Working theories

ECE resources

Working theories are holistic learning outcomes for children, and somewhat more complex than discrete and identifiable knowledge outcomes such as 'can count to ten'. Working theories are a way in which children draw on and apply ideas and understandings accumulated from their personal and social experiences, in order to make sense of their world. The concept of working theories celebrates children's unique ways of thinking and inquiring. It recognises that there are many possible theories which take children in different directions, and that these theories are improved and extended as children gain more knowledge and experience. Children's knowledge will vary according to prior experience and context, and will involve complex and unique combinations of knowledge, skills, strategies, attitudes and expectations.

What are working theories?

A working theory might be best identified by the way in which it connects one or more separate pieces of information in order to draw an inference or shape an argument. Working theories include:

> A child saying 'that's a girl's bike' (that bike is pink; pink is a colour associated with girls)
>
> A child using lots of glue to stick wood to paper (nails will rip paper; glue can join things together; heavy things need more glue than lighter things)
>
> A child insisting 'that's what I need but you got all of them and you can't' (if you have all of those parts then there are none left for me; things need to be fairly shared so that everyone who needs them can have them)

Working theories have several defining features. They are:

- **Provisional.** Working theories are constantly revised and evolving as children gain more experience and information, and as such are tentative and speculative – the child's best guess for now. Children's theories and understandings are gradually edited over time so that they contain better quality knowledge and skill, are better adapted for particular contexts and areas of experience, and are more elaborate, interconnected, applicable and useful for children's purposes.
- **Functional.** Children's theories are about making sense of phenomena by seeking patterns, explanations and meanings, making connections between experiences and events, determining causal relationships and generating arguments (which may be implicit). These theories support children's understanding and meaning-making, and guide their actions, problem-solving and ongoing learning.
- **Dependent on context or situated.** Working theories are stimulated by, constructed from, developed and revised within children's contexts, interactions and experiences. Working theories can accommodate many different kinds of knowledge from children's diverse home and cultural experience.
- **Created and owned by children.** Children create working theories in their own way and according to their own purposes and interests. A focus on working theories as knowledge outcomes for early childhood education emphasises and supports children's agency in relation to their own learning.

Although there is a lack of empirical evidence to support a focus on children's working theories as a pedagogical approach to developing knowledge, recent findings about the brain are congruent with such an approach. For example, neuroscience shows that the brain identifies patterns between past and present events and stimuli to create knowledge structures or schemas for encoding new information. This means learning always takes place in the context of previous understanding, in other words, in the context of previous working theories. Cognitive psychology also demonstrates that learning involved a gradual unfolding of understanding, in which there are revisions, corrections and expanded ideas. The concept of working theories aligns with these perspectives as a way in which children integrate new knowledge as part of the process of learning.

The limited research that has been undertaken on working theories in early childhood education in New Zealand suggests that:

- **Working theories engage children's meaning-making, knowledge-building or learning**, and that children have a natural propensity to understand their worlds and develop relationships and identities. Case study research undertaken here in New Zealand shows children creatively using intuitive everyday knowledge to reason, problem-solve and interpret new information in diverse contexts.
- **Working theories lead to academic concepts and coherent knowledge systems.** Children's working theories have been shown to involve combinations of knowledge including early academic learning, as well as dispositions, skills and strategies and ways of being and doing that are necessary for effective learning. It is also possible that working theories may help children to connect their everyday concepts with more formal scientific concepts. For example, children may generate working theories which explore early ideas about friction as they use different materials or wear different clothes while sliding down the slide.
- **Working theories mediate children's engagement with others and with learning environments and activities**. Children's working theories about social relationships and about being a learner are important here, as well as theories about social identities which may constrain some behaviours and enable others. For example, children hold working theories about areas of play that are not appropriate to them in relation to their particular gender or ethnicity.
- **Working theories involve sophisticated thinking skills and support cognitively challenging programmes for children.** In order to create a working theory, children must abstract and reflect upon the knowledge they have gained from practical experience, and connect, organise and structure different pieces of knowledge into a meaningful order.

A curriculum for working theories: what does that look like?

The world-renowned curricula of Reggio Emilia are based on an image of children as competent learners continually creating and testing theories on a variety of topics. Early childhood settings that place a focus on children's working theories develop curricula that are meaningful and relevant to young children's lives and grounded in children's inquiries about their worlds. Children are provided with many opportunities to participate with others in knowledge-building and theorising. There is an emphasis on questioning, observing, wondering, puzzling and creative thinking which result in children creating, developing and editing their working theories.

A curriculum for working theories might take an inquiry approach to learning and teaching. An inquiry approach addresses content in curriculum in ways that is creative and responsive to children's current

interests and learning needs, and enables children to improve their working theories over time and revise their knowledge as a result of ongoing experience and information-gathering.

Teachers require both subject content knowledge and knowledge of pedagogical strategies to support inquiry learning. A curriculum for working theories is not about rushing children towards accurate concepts and knowledge, but allowing conceptual development to be achieved over different time-frames and in indirect ways, allowing time for deepened conversations and reflection that draw out children's existing understandings, as well as varied experiences and interactions with multiple others. Teachers understand that progression may involve backward steps, spirals of learning, creativity, emotions and imagination rather than a logical sequence.

A curriculum for working theories:

- **Builds on teachers' strong relationships with, and knowledge and understanding of, children.** Teachers work to build pedagogical relationships with children in which they identify, decode and respond to children's attempts to create working theories and make sense of their world.
- **Fosters a culture of inquiry, as well as wonder and curiosity**, in teachers and children, and values children's theorising and emerging and personal understandings of the world, without comparing these to adult ways of understanding.
- **Focuses on valuing and making visible children's individual learning processes** and highlighting the conceptual knowledge embedded in children's play. Children are encouraged to reflect upon their working theories and to take responsibility for their learning journeys.
- **Draws on children's inquiries and interests**. Teachers engage deeply with children's interests as a basis for curricular decision-making, and use children's interests and inquiries to engage their emotions and heighten motivation.
- **Makes inquiry collaborative**, to extend across a wide learning community, including other children, teachers, and family members.
- **Challenges children's thinking**, seeking topics and ideas that are open-ended and uncertain and inviting children to grapple with ideas rather than be provided with them. Children are encouraged to wonder, ponder, digest, explore, experiment and play with ideas and theories, with emphasis placed on helping children become learners and thinkers rather than their acquisition of a particular body of knowledge.

What about dispositions? Are they still important?

Yes! Dispositions and working theories interrelate, and reinforce one another. Many important dispositions (such as question-asking and curiosity) are implicated and intertwined in working theory development. As children develop working theories about their world and the people, tools, objects, materials and animals within it, they are also learning about (and developing working theories on) important dispositions such as curiosity, perseverance, and taking responsibility.

Further Reading

Hargraves, V. (2013). What are working theories? And what should we do to support them? *Early Education*, *54*, 34-37.

Hedges, H. & Cooper, M. (2014). Engaging with holistic curriculum outcomes: Deconstructing 'working theories'. *International Journal of Early Years Education, 22*(4), 395-408.

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