

# Designing curriculum: Effective experiences and environments for early childhood education



ECE resources

Research evidence indicates that children actively construct their own understandings as they engage in interactions with their social and physical environment. For example, very young infants build patterns of expectations about the world through observing how objects move and how people behave. Experience of phenomena in a wide range of contexts, with both variety and repetition, enables children to acquire concepts (although it is important to avoid over-stimulation). As experience accumulates, infants, toddlers and young children modify, enrich, improve and sometimes replace earlier representations and understandings.

## Why is the quality of experience important in the early years?

Children's early experiences have a profound influence on the rest of development, setting trajectories for learning, health and behaviour into adulthood. Brain development in the very early years of life affects behaviour, cognition, learning capacity, memory and health. This makes the early years a period of opportunity to establish a good foundation for the child's later development.

Neuroscience research shows that the growth of connections between neurons is dependent on the incoming information from an infant or child's various experiences. Sensory experiences literally wire up the brain, stimulating neurons to form sensing pathways in the brain to build capacities for coping, movement, language, and thinking. Everything in the environment of a very young baby contributes to brain development, including noises, lights, touch, voices and smells. The kinds of experiences provided for children in their early years are fundamental to developing their growing brains.

## What kinds of experiences does research suggest are most important to include in curricular programming?

### Reading

Shared reading has a positive impact on children's vocabulary growth. Books offer children opportunities to hear new vocabulary and to respond to questions and conversations. Early patterns of reading tend to continue across a child's development: cultivating a love of books in children is found to begin a 'causal spiral' by stimulating children's interest in books, leading to increased exposure to books, improved language development and, later, more fluent reading. Without a rich foundation of early literacy experiences, children's lack of skills are likely to result in reduced reading and possibly the development of reading difficulties.

Tips for improving reading experiences:

- **Make the most of opportunities to read books** to children individually as well as in small and large groups.
- **Pay attention to the emotional aspects of a shared reading experience**, such as showing warmth, sensitivity and responsiveness to children's interests. Make one-on-one reading a meaningful experience and a cosy interaction between you, the child and the book.
- **Read with expression and excitement** to enhance children's enjoyment of the book.

- **Focus on engaging in discussion about books**, which is found to benefit children's oral language development. Ask questions which focus on the here and now of the story by labelling and defining things in the illustrations and discussing the meanings of words. Use the story and illustrations as a springboard for discussion by expanding or retelling the story, linking stories to children's experiences, making predictions and drawing inferences (for example 'What do you think she will put in the bag?'), and examining characters' motivations and why one event follows another.

### Play

In the very earliest years, play (rather than instruction) contributes most to brain development. Research suggests that opportunities to play are a significant factor related to brain and muscle development, and that purposeful play within the context of nurturing relationships and responsive interactions in particular accelerates learning and brain development in the early years. Play is thought to stimulate imagination and creativity, to encourage problem-solving, and to offer children opportunities to experiment with understandings and rules and test out language and reasoning. It also helps children develop confidence and self-esteem, a realistic perception of their strengths and weaknesses, and a positive attitude towards learning. Symbolic play, in which children use props or materials to symbolise something else, has been linked with language and literacy development along with skills in representing ideas and transforming materials. Imaginative play supports children to think about objects and events outside of the here and now, an ability which increases as children develop, becoming more abstract and less dependent on actual objects or props. Play is also thought to be an excellent context for teachers to promote vocabulary learning by extending children's interests and offering opportunities to acquire new words related to their interests.

Research also suggests that learning in various contexts can be enhanced by a focus on fantasy elements and themes (such as dragons and fairies). For example, children learn new information such as facts and skills more effectively when embedded in a fantasy context, and learn vocabulary more effectively from stories with fantastical elements. Children are also found to have better thinking abilities, such as the ability to reason counterfactually, to conceptualise actions, or to understand unlikely events, in the contexts of fantasy, and are also more able to transfer learning into problem-solving tasks. Children who engage in fantastical thinking, belief in fantasy and fantasy play are found to demonstrate better cognitive control or inhibition and ability to shift attention than children whose imaginary play involves more realistic themes such as diggers or shopping, for example.

Tips for effective play experiences:

- **Use simple toys that encourage imagination and creativity**, including household objects such as boxes, blankets, pots and pans, as well as playdough, blocks, sand, paper and crayons. Offer versatile and open-ended dress ups such as capes, scarves and aprons.
- **Be available to children as they play**. Station yourself in one location rather than circulating around the play area, which makes you more likely to engage children in cognitively challenging conversations.
- **Initiate conversation, model language use, and facilitate and expand on pretend talk**. Describe play. Ask projective and open-ended questions to elaborate on play themes, and introduce relevant knowledge and concepts.
- **Model pretend action**, which many studies show enhance children's pretence behaviours.

### Shared problem-solving

Shared endeavours depend upon teachers and children developing intersubjectivity, or joint attention and shared focus, understanding and purpose, in relation to the task or problem as they think together.

Small group activities can encourage dialogue when they are open-ended, include interesting and readily accessible materials, and require some level of guided approach. Problem-solving opportunities can emerge from the issues, dilemmas and questions in children's everyday lives, such as reaching the top of the painting easel, filling a bottle with a hole in it, making a tunnel in the sandpit, or helping a friend stop crying.

Tips for engaging in shared problem-solving:

- **Create opportunities for shared endeavours:** even the briefest of moments of shared attention with young infants are valuable.
- **Provide open-ended activities and authentic materials** (such as seeds and real gardening tools, or actual supermarket items for a play shop) to facilitate children's thinking and language use. Plan experiences which will encourage cognitively challenging conversations, and actively plan interactions that encourage higher-order thinking without being overly didactic and teacher-controlled.
- **Make the problematic situation explicit,** asking children to give their account of the problem and offer their perspective. Hold off giving direct answers or evaluating responses as good or correct. Encourage children to share knowledge, explain theories, ideas and hypotheses, challenge and evaluate each other's ideas, and consider choices.
- **Support children in extending their abilities to meet problem-solving tasks.** Unpack problems (whether these are task-focused or emotional problems) through question sequences, and model metacognitive strategies such as observing and monitoring your own actions and thinking. Use interactions to regulate the complexity and difficulty of information and support children's curiosity and perseverance.

### Are child-centred or teacher-directed experiences most effective for learning?

While children can be highly involved in cognitive activity as part of play and can be encouraged to construct or co-construct cognitive outcomes, research suggests this does not commonly occur. Some research shows that the play opportunities offered in settings are sometimes limited, and that the pedagogical role of the teacher in children's play is under-developed. Teacher-directed activities have some advantages for reading and learning basic literacy skills, but at the same time are found to have negative effects on children's motivation to learn. Worksheets and overly didactic teaching are not found to be helpful. Environments focused on scaffolding children's learning, where teachers only help children with tasks that are just beyond the child's current ability, have demonstrated greater positive effects for children's learning than either teacher-directed or child-centred environments.

Research in the UK finds that children's achievement is greater when teachers encourage more structured play and focus on academic skills through planned activities and careful selection of materials, as well as engaging in pedagogical practices such as direct teaching (questioning or modelling), 'sustained shared thinking', scaffolding children's play, and extending child-initiated interactions. An equal balance of teacher and child-initiated activities is found to be associated with the development of academic skills and higher levels of wellbeing and motivation, while cognitive achievement in particular seems directly linked to the amount and quality of teacher-initiated group work.

Tips for balancing child- and teacher-initiated experiences:

- **Focus curricular programmes on concepts and values** that are agreed to be important outcomes of early childhood education, such as self-regulation, positive learner identities, literacy skills, or the

learning outcomes listed in *Te Whāriki*, rather than on children's interests. Instead use children's interests as a context for developing those outcomes.

- **Ensure your involvement with children is both planned and focused** and encourages shared thinking. Aim to provide children with an optimal amount of cognitive challenge while offering responsive and sensitive support.
- **Carefully plan environments and allow plenty of time for child-initiated activity.** Support and seek to extend child-initiated interactions and play.
- **Offer rich and meaningful experiences.** Children need the opportunity early in life to learn from complex stimuli embedded in the activities of everyday life, such as shopping, gardening, or taking apart a car radio.
- **Provide teacher-initiated activities for small groups of children.** Developing a well thought-out, structured approach to curricular activities is found to lead to improved cognitive and linguistic outcomes for children.

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## Further Reading

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