

# Supporting children's thinking and cognition through the visual arts



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The arts offer children opportunities for complex and dynamic modes of thought and communication<sup>1</sup>. Literacy is a set of abilities for creating and communicating meaning through representational forms or different kinds of texts, and may be expressed visually as well as through speech and writing. Like verbal language, visual 'languages' such as drawing, collaging and sculpting help children to develop their thinking<sup>2</sup>. Children can use these visual languages to explore ideas and communicate their cognitive processes. In fact, the 'multiliteracies' or various languages that are afforded by the arts may support all children (especially those who have difficulty communicating verbally, or in English) to communicate and collaborate in making meaning, to express themselves, and to learn language skills<sup>3</sup>.

## How the visual arts contribute to thinking and cognitive development

From a cognitive perspective, children use the visual arts to interpret the world around them through a process of encoding their understandings in whatever materials they have to hand in order to reflect upon them<sup>4</sup>. Children might represent and think about relationships, how things work, their own identities in the present, and their future selves as they engage in the visual arts. When children make art, they integrate their memories, experience, observations and imagination<sup>5</sup>. They can also create at their own individual level of ability, and draw on their own individual strengths, abilities and aptitudes.

The fine motor skills that children develop through visual art experiences are also associated with cognitive achievement, and this may be because children who can perform fine motor skills automatically and efficiently can dedicate a greater level of attention and cognitive resources to more complex learning<sup>6</sup>. Many different kinds of art activities involve the hands and fingers, and help children to develop good fine motor control. For example, activities such as moulding clay and dough, peeling stickers, picking up small collage items, stringing beads, weaving, using hole punches and cutting with scissors all develop finger strength and dexterity.

The visual arts include a range of modes and modalities including drawing, printmaking, sculpting, creating ephemeral art (arrangements of materials), block structures, weaving, sewing and other textiles work. Each medium has both affordances and constraints which influence what children will think about, do and create with the medium. When children are offered a range of modalities or materials for expressing ideas, they can use the affordances of different mediums to engage knowledge they have received from a variety of sources and experiences. Different modes and media also direct children to different aspects of a topic and helps them to ask better and more diverse questions<sup>7</sup>. As children integrate these diverse interpretations, they develop more complex meanings. Children can be encouraged to reflect on how the use of a particular medium influences what is communicated.

It is a significant cognitive task to translate meanings from one sign system (such as verbal language) into another (a picture)<sup>8</sup>. Such tasks help children to think in divergent and metaphorical ways. When children attempt to use multiple languages to make meaning, their capacity for representational thinking and for mentally manipulating and organising ideas, images and feelings is increased, as well as their skills in using a range of expressive languages and using a range of media<sup>9</sup>. In addition, children often use a variety of modalities (or forms of communication) alongside one another to help them communicate and explore ideas, and teachers who are receptive to this encourage children to use

as many different sign systems as they need to communicate meaning. For example, children might provide a verbal narration and some expressive gestures alongside a drawing or block construction. A drawing might include images, written letters, numbers or words, symbols (such as flags) and may be accompanied by sound effects and gestures to enhance the meaning of the image<sup>10</sup>.

## Concept formation and development

To make the connections between ideas that promote more abstract and complex thinking, children need a sound understanding of the concepts they are investigating. Producing a visual form of their ideas can help children to distill and crystallise these concepts<sup>11</sup>. For example, discoveries can become clearer when children are drawing: a child trying to draw the shadow of an object may make new discoveries about shadows and how they are formed because he or she has to look closely at the shadow in order to be able to draw it. Similarly, as they attempt to represent particular concepts, children have to think about what components to draw or what might be the essence of a concept. For example, for a toddler, 'dog' might be represented by fur and movement, while an older child might try to draw four legs and a tail. Children can also deepen their understanding of a concept from a very specific representation to a more abstracted understanding: for example, drawing many different kinds of dog can help children to notice the key similarities and differences between breeds. The experience of trying to represent a concept moves children from a surface level understanding to a deeper understanding<sup>12</sup>. Understanding the core features of a concept then enables them to connect it to other ideas and concepts.

## Extending learning

Using the arts within a process of inquiry or exploration can encourage children to engage with an idea or topic for longer and to extend their thinking about it by becoming aware of different possibilities for representing it<sup>13</sup>. Drawing and other visual arts help children to process their ideas, questions and misconceptions, and to make their thinking and knowledge visible so that they can extend their ideas. When children draw, they draw their own cognitive understandings about themselves and their worlds rather than trying to create realistic images, and it is these cognitive understandings that teachers should seek to intentionally explore and deepen<sup>14</sup>. For example, to express ideas about birthdays, a child might draw themselves standing next to a table with a birthday cake on it. They might draw the table from above, so that the cake is clearly visible, but draw the candles on the cake front on, because it is more important to the child that they communicate their understandings about having a birthday than that they convey a realistic image. This means that, rather than looking at children's art for evidence of their developing artistic skills, teachers should view children's art as holistic representations of the experience and knowledge children have gained from their sociocultural context. Teachers can focus intentionally on helping children to more clearly represent, clarify or extend their ideas and plan experiences related to the ideas in which children are interested<sup>15</sup>.

## Enabling diverse thinking

Some researchers have found that children with English as a second language use the visual arts as mediating devices to help them communicate with others and express ideas<sup>16</sup>. The use of the visual arts can be particularly appropriate for neurodiverse learners and speakers of other languages as they provide the flexibility for children to draw on their particular strengths and skills, and to identify culturally relevant topics and areas of interest that engage them and in which they can be successful<sup>17</sup>.

## Working theories and dispositions

Key outcomes for children in the early childhood years relate to the development of [working theories](#) as a form of cognitive development and for building subject content knowledge, and the development of dispositions that support children in positive learning habits. The visual arts promote both these outcomes.

## Dispositional learning through the arts

The visual arts give children opportunities to develop important learning skills, such as observing carefully, engaging in problems that interest them, and persisting when they find something difficult<sup>18</sup>. They learn ways to communicate ideas and feelings, to collaborate with others and to interpret ideas communicated visually. They show initiative and intention, and are able to set goals for their artwork. They learn to reflect on their artwork and on their working processes, and to plan more complex and effective strategies and activities. The dispositions children may develop include engagement, persistence, envisioning and creating, humour, expression, and reflection. These dispositions can be relevant and desirable in other areas of learning<sup>19</sup>. It is important that visual art experiences are integrated into wider topics or projects related to children's interests and that incorporate a range of disciplines.

## Using the arts to construct and modify working theories

As children create and explore using different media to represent things and ideas, they draw upon and modify their existing working theories. Working theories can be modified and developed when teachers encourage children to represent and reflect upon their theories using the visual arts. It is also possible to use artworks to introduce children to the working theories of their peers, and encourage them to compare, clarify and even modify their ideas. For example, a working theory that mummies and daddies are bigger than their children, or that friends always hold hands, might guide their depiction of the important people in their life. Children can adapt their drawing and develop their working theories about how to draw people when they try to draw a person from a side profile, for example, and work out that this might mean only drawing one eye, one arm and one leg.

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## Recommended further reading

Brooks, M. (2004). Drawing: The social construction of knowledge. *Australian Journal of Early Childhood*, 29 (2), 42-49.

Brooks, M. (2009). What Vygotsky can teach us about young children drawing. *International Art in Early Childhood Research Journal*, 1(1).

## Endnotes

1 Plows, L. (2015). Three-year-old children's visual art experiences. *NZ Research in Early Childhood Education Journal*, 18, 37 - 51.

2. Brooks, M.L. (2017). Drawing to learn. In Narey, M. (Ed.), *Multimodal Perspectives of Language, Literacy, and Learning in Early Childhood. Educating the Young Child (Advances in Theory and Research, Implications for Practice)*, vol 12. Springer.

3. Richards, R. (2017). Young children's drawings and storytelling: Multimodal transformations that help to mediate complex sociocultural worlds. In Narey,

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  6. Rule, A.C., & Smith, L.L. (2018) Fine motor skills, executive function, and academic achievement. In Brewer H., & Renck Jalongo, M. (Eds), *Physical Activity and Health Promotion in the Early Years. Educating the Young Child (Advances in Theory and Research, Implications for Practice)*, vol 14. Springer, Cham.
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  8. Narey, 2017.
  9. Wright, S. (2007). Young children's meaning-making through drawing and 'telling': Analogies to filmic textual features. *Australasian Journal of Early Childhood*, 32(4), 37-48.
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  11. Brooks, 2017
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  13. Brooks, 2017.
  14. Narey, 2017.
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  16. Richards, 2017.
  17. Sheridan, K. M. (2017). Studio thinking in early childhood. In Narey, M. J. (Ed.) *Multimodal perspectives of language, literacy, and learning in early childhood: The creative and critical “art” of making meaning* (pp. 213-232). Springer.
  18. Plows, 2015; Sheridan, 2017.
  19. Sheridan, 2017.

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