pedagogy. Arguably, many other researchers have adopted similar terms and have described similar pedagogic practices. In reviewing the literature for this paper, the strongest theoretical resonances were found with Vygotsky (1978), who described a process where an educator supports children's learning within their "zone of proximal development". But interactions of this sort have also been described as "distributed cognitions" (Salomon, 1993), in terms of the pedagogy of "guided participation" (Rogoff, Mistry, Göncü & Mosier, 1993), and as "scaffolding" (Wood, Bruner & Ross, 1976). Similar examples of participation and interaction also characterise "dialogic teaching" (Alexander, 2004), dialogic enquiry" (Wells, 1999), "inter-thinking" (Mercer, 2000), and mutualist and dialectical pedagogy" (Bruner, 1996)." (Siraj-Blatchford, 2009).

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What we need to understand is that these dialogic practices that have been identified in schools as associated with effective practice provide a more verbal form of the same kind of 'SST' that has been identified as providing the most effective 'Pedagogic Moments' from the earliest stages of the child's *pre-verbal development*: Siraj-Blatchford's (2009) review of the research evidence demonstrates the different contexts for SST as progressing from the first 'meaningful gestures' that babies exchange with a parent or primary carer, through to cultural 'object substitutions', reciprocal, co-operative, and collaborative play with adults and peers.

In *Thought and Language*, Vygotsky (1934) argued that as long as we fail to recognise the importance of emergence, any study of the role of language in development would lead us to *'the same kind of dead end'* as we would find from studying the extinguishing properties of water through a study of its contributing elements (Vygotsky, (2012, p4). He argued that when we consider 'words' we are referring to groups or classes of objects that are in themselves simply generalisations. He argued that rather than looking at the constituent elements of language, we must seek to identify the *meanings* that arise as the product of combining words with sensation. He argued that *communication* presupposes both generalisations and word meanings:

"In the word we recognised only its external side. Yet it is in the internal aspect, in word meaning, that thought and speech unite into verbal thought" (Vygotsky, 2012, p6).

In his critique of the use of a behavioural objectives model to improve learning outcomes, Lawrence Stenhouse (1975) also made the point that;

"We do not teach people to jump higher by setting the bar higher, but by enabling them to criticize their present performance. The improvement of practice rests on diagnosis, not prognosis (p82).

For a psychologist, or for an educator, any test or evaluation that identifies only the final attainment of a particular 'learning goal' will be of limited practical value. But Vygotsky recognised that emergent cognitive functions *could* be detected in the joint communicative activity of adults and children within the Zone of Proximal Development (ZPD) which defined the limits of what the child could successfully achieve with the scaffolding and support from an adult:

"The function that at a certain point in time 'belongs' jointly to the child and the adult then becomes appropriated and internalised by the child, becoming his or her inner psychological function. The assessment of the child's ZPD thus allows for an evaluation approach that focuses on emergent psychological functions rather than on already existent ones" (Kozulin, 2012, npa).

It was these communicative incidents within the ZPD that were identified in the EPPE research as *Sustained Shared Thinking* (SST), highly correlated with effective pre-school practice. In SchemaPlay these same communicative incidents of SST are reported in the 'learning journeys' that are recorded as evidence of achievement for practitioner accreditation.

Below we meet Bertie.



At 4 years of age, Bertie was observed enjoying polishing mirrors. She spent hours covering an entire mirror surface with polish and then taking it off again repeatedly. She was applying an 'enclosing' scheme in her play. Her practitioner, noting that all the mirrors were square, went in search of other shaped mirrors to 'seed'

in the environment, hoping that this would offer her an appreciation of different shapes if she continued to enjoy covering more mirrors with polish.

Later that same week, Bertie was observed placing a length of ribbon across a table, pulling it back and forth. She appeared keen to work out how much ribbon was needed to cover the width of the table ('enclosing' and 'trajectory' schemes).



This was combined with other enclosing scheme activities that Bertie enjoyed. For example, she was seen wrapping material around objects, and folding cloths over and over again.



A couple of weeks later Bertie was seen handling a round mirror. She appeared to be interested in the edge of the mirror, as she traced around it with her fingers (applying 'rotating' and 'tracing around a boundary' schemes). Her practitioner introduced stories about shapes at this time and she positioned pictures of shapes around the outdoor environment to support an emergent understanding of 'shapes' – as a group with individual member schemas. For example, triangles, circles and squares. Baskets of matching objects of similar shapes were provided, promoting further appreciation of shapes in the environment and supporting a possible new matching scheme.

The practitioner also seeded large sheets of fabric of different shapes, along with 2D large shapes outdoors, with smaller versions and smaller pieces of fabric indoors (enabling further exploration of shapes to support the emergent figurative schema and to facilitate Bertie's enjoyed application of the enclosing scheme). During this period of exploration, Bertie had verbalised the shape 'circle', whilst covering the circular mirror with polish, in a self-selected free-play activity. After covering the mirror's face with polish and then removing it, she turned the circle shape around in her hands. This demonstrated that Bertie now had a figurative knowledge of 'circles'. Her practitioner decided to introduce her to a 2D shape socket puzzle. This required enclosing a shape in the corresponding place (fostering a 'matching' scheme). Whilst tracing around the

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edge of the circle shape. The practitioner said; “you know the name of this shape, can you remind me?” Bertie replied, “circle”, and she eagerly copied tracing her fingers around the edge of the shape, repeating the word ‘circle’. The practitioner then traced around the edges of the square puzzle piece and said, “square”, which Bertie copied a couple of times. This was repeated with the triangle shape. Bertie continued to play with the shape puzzle independently for over forty minutes. Later that day she was introduced to finding corresponding felt shapes to place over the top of the shapes inside their sockets. During the weeks that followed Bertie’s outdoor play was often focussed on covering large shapes with fabric; particularly spending much time covering the triangle shapes.

Other resources were seeded in the environment; such as napkins with coloured stitching along edges, suggesting where one might fold them to create a rectangle or a triangle, offering further appreciation of space and shape, whilst facilitating the enclosing scheme.

A triangle puzzle was also introduced, following Bertie’s developing interest in pointing out triangular objects in the environment and calling out, “look, a triangle!” The puzzle is stored in a triangular shaped box with an enclosing lid. A grey equilateral triangle template was taken out first, which Bertie explored by covering with different triangles.



To support the recognition of the differences between the triangles, the practitioner modelled tracing around them, supporting kinaesthetic recall. During the weeks that followed, Bertie started to count the sides of shapes and explored them further with her use of tessellation puzzles, appreciating; “Look...two triangles make a diamond!” Then, out of the blue, Bertie brought some sticks and playdough from home and showed her key person how to build shapes using the sticks (a connecting scheme now being applied in her self-chosen play, which were connected by enclosing the ends in playdough). She counted the sides as she constructed each 2D shape.

She also started to draw the shapes, and to use them to distinguish a clock in a house, a cupboard and table in her drawings, and enjoyed recreating shapes in dance with scarfs.

Bertie’s practitioner had facilitated a series of wonderful learning journeys, anchored in her schemes and schemas, and sensitively scaffolding her physical engagement in activities to support spatial reasoning and an emergent mathematical knowledge of shape.



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