

‘Theatre of the Imagination’: a blueprint for design and making in primary education

Abstract

‘Theatre of the Imagination’ aims to demonstrate that making artefacts provokes a transformative way of thinking about the world while fostering independent learning skills in children. Signature pedagogies from art and design education help to build a learning culture that embraces the concept of childhood as a time of ‘being and becoming’.

The prototype toolkit sets out to explore the potential of making as a way of thinking in primary education through a constructionist ontology to demonstrate how sharing three dimensional artefacts can help cultivate mutual respect. Transition design thinking is introduced to foster a socially and culturally inclusive vision for the future through the application of the toolkit. Children and their teachers are encouraged to create interventions aimed at incremental change in the way we live in collaboration with others who live locally and those who live on other continents. The UN global goals framework is used to set up ‘situations’ worthy of debate at a time of social and environmental disruption.

Insights emerging from ‘Theatre of the Imagination’ suggest new ways of exploiting the value of design and making in mainstream primary education at a time of impecunity.

‘Making as thinking’ provokes reflection and helps children and teachers to visualise ideas about how we may protect non-human and human life on earth.

Keywords and phrases: primary education; constructionism; transformation, mutual respect

Introduction

Insights gathered from teachers and creative practitioners who participated in ‘Theatre of the Imagination’ indicates that government-funded research (Education Endowment Fund, 2015) undervalued creative skills to the detriment of children in mainstream education. Funding has been directed away from learning through the arts as a result of the EEF research findings. While the research stresses the value of developing metacognitive skills it fails to recognise that this can be achieved very effectively, for a diverse range of children, through making artefacts. Winner et al. (OECD, 2013) concluded:

We did not find support for the kinds of claims that we typically hear made about the arts – that infusing the arts in our schools improves academic performance in the form

of higher verbal and mathematical test scores...and makes children more innovative thinkers. It is here that we have to conclude: not yet proven!

Mainstream primary education has been under duress as a result of incremental funding cuts, in real terms, over the past decade (Adams, 2019). The imposition of a curriculum, which government advisors and teachers' unions agree was flawed, has had a detrimental impact upon schools and teachers. Government advisor, Richard Hudson, emeritus professor of linguistics at University College London, admitted that the process was "chaotic":

We started off with the primary curriculum, which we were a bit unconfident about as none of us had much experience of primary education and were looking forward to getting stuck into the real thing – secondary.

(Mansell, 2017, The Guardian)

Ken Baynes and Eddie Norman (2013, p.11) despaired at the nature of the government's proposal for the National Curriculum for Design and Technology in 2013-14:

It is not simply that (the government) team have ignored leading figures in the design, engineering and media industries, employers, organisations and specialist teachers' associations: it is also that they have completely failed to recognise the value of Britain's contribution to design education ... [we] encourage young people to use their imaginations, consider the needs of others and look to the future.

Phil Roberts (Baynes and Norman, 2013, pp. 13-19) outlined the characteristics of design in general education, and some of his ideas are woven into the structure and content of the 'Theatre of the Imagination' workshops, such as designing as a medium of cognitive modelling and of acting on and in the world. Roberts believes that design education has the capacity to enhance the capability, knowledge and understanding of the learner who is thereby empowered to bring about desirable change in some aspect of the world. According to Roberts (2013), people who develop design skills such as making images and models of a world seen 'in the mind's eye' have the capacity for engaging in cognitive modelling. He explains that the activities related to 'designing as learning' can be referred to as the design dimension of the school's entire curriculum. 'Theatre of the Imagination' sets out to establish how nurturing such agency can foster metacognition and enable cultural diversity to flourish, across geographic space (**Figure 1**).

The question, according to Roberts, is not whether it is possible for this way of thinking and doing to be introduced into primary education but whether sufficient funding, know-how and

There are three major challenges for education today: 1) To become lifelong, beginning in the first year of life and extending to old age; 2) To go beyond curricula (subject matter) in the usual sense and to focus sharply on character (the kinds of human beings we want to nurture); 3) To prepare for a world where the landscape of work is likely to be totally different and changing constantly.

Ethical position

This series of primary school workshops have provided case study examples to illustrate how learning through making promotes dialogic discussion concerning caring and respecting non-human and human life on earth. In this paper, I have selected the West Dean Primary School workshops to illustrate the potential of 'Theatre of the Imagination' in developing metacognitive skills and respect for all living things.

The code of ethics is based upon work undertaken by the United Nations International Emergency Children's Fund (UNICEF). Respect for the dignity, well-being and rights of all children, irrespective of context, is the central tenet of 'Theatre of the Imagination'. Such respect is integral to decisions and actions concerning the nature and conditions of children's involvement. With permission, photographs are unobscured to help illustrate childhood as 'a time of being and becoming' (Uprichard, 2008).

UN Global Goal 15: Life on Land workshop

Frayling (2015) explains why he prefers the term 'research through design':

...as I see it, this is about taking design as a particular way of thinking, and as a particular approach to knowledge, which helps you to understand certain things that exist outside design...that for me is 'research-through-design...'

'Theatre of the Imagination' fosters knowledge as social construction while nurturing mutual respect in order to encourage debate, create dissonance and thereby drive cognition in children and their teachers. It is not concerned with universal truth but with interpretivism and a rich understanding of the social and cultural context in which we live and work. The purpose of the constructionist approach in the workshops is to find out how craft practice can help children to express innovative ideas through making, storytelling and video animation. Papert (1991) holds that learning can happen most effectively when people are active in making tangible objects in the real world.

My research into making as thinking extends over a period of twenty five years and includes primary schools and researchers in Mexico, India and the UK. This has helped me to reflect upon what living a worthwhile life might mean for children across continents and cultures. In 2017, teachers and governors at West Dean Primary School, a rural school with 100 pupils, helped to deliver two ‘Theatre of the Imagination’ workshops. We transformed a garden pavilion into a design studio to provide a space for drawing, modelmaking, video animation, and critical discussion.

The key characteristics of the ‘pavilion studio’ at West Dean were physical, organisational, and attitudinal (Shuman, 2005, p.54). There was no front to the classroom, the learning approach supported experimentation through making, collaboration with peers, practicing skills, taking part in debate, instruction and critique. Children engaged in learning through doing, thinking and second-time thinking, making ideas visible, sharing materials and tools, rehearsing ideas, and performing stories. The constructionist learning process (**Figure 2**) helped participants to reflect upon pressing issues related to UN global goals, signed up to by 193 member states in 2015, which are regularly contested. ‘Theatre of the Imagination’ promotes the idea of social construction and sets out to be transformative in the belief is that the future is something we are making together. The creative workshops are designed to encourage debate and reflect upon the diverse opinions of participants.

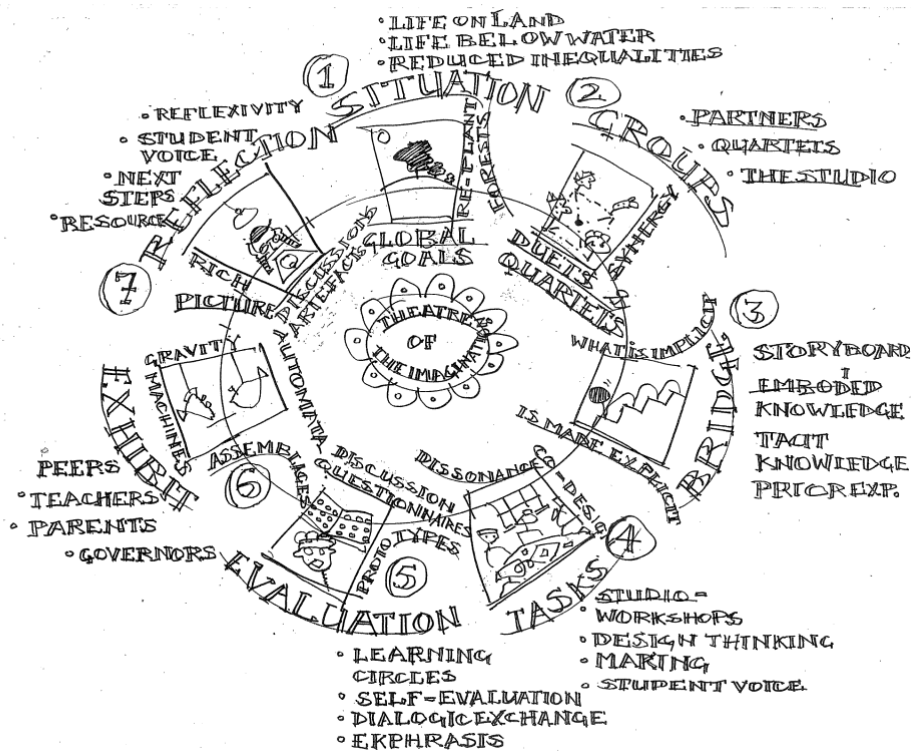


Figure 2: The Constructionist Process (adapted from Papert, 1991)

Situation

United Nations Goal 15, ‘Life on Land’, provided the ‘situation’ for stage one of the workshops where students were encouraged to consider how they might care for their most valued landscapes. At the beginning of each of the two workshops, twelve KS2 children aged between 7 and 11, were invited to complete a short self-evaluation questionnaire, designed to raise awareness of the aims of the project.

Researchers, teachers, and children generated discussion about the UK government’s Forestry Commission’s announcement that it had missed its ‘trees in the ground’ target by 86% (Vidal, 2016). The worst year in a generation signalled a growing disconnect between rhetoric and action. Learning that planting and protecting trees was a local problem created surprise in children who had previously believed this to be a problem “somewhere else in the world” (**Figure 3**). In the first workshop Tom asked, “How do you get people to change their behaviour when they already know what they’re doing is wrong?”



Figure 3: Cabinet of curiosities: Life on Land (Copyright: Pulley, 2018)

Groups

Children worked in the ‘pavilion studio’ on three tables of four. The groups pooled skills, shared knowledge and explored problems related to ‘Life on Land’. Working as a design team, participants were encouraged to think abductively (Chow and Jonas, 2010) about how they might help protect personal places of wonder.

Direct access to the garden from the ‘pavilion studio’ impacted upon the ‘ways of being’ of participants, who felt the atmosphere was “...very different to a normal classroom.” Working with Robin, an experienced KS2 teacher, enabled us to take risks and collect insights in the knowledge that unexpected events would be managed effectively. The concept of ‘classroom as studio’ emphasised the importance of synergistic exchanges and encouraged ‘scaffolded learning’ (Vygotsky, 1986). The studio space became the physical manifestation of ‘a zone of proximal development’ in which children guided and encouraged partners, and as a result, became instrumental in fostering ‘pupil voice’. Reflecting on the patterns of relationships in the studio echoed Wood’s (2013, TEDx Oslo) observation that four human beings, or a quartet, give six times the ‘synergistic abundance’ of a duet.

Bridge

Once resources had been handed out as ‘Bags of Stuff’, children selected characters from a set of persona cards (**Figure 4**) to consider how, by ‘walking in the shoes of others’, they could help look after ‘personal spaces’ considered to be of natural beauty. This prompted discussions around the work of artists introduced through small group seminars. Artefacts made by Alexander Calder (Calder Foundation, 2017), and Michael Brennand-Wood (2017) provided rich examples of image making, model-making and storytelling.

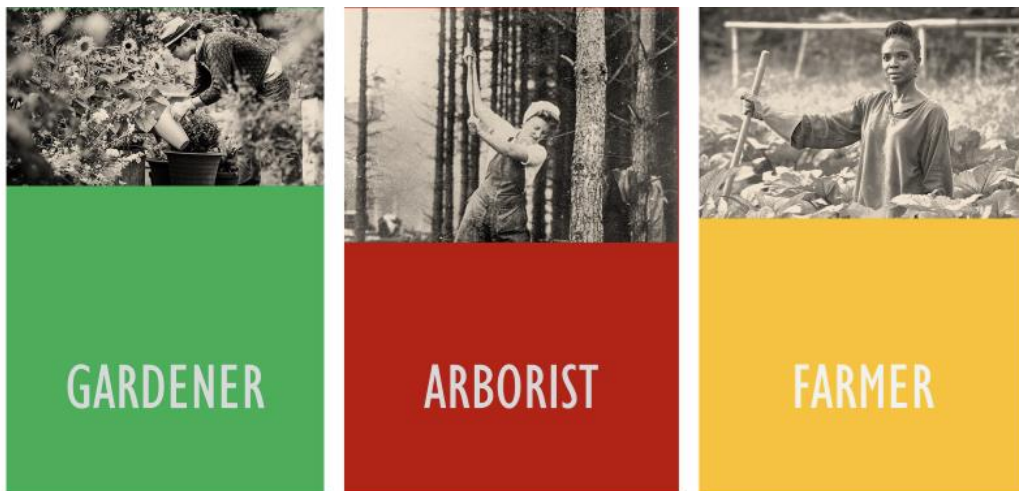


Figure 4: Examples of persona cards (Pulley©, 2017)

Chow and Jonas explain how ‘case transfer’ helps to generate abductive thinking and to connect our tacit knowledge with moments of new insight. The design and making workshops initiated ‘good discussion’ (Reason and Bradbury, 2011) and encouraged innovative thinking concerning aspects of environmental science, literacy, and numeracy.

Participants collected ephemera from the garden to use in printmaking and assemblages. A basic kit of tools and materials afforded every child new experiences at ‘zero cost’ to the school. Noah shared the thought that; “...the waves in this leaf remind me of sand dunes at East Head...and that’s my mum’s favourite place. How can we protect that?” Noah’s question was discussed across the studio prior to the production of video animations using handmade puppets in ‘Talking Pegs’ (**Figures 5**).

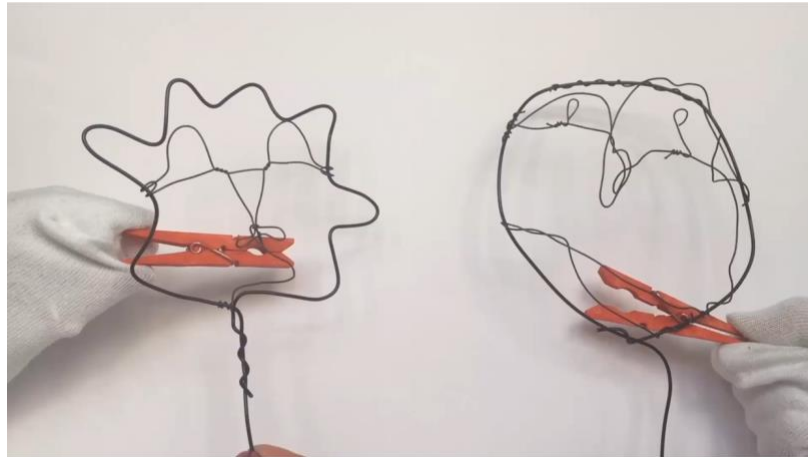


Figure 5: ‘Talking Pegs’ (Pulley©, 2017)

Tasks

Workshop activities included ‘drawing without looking down’ and ‘drawing without taking your pen off the paper’. These simple exercises helped change the attitude of participants to the activity of drawing. According to governor Sharon-Michi, children were gripped when line drawings on paper were transformed into three dimensional wire drawings (**Figure 6**).

Class teacher Robin explained that the condensed nature of the primary curriculum allowed very little time for reworking ideas yet felt redrawing and remaking encouraged children to reflect. He explained that ‘draw and draw again’ became ‘think and think again’ - “...using three different techniques that everyone could try, without risk of failure, made the exercise great fun. I can introduce this as a whole class exercise.”



Figure 6: A wire drawing used in video animations (Photograph: Kusunoki©, 2017)

Participants produced drawings that were, according to Emma, “a big mess”, a sentiment echoed by others and felt by some to be surprising. Drawing from the imagination created a degree of dissonance at the beginning of the activity. Once children understood that all outcomes were considered valuable and no drawing was considered to be a bad drawing, they began to take risks which led Isaac to declare, “drawing helps me think...”

Making components, connecting materials and making assemblages required collaboration, repetition, experimentation, and the development of haptic skills. Children transformed line drawings on paper into three-dimensional wire portraits which they used as puppets to relate impromptu stories, to strike up a dialogue with peers, and to debate ideas.

Monoprints made from leaves collected in the garden highlighted the value of ephemeral materials as designer-maker Maria explained:

It was a joy to witness the expressions of children as they experienced the ‘transformation’ of leaves collected from just outside the studio door into monoprints on paper. Participants gained the confidence to take ‘creative risks’ and I learned when and how to respond to their breakthrough moments.

Printmaking ran in parallel with drawing with wire as children co-constructed ‘assemblages’. Teachers from other classes, and from schools in South Korea and from India, felt these assemblages could be developed easily into ‘whole class lessons’ (**Figure 7**).



Figure 7: Making assemblages using found objects (Photographs: Kusunoki©, 2017).

Evaluation and the exhibition

West Dean head teacher Gill suggested that, “‘Theatre of the Imagination’ provides us with a

perfect way to explore Personal, Social, Health and Economics (PSHE) and Citizenship studies within the mainstream curriculum.” Robin felt the creative toolkit helped to foster independent thinking and provided an antidote to the highly regulated context in which curriculum emphasis is placed upon preparation for tests.

The work was collated as a small exhibition in the assembly hall at West Dean. Designer-maker Maria felt the ‘pavilion as design studio’ was well resourced at very low cost. She explained that collecting ephemeral and found materials made things much easier, “...using stuff we found in the garden and in the bin worked a treat.” Robin reminded us that when children were informed the workshop was about working as a design team while exploring ideas together in the studio - “...we ‘tricked’ them into thinking differently.”

Governor Sharon-Michi noted that the three groups of tables, each with four participants working together and in duets worked well:

The children were organised in different ways – some as friendship groups and others based on different skills. Children helped partners and everyone appeared keen to make a contribution. The idea of being part of a design studio certainly helped ‘fire imaginations’ - such as Sydney’s with his love of elephants...

Teachers in Residence from South Korea, Kuk Kuang and Ko Tae, explained:

When the children were asked to collect leaves they did not understand why; they thought the task was to collect the best leaves. Later on, when they were printmaking, they realised why and this helped them think more about materials.

Class teacher Robin felt:

The drawing exercises flowed really well. The fact that there were three different exercises was great, with one completely out the ordinary (drawing without looking down at the paper). This was a revelation for the children and for me. The exercises gave them confidence to try new stuff – it was their piece of work and it didn’t have to be a ‘perfect’ drawing...If I had asked them to draw a portrait, then draw it again and then draw it again they would have switched off...they were asked to do the same thing in different ways (and this) encouraged continuous engagement. If I had explained to them that they had done the same drawing three times they would have been surprised (**Figure 8**).



Figure 8: Three drawing exercises (Pulley©, 2017)

Sharon-Michi, governor and art historian, commented:

Drawing ‘without taking your pen off the paper’ led children to think about drawing with wire. It helped everyone to understand that wire is a line which made the connection between drawing and 3D work very clear. In a normal class lesson, there is an emphasis on doing things ‘perfectly’ and so children are always comparing their efforts to the person sitting next to them which, as we all know, can be demoralising. You emphasised that there is no such thing as ‘a perfect drawing’ and pointed out intriguing details in everyone’s work. This changed our way of thinking.

Designer and ex-teacher Maria reflected on the nature of collaboration between partners:

Normally, when a child thinks something is done, or completes an exercise, she doesn’t usually think about the work of others, or about trying to help, unless asked. In the printmaking activity, all the children seemed to be equally invested in what their partner was doing. They listened carefully to instruction and tried different techniques because they had the opportunity to experiment. Not many wanted to get the job done quickly. Their interest in the structure of the leaf and the different shapes of the leaves increased as they made more prints. Tactile skills and technical ability evolved during these sessions (**Figure 9**).



Figure 9: Printmaking with leaves from the garden (Photographs: Kusunoki©, 2017)

When children from other classes visited the exhibition, participants were able to explain their journey, "...including those children who are less confident at explaining things..." according to head teacher Gill. The majority of those involved in 'Theatre of the Imagination' wanted to talk about the workshop at the exhibition and class teacher Robin noted:

If we had said, right children, you are a gardener for the day, or a teacher, earlier...some got it and came up with good ideas and some found it more difficult. If we made it clear that the exercise was about character, plot and location then...yes. Getting them to think about a place they know and like is a great idea...it needs to be introduced earlier. We could begin with the persona cards next time.

Gathering things said and made helped in the construction of 'a mosaic' of assemblages and puppets for discussion at the exhibition. The collection of artefacts helped to provoke ideas based upon prior knowledge:

Kate: "My favourite place is the apple tree in my garden because every autumn I climb it and pick the apples."

Sydney: "How do you look after it?"

Kate: "My dad cuts some branches off in the autumn ready for next year."

Sydney: “My favourite place is Thailand because it is beautiful. I like elephants and I would like to make sure there are plants for elephants to eat. I want them to be healthy.”

Kate: “Does that mean stop cutting trees down?”

Participants discussed ‘Life on Land’ with peers, parents and teachers, demonstrating confident and detailed recall. One of our tasks was to elicit meaningful interpretations about the stories they visualised and shared. Many observations by participants reflected the Sairanen and Kumpulainen (2014) suggestion that visual narrative inquiry sets out to integrate a child’s reconstructed past, perceived present, and imagined future. Proximity to the participants at West Dean enabled me to produce a reflective practice journal of evidence and to build a local understanding of the experiences of teachers and children. Reflections with participants took place ‘in the moment’ and at the informal exhibition:

Ashton: “My drawing without looking down was ‘atrocious’ but drawing without taking the pen off the paper helped me with the wire drawings. I could see how to make the eyes and mouth with one piece of thinner wire.”

Kate: “The drawing without looking at the paper was a big mess. All the exercises were fun, and it made me think my work is...well, mine.”

Me: “How did you make the drawing without looking at the paper?”

Kate: (Thinking for about 5 seconds) “Ummm ... [eyes lit up] I have no idea how I did that ...” [laughing]

Indie: “It was in my mind’s eye ...” [forefinger touching forehead]

Stephen: “The Pavilion is great – the rules are different and that makes you think ... cool, designers are lucky if they get to work like this all day. Coming up with ideas isn’t work really is it?”

Victoria: “Working with Santi meant we could help each other and have fun. I don’t think school can always be like this can it?”

Santi: “Making wire models, and then doing it again, makes you think about what you want to do. It was hard because I can’t draw... well now I can a bit.”

Making video animations using wire figures as puppets fostered high levels of engagement. The contested UN global goals agenda, coupled with playful improvisation, provided an open

platform to discuss serious subjects with no emphasis upon searching for a single answer. Participants were given licence to explore ideas with peers and teachers. Kuk Kuang and Ko Tae cited an example of how one pupil insisted that he could not tell stories at the beginning of the workshop. At the end, Kuk Kuang explained, he insisted, “This is my story ... I told this story.” In another workshop there was a similarly compelling example of how making ideas visible generates engagement (**Figure 10**):

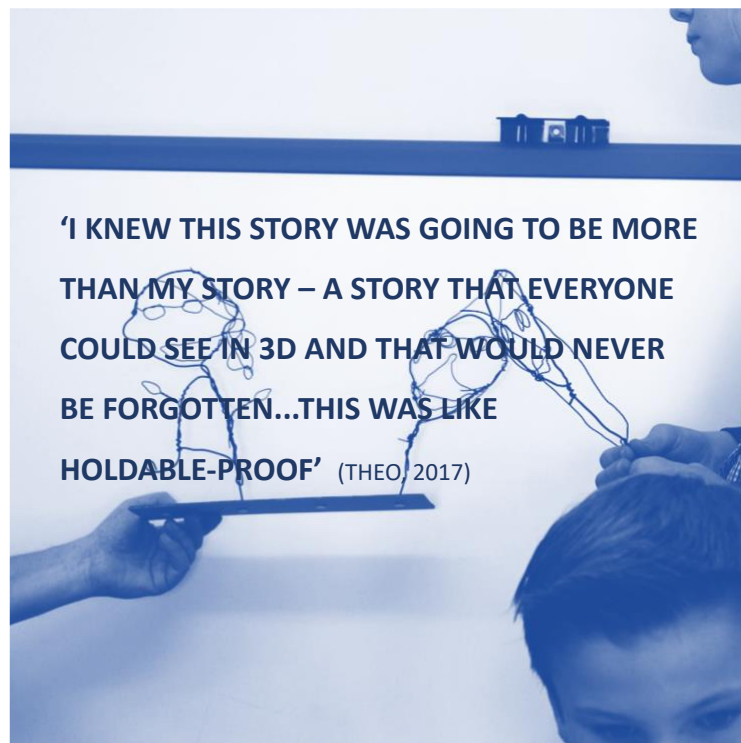


Figure 10: Making thinking visible (Pulley©, 2017)

Entangled epistemology and ontology

Barad (2010) calls for an ethico-onto-epistem-ological position to address the most pressing environmental needs of our time. In ‘Theatre of the Imagination’, research is undertaken through practice and favours a transformative epistemology to promote human rights and social justice through ‘symmetrical reciprocity’ between children and their teachers (Guba and Lincoln, 2005). In supporting multiple, socially constructed realities it is also important to recognise the consequences of the hegemonic privileging of versions of reality. In an attempt to resolve this dichotomy, children are encouraged to express unique stories through assemblages, prototypes and puppets by local teachers and makers. The difficulty in taking a relativist position when engaging with a given axiological construct, such as the UN global goals, is recognised by Proctor (1998):

Ultimately, pragmatists and critical realists alike admit that all knowledges are partial and a certain degree of relativism is thus unavoidable; yet they both, in a sort of tense complementarity, point to ways that geographers and others whose business and concern it is to represent nature can indeed have something to say.

Among the many known effects of inequality and an unequal access to education are social unrest, a decrease in health, increased violence, and decreased solidarity (Kohler et al., 2017). Haraway (2016) believes that we urgently require contemporary, cross-generational stories, told by people without power, full of complex ecosystems - humans and companion species working together. She suggests (2016):

The task is to make kin in lines of inventive connection as a practice of learning to live and die well with each other in a 'thick present'. Our task is... to stir up a potent response to devastating events, as well as to settle troubled waters and rebuild quiet places...nothing makes itself; nothing is really autopoietic or self-organizing...just because we aren't turtles doesn't mean we don't need to worry about plastic filling the oceans...

Metacognition is a thinking activity closely related to constructionism because, in demonstrating understanding, a student has to think and monitor her own thinking. Metacognition is about self-reflection, self-responsibility and initiative, as well as goal setting and time management. It consists of two basic processes occurring simultaneously: monitoring your progress and making changes to your strategies if you perceive it necessary (Winn, W. & Snyder, D., 1998).

Teachers as transition designers

Teachers, makers, researchers and governors agreed that it is tricky to foster a culture of independent thinking, compassion and reflection in the highly regulated context of primary education. A positivist approach to education does not set out to develop reflective thinking or help children to consider what constitutes a worthwhile future life. The 'studio' environment, transferred from art and design education, can be messy and uncertain, and values 'stick' in ways that are difficult to see (Orr and Shreeve, 2019). Learning through the studio is embodied and enacted, which, in the case of 'Theatre of the Imagination', means fostering the 'student voice' through making and storytelling.

Participants who took part in 'Theatre of the Imagination' felt that the role of evaluation in mainstream primary education might benefit children if, at times, it was decoupled from

summative assessment to offer a learning culture free from metrics-based testing. The national tests are not compulsory in independent schools and this offers teachers, including those transferring from the mainstream system, greater freedom to work as knowledgeable practitioners (Lock, 2018). Teachers and children who remain in the mainstream sector deserve our support to change this unequal state of affairs.

To change primary education at a time when resources have been reduced in real terms for more than a decade requires imagination and planning. An adaptation of ‘The Winterhouse Social Pathways Matrix’ (Irwin et al., 2013) illustrates how transition design may help primary education to connect our children and teachers across geographic space through art, design and making (Figure 11).

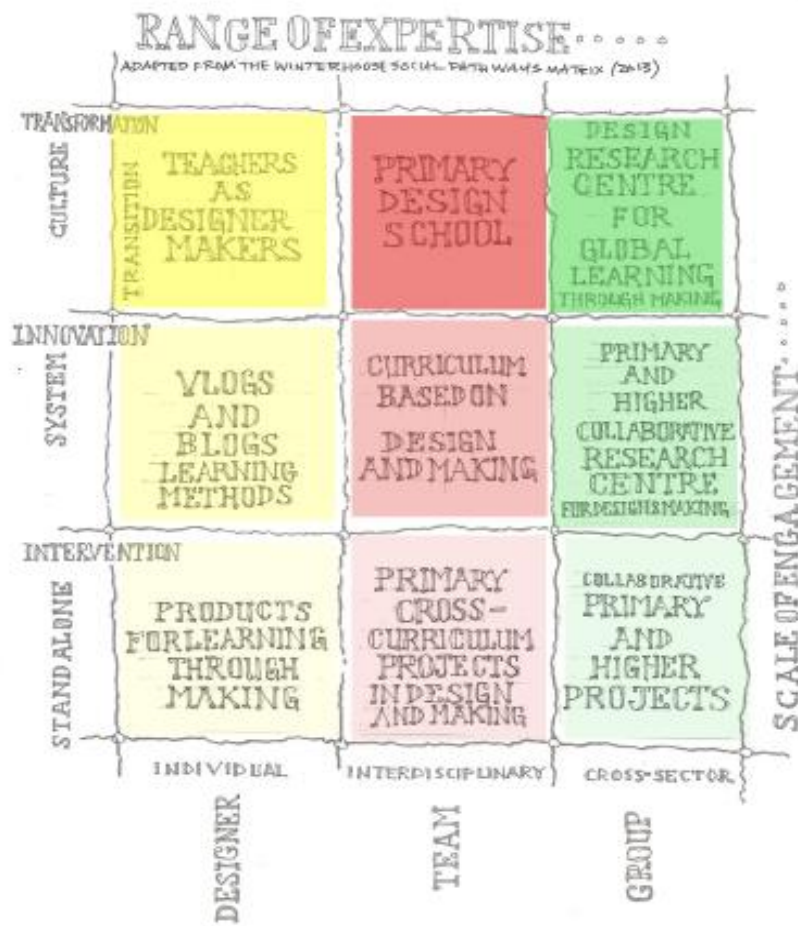


Figure 11: Transforming primary education (Pulley©, 2017)

‘Making as thinking’ fosters Gardener’s belief that learning must become lifelong and go beyond subject matter to focus on the kinds of life we want to nurture. Haraway predicts the need for lines of inventive connection; and Frayling suggests that research through design can

help us to understand things that exist outside design. 'Theatre of the Imagination' sets out to provide a transdisciplinary blueprint for mainstream primary education in this context.