



Windows into Children's Thinking

BIALIK COLLEGE, EARLY LEARNING CENTRE JOURNAL 2018

Bialik. *Be your best.*



From the Principal of Bialik

“Transformation”, wrote Jillian Michaels, “isn’t a future event. It is a present day activity.”

Whilst there can be no better place to witness transformation than a thriving school – after all, where else do we see the growth of young minds and mindsets, and the explosion of colours that is their creativity – having Transformation as our theme for the 2018 has been a wonderful challenge for all members of our community.

One of our challenges has been to ensure that transformation is not simply part of the organic development of the young people who we have the privilege of educating and learning alongside, but a conscious endeavour, a daily opportunity and an ongoing part of our planning, documentation and encounters.

In documentation we have been keen to transform our practice and be inspired by Dr David Perkins, who was a lead investigator in the Cultures of Thinking collaboration between Bialik College and the University of Harvard’s Project Zero. Dr Perkins encouraged us not simply to ‘tame the wild’ but more importantly in an educational setting to ‘wild the tame’. Through this exhortation, we try to find wonder in the ordinary, and we seek to re-explore the explored.

At our annual Windows into Children’s Thinking exhibition, and in this journal, the wilding of the tame is seen in our documentation, through the use of so many media and mediums. It is seen in the wonder of our children’s words, art, investigations and journeys. It is seen in the exciting professional development that our educators are engaging with in order to extend their practice and ensure that the very latest and best of the educational world is to be found within our walls.

When Loris Malaguzzi referred to the Hundred Languages of Children, it was this variety, change, research and wondering that he was considering and that we seek to ensure is the thread of our learning. He ended his poem with a challenge which we feel we have risen to:

“They tell the child that the hundred is not there. The child says: No way. The hundred is there.”

And here, in this journal of transformative learning, there Hundred Languages is here at Bialik College’s Early Learning Centre too.



Jeremy Stowe-Lindner
Principal

From the Head of the Early Learning Centre

This year the big question of ‘Transformation’ underpins our investigations in the ELC. While the understanding is ‘transformation’ this can and does look different in every classroom in the school. Teaching is not simply a matter of transmitting knowledge from one to another, rather teaching and learning are the transformations brought about through unique and living relationships. Presenting big ideas to children can be the spark that challenges children to reach out from their own understandings to make connections with the understandings of others. This helps them to see and hear and respect multiple perspectives and that there is not only one way.

The choice of topic was chosen for its endless possibilities and not one outcome. We hoped that each investigation would be authentic, a source of deep learning and offer opportunities for children to engage in joyful ways.

It began with the teachers’ exploration of what transformation means to them. Thoughts, wonderings and ideas were written down. This documentation had a place of visual importance in the ELC where teachers could revisit ideas, either on their own or in collaborative groups.

Our professional learning and planning allows a complex and interactive process in which teacher reflection and collaboration is viewed with the utmost importance. In fact, the process is parallel to the way that we see our children learning. Our seminar meetings, held weekly, give opportunity for teachers to share their documentation with others and to reflect, question and learn from the different perspectives of the other teachers in the group. This documentation is the foundation for the planning and reflecting that occurs in these meetings.

The question of ‘what surprised you’ when discussing the investigations helped keep the attitude of research, curiosity and wonder when we discovered something we were not expecting.

The investigations taking place in each classroom with the umbrella focus of ‘transformation’ were seen through different lenses; the sciences, mathematics, language and literacy, geography, transformation through the ‘creation of the world’ in Jewish Studies and more.

The investigations in this journal have taken place during 2018. Each investigation is documented through the recording of discussions and reflections by the children and their teachers, and through photographs and other languages. **“How complex are children’s ways of building knowledge, therefore how complex are the ways of capturing it.”** (Reggio Emilia)

The documentation allows for reflection and revisiting by the teachers and the children who were part of the investigation or by another group of children or teachers. It will reflect the many languages the children use as they describe their theories and make sense of their world such as the written, spoken and expressive languages.



Daphne Gaddie

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The conventions in this book

A number of styles have been used throughout Bialik College Early Learning Centre Journal 2018 – 'Windows into Children's Thinking' to designate different voices.

Serif Italicised Font

Indicates the voice of a child

Serif Bolded Font

Indicates the voice of an adult



[To access digital content of exhibitions](#)



3 Year Old Kinder

*I like us when
we sit together*



Fig. 1

“

Our year began with a new three year old group. As a team of educators, we had discussed how we would consider the word ‘transformation’, our umbrella topic, and the different possibilities it could create for this exploration.”

It became apparent from very early on that these children were strong communicators who used language to interact and share with each other. They enjoyed sitting on the mat together and sharing about themselves, their interests and their families. The children would listen patiently whilst each child would have a turn to speak about something that was important to them. They sat together for quite long periods of time and showed persistence, tolerance and empathy for each other.

We had also observed that the children had a common interest in looking at the lifecycles of plants and animals and how transformations occurred. Initially this was through conversations about what they had observed in books and specific puzzles that we had provided. For example, caterpillars turning into butterflies and tadpoles turning into frogs.

They also viewed images and film clips on our interactive whiteboard of flowers blooming, dying and turning into seeds; the metamorphosis of bees; the life cycle of the Monarch butterfly; and zucchini flowers turning into zucchinis, to name a few. To extend this research into real life learning, we took the children to our schools kitchen garden so they could see real plant transformations such as they had observed on the screen.

Whilst working with the children, we researched extensively and read widely as to how the children might transform as a group of learners.

Giamminuti writes in her book *Dancing with Reggio Emilia*; **“The extent to which alignment around empathy, shared principles, joint tastes and mutual preferences occurs in the context of one’s relationship to others in an environment, is the essence of communities of learners.”**¹

To encourage the building of relationships between the children and educators, we placed the children in small groups and asked them to share about their families through family photos. These photos were brought to Kinder by the children when they came for their initial interviews so that we could use them to encourage conversation:

Who is in your family and what are their names?

What do you like to do with your family?

Tell us about the photo? (location, a special event, special reason why it was taken)

Some families have a mum and dad, but some families have a mum and mum.

When you have a photo for a wedding you wear special clothes.



Fig. 2

If it's your birthday your mum and dad take a photo of you.

When I am four, there will be four people in my family.

Daddy is the adult and mummy is the adult, and we are just children.

However, beyond the small group sharing that all the children were involved in, the children used their photos during the day to initiate conversations and to become more familiar with each other. This demonstrated a strong need for the children to interact and showed their enjoyment of being with each other. (Fig. 1)

Whilst these children had strong relationships with each other, they did not see themselves as part of a kinder group. They were happy to share their individual stories rather than see themselves as a collective. We considered how we could create opportunities for them to transform from a group of individuals into a learning community whilst using their strengths and interests to facilitate this.

We felt that the children's theories about growth, lifecycles and transformation could be developed further by observing a chick hatching program.

Lots of animals come out of eggs...chickens, crocodiles, eagles.

If the egg is small then the thing inside has to be small.

The shape of an egg is the shape of a chicken.

As the chicks grew stronger, we would take them out and facilitate learning experiences with the children to observe and better understand the chicks' behaviour. Our intention was to use the chickens as a metaphor for how we could create a community in our classroom. (Fig. 2)

In the article, **Who are the teachers? Who are the learners?** Terri Turner and Mara Mrechevsky pose some questions;

“When does a group become a learning group? And what can teachers do to support the creation of such groups? Providing opportunities for wondering together, sharing and comparing, and building collective knowledge. In this era of globalization, the ability of individuals to learn and function as part of a group is perhaps the single most essential learning capacity we will need to survive.”²

We hoped that if we provided opportunities for the children to wonder together, both in large and small groups; if we named and explained what sort of wonderings were occurring; and if we explained what we wanted the children to notice about being a group when observing the chickens then they would understand what being a group meant.

They are happy standing together because they are with their brothers and sisters



Fig. 3

They stand together because they are a family

They like being together and doing things together

The children seemed to focus on the word 'together' as being part of a group. Using these conversations as a springboard for discussion we asked the children;

How could we be together and be a group?

You need to draw a big circle.

We can draw people on the paper.

The people are us! The children in our class.

The children need to go in the circle like when we sit on the mat together.

You have to draw the teachers also because they are part of the group.

There are four. Elise...Miri...Julia and Chris.

Working in small groups, the children drew themselves and placed their figures in the circle. Four children volunteered to draw the teachers and then placed them among the children. Whilst the children were drawing they shared what being part of a group meant to them;

I like us when we sit together.

I like being together and doing things together.

When your friend is sick, you miss them. (Fig. 3)

The children explored what it meant to be part of a group with their own stories using their class photos and family photos. They also reflected on a grandparents' morning held at Kinder and into which group the grandparents fitted.

After many conversations, the children discovered and understood that they belonged to a class group, a family group and a Bialik community.

When you put the photos in a line it becomes a group

We have our own photos in kinder and we are also in our family photos.

That's two...kinder and family

We go to Bialik kinder and so do our mums and dads. We are a Bialik group!

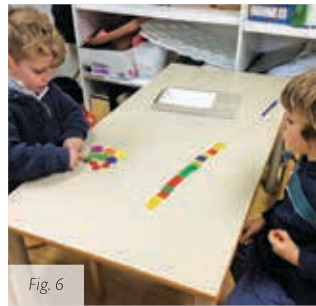
The grandparents have their own group because they came on grandparents' day. (Fig. 4)

The children were trying to explain what they thought made them a group. Some children saw this as the relationships that the children had with each other; *we are like family*, whilst others saw it as the interactions they had with each other; *I like playing together*. These values of togetherness, supporting and caring for each other supported our theories.

When the children discussed how they saw their parents as a group they were described as having rules and telling the children



Fig. 4



how to behave. For example, *you don't fight with each other* and, *you need to share toys*.

As the children were focused on seeing the parents as making rules, we had to transform our thinking in another way so that the children could move on. This required courage as we had to change our ways of thinking and questioning to facilitate the conversation in a more positive and meaningful way.

We reflected on some of the practices or thinking strategies that were considered at a recent Bialik Cultures of Thinking Conference.

At this conference, Ron Ritchhart asked us to consider the question, **What does it feel like to be a learner in this classroom?**³ He talked about the cultural forces and shared ten different statements a teacher could use to assess the children's learning. He asked us to consider the teacher's expectations of students, about students being ready to learn, and about children feeling a sense of purpose.

Two statements that provoked our thinking were;

Here is where we are going with this (where the teacher explains connections to yesterday and the future so that the children feel a sense of purpose)

Wow! (Opportunities for children to surprise you)

These two points made us reflect on the project so far and tell the children what it was that we wanted to achieve, and at the same time to give the children opportunities to surprise us with their responses.

The wonderful thing that came out of these statements was that we recognised the children's interest and strengths in number, sequencing and time and used those opportunities to add more meaning and depth to the investigation, and to move in another direction. (Fig. 5)

We decided to use these interests as a springboard for looking at how groups form in a different way.

On what basis would the children think that inanimate objects were a group?

What attributes or characteristics would they group them by?

Would the children see relationships between the objects as they had seen between themselves?

Would the same values of togetherness and caring for each other be present in the children's conversations about creating a group of inanimate objects?

We presented a collection of different coloured shapes to the children; What is a group and what do you know about a group?

Could any of these shapes be a group?

Some things in the group have to be the same.

When you put things together it is a group.

You can have lots of triangles.

They can be the same colour, like all the red ones here.

I have a group of numbers. The shapes all have numbers on them.

I have a group of red squares.

I have a group of animals.

Some children recognised that a group could have one or more attributes;

I have 4 groups. They are all made of metal, and then there is a group of locks, a group of keys and shapes.

I have a group of brown circles. They are all brown and they are all a circle shape.

I have a group of shapes of different sizes. Some are big and some are small.

Some children felt that there was a connection or relationship between the objects they had chosen;

The squares like each other. Even if they are dots or numbers, they are friends.

Our groups are the same but different. They are all numbers. Mine are dice with dots and you have different numbers. (Fig. 6)

One child saw a relationship between the group of blocks he had created and the reflected group created by the sun;

This is my blocks group. I made it. The sun made another group. It is not real but it is like a group.

Giamminuti writes; **One of our key responsibilities in daily practice at schools is to know each other better, to grow to know ourselves and our place in a community, and through this knowledge, to contribute to our personal and collective well-being and understanding.**⁴

In listening to the children's conversations about the attributes they considered made up a group of inanimate objects, we had questions about how our research could be brought back to the formation of our class group.

What are the positive attributes each child sees himself as having?

How do these attributes contribute to the functioning and learning of the group?

Do other children see the same or different attributes for a particular child?

References

- Giamminuti S. (2013). *Dancing with Reggio Emilia: metaphors for quality*. Mt. Victoria: Pademelon Press, Page 53.
- Turner, T and Krechevsky, M. (2003) *Who are the Teachers? Who are the Learners?* [online] Available at: <https://bpsearlychildhood.weebly.com> [Accessed on 11th May 2018]
- Ritchhart, R. (2017). *What does it feel like to be a learner in this classroom?* Paper presented at the Cultures of Thinking Conference, Bialik College, 17th August.
- Giamminuti, S. (2013). *Dancing with Reggio Emilia: Metaphors for quality*. Mt. Victoria: Pademelon Press, Page 80.

We will protect it from the humans...



“

What does it mean to be a global citizen? What is the importance of the rights of the child and is a child ever too young to be powerful, to become a global citizen? Being a global citizen is being an individual who is aware of their wider world and their role within that space.”¹

According to Loris Malaguzzi, the founder of the Reggio Emilia approach, a child is born with rights and is powerful from this moment.

“It is the image of the child who from the moment of birth is so engaged in developing a relationship with the world, and intent on experiencing the world that he or she develops a complex system of abilities, learning strategies and ways of organising relationships.” (Carla Rinaldi)²

This relationship with the world is what develops a global citizen. A child who understands how the world works. To have a true understanding of their world the child needs to acknowledge the past, look towards the future but most importantly be in the present.

The children of Kinder 3M began their journey of ‘world awareness’ by looking into the past. What was here before us? Did the world exist before us?

Yes, people lived here.

They looked different to us.

Did they look after their land? We researched and looked at some images, on the interactive white board, of Melbourne before the city existed.

It’s the Yarra River.

To deepen our understanding of the people who were here before us we read the book authored by Aunty Joy Murphy and Lisa Kennedy titled “Welcome to Country”³. The book discusses the Wurundjeri people of the Kulin nation, these are the original owners of the land Melbourne now stands on. The children decided to thank the Wurundjeri people for allowing us to live on this land and for being the custodians of the land. We wrote an acknowledgement to country.

Thank you for your land

Thank you for letting us be on your land

Thank you for being with us

Thank you Wurundjeri people

We will take care of it by keeping it safe

We will protect it from the humans.

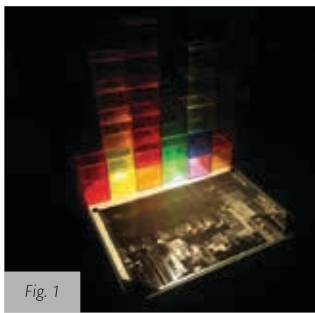


Fig. 1



Fig. 2



Fig. 3



Fig. 4

It is one of the rights of the children of Kinder 3M to include the Australian Aboriginal perspective into their learning journey. It is essential for cultural preservation and also out of respect for the world's oldest living Indigenous culture. (Jessica Staines & Ruby Red Scarlett)⁴. We also need to think about the rights of the local Aboriginal people, the Wurundjeri people of the Kulin nation.

Reflecting on the children's acknowledgement to country, what can we do to take care of this country, how can we keep this land safe?

We researched images of Melbourne today. How has this land transformed?

Lot's of towers make a city

A house, lots of houses

My mum says the city is a little bit grey. (Fig. 1)

We read the book "A Forest" by Marc Martin, also a Melbourne based author⁵. The story is about a forest that disappears so a city can be built, but concludes with the city being destroyed and the forest regenerating.

What will happen to Melbourne if we don't care?

Melbourne will be a pile of mess

A mountain of rubbish.

How can we care for our land and the Wurundjeri peoples' land? What can we do with our rubbish?

After extensive discussions about recycling and writing an emailed letter to the parents, strengthening the collaborative partnership with the families of the children (ACECQA)⁶

The children concluded to make their own city from recycled materials. With the recycled materials not only supporting the children's quest for sustainability but also allowing the children access to building materials that have had a previous use and transforming those items into something new.

Dear Mums and Dads,

We are learning about recycling. We would like you to bring some paper, boxes, old clothes, buttons, plastic, glass and metal to school. Please put them into the box next to the recycling bin.

Thank you Kinder 3M.

Once the recycling materials began to arrive in to the kinder room the children began to plan for the city.

How are we going to build a city?

We need to do some thinking first.

You first need to think what you are building.

How do builders know what to build?

They went to university. They are smart.

We researched what a builder requires and viewed plans for buildings. We looked at maps and the children drew their own maps. This then allowed the children the opportunity to move from the visual, the verbal and then the graphic representation of their ideas. Each time their ideas are represented in a different media the children have the opportunity to reinterpret their thoughts. It makes the thinking visible and helps to clarify their ideas. (Jan Millikan)⁷ (Fig. 2)



Fig. 5



Fig. 6



Fig. 7

The building began. The children selected the small groups that would work in the studio. Sometimes just two children worked together, then sometimes up to five children worked together. The small groups of children allowed the children to be able to follow the part of the journey that they were interested in as well as to be able to coordinate and negotiate within that. (Jan Millikan)⁸ (Figs. 3 & 4)

I am building the roads and the buildings.

We need black for the roads. If you cover it in black it wont be a city it will just be roads.

I am making another tower so if one is too small people can go in another.

I am making a telescope so they can see what's there... (Figs. 5 & 6)

As the children further developed their city we could see that the children developed their own pace and direction within the project. The children have now added images of themselves to go into the city. (Fig. 7)

As Carla Rinaldi says **“I like to use the metaphor of taking a journey, where one finds the way using a compass rather than a taking a train, with its fixed routes and schedules”⁸**

Can we redirect this journey back to the idea of global citizenship? We have developed an awareness of the communities around us, both past and present, an awareness of the meaning of country and culture.

When Jerome S Bruner states **“Education must be not only a transmission of culture but also a provider of alternative views of the world and a strengthener of the skills to explore them”¹**

We now need to look outside our community and towards the future. The importance of educating the children that the decisions they make affect others in the world.

We will continue to acknowledge the children's right and the rights of others. We will continue to acknowledge the footprints we are leaving behind us and move towards a future of being a global citizen, whilst being aware of the processes of transformation. We will do this through education and life experience.

“Education is not a preparation for life, it is life itself” John Dewey¹.

Recycle stuff so you can be kind to the world.

Make sure you don't be mean to other people.

We live on the ground.

We live in Earth.

References

1. Ideas for Global Citizenship What is Global Citizenship? Accessed May, 2018 < <http://www.//ideas-forum.org.uk/about-us/global-citizenship> >
2. Rinaldi, C 2013, Re-Imagining Childhood: The Inspiration of Reggio Emilia Education Principles in South Australia. Government of South Australia. Page 15
3. Murphy, J & Kennedy, L 2016 Welcome to Country. Walker Books, Newtown, NSW
4. Staines, J & Scarlet, R,R 2018 The Aboriginal Early Childhood Practice Guide. Multiverse, Australia. Page 15
5. Martin, M 2012 A Forest . Templar Publishing, London. U.K
6. NQS Standard 6. ACECQA, 2018 National Quality Framework (revised). Australian Children's Education and Care Quality Authority, Australia
7. Millikan, J, 2011 Reflections: Reggio Emilia Principles within Australian Contexts. Padmelon Press, Castle Hill. Page 37
8. Millikan, J, 2011 Reflections: Reggio Emilia Principles within Australian Contexts. Padmelon Press, Castle Hill. Page 89

*I am in a planet:
It's called
dinosaur house*



“

Play is the highest expression of human development in childhood, for it alone is the free expression of what is in a child's soul.” (Friedrich Froebel)¹

This year we began our kindergarten journey with our new parents and children. At our parent orientation night, we discussed our investigation focus of 'transformation'. We asked the parents what transformation they would like to see in their child during the year in kinder. Many of their responses were about their child's 'relationships' with their peers. Some examples included learning to share and respect their friends, being kind to each other and the ability to understand socially acceptable behaviour. And so the 'relationships' became our catalyst for the investigation. We understand from our own experiences that communication matters in building relationships. **“Being able to communicate fluently is a significant part of being human: It allows a person to learn, build relationships and succeed in life.”** (Turner T. and Krechevsky M.)²

Apart from many other factors, the children's social and emotional development is an important factor in how relationships will be formed within a child's kinder environment. Maria Montessori, one of last centuries most brilliant educators, said that **“play is the work of children. In a society dominated by 'work' adults sometimes trivialise play, forgetting that it inspires both imagination and creativity – what we all need to become the best we can be.”**³

Play helps children with decision making, managing and controlling their own behaviour and resolving conflicts. In our class the children had shown an interest in dinosaurs. Whether it was indoor or outdoor play they would gravitate to the dinosaurs and their imagination led their play. Keeping their interest in mind we decided to extend their relationships and thinking through play. The aim was to strengthen the bond between the children and extend their connections with each other, the environment and the materials. We began with a meeting with those children that were interested in dinosaurs to build a dinosaur house. We selected a space for an uninterrupted play. We gathered some accessories that the children might like to add to their imaginary play including natural materials, blocks, other animals and props. (Fig. 1)



Fig. 1



We will also need to have food, grass, water and rocks for the dinosaurs.
We need to put the blocks around first
They got to be high so the animals don't run away
The blocks keep falling because there is a gap
We need to move the blocks to close the gap and then the dinosaurs will not be able to run away
Did you know the dinosaurs can fly away from their caves?
I am in a planet: it's called dinosaur house



How did you get inside the dinosaur house? I will show you: Where there are less blocks it's easy to get in from there. I put my one leg in and then I put my other leg in. This way it helps me balance my body and I don't break the dinosaur house. (Fig. 2)

Fig. 4

The children had to experience and see for themselves the cause and effect of their predictions. They also had to walk around the dinosaur house very carefully to make sure the building did not fall. This required balancing their bodies and concentrating as they walked along the narrow spaces around the dinosaur house. While the children were adding more blocks to the building, they realized that if they bent over to add more blocks then the building might break. They began to add more blocks by putting their hands in between the vertical blocks. The children worked out strategies together which also help strengthen their relationships with one another.

Yes! We want to do that. (Fig. 3)
 How about you each choose a dinosaur and give them your name? The children were excited about this idea. It gave them a sense of belonging and it became more meaningful as they played with each other.

We are a team, we start working together and stop working together
Look how nice it looks! We worked hard
This area is like a hot air balloon and only two can get in hereby
This is a family of three dinosaurs because they are the same shape size and colour

Every day we start and end our kinder day together with a song and discussion. The children included their play in these discussions:

The children returned regularly to this space. Now that the children were enjoying their play we had to think about how we could maintain their interest. How do we further extend their friendships? If we transform the dinosaur house into a kindergarten will this interest the children? How will this impact their friendships?

You have to be three or four to come to this kinder
My dinosaur is annoying me
Come with me and I will look after you
Let us make a bigger kindergarten
Like we have a big kinder
We need a tree for a flying dinosaur
You are not my friend
That is not nice! You should say you are my friend
This dinosaur has a broken leg so he can't be in kinder

We asked the children: Do you want to change this dinosaur house into a dinosaur kindergarten?

One focus and outcome for the children is to respect each other regardless and to treat others how they would like to be treated. Empathy is an important value and we need to make our children aware of it. Therefore, our response to the last comment was that we are all different and so are the dinosaurs. The children agreed that the dinosaur with one leg should be in the kindergarten with other dinosaurs. (Fig. 4)

This prompted more discussion:

May be the other dinosaurs can look after him

He is lucky because everyone will look after him so we should call him Lucky

I made a bridge for the dinosaur to walk on and it's stable

I will add small coloured blocks and make a tall building

It keeps falling

Yours doesn't fall why? (Fig. 5)

Actually mine is not as tall as yours and it has two blocks at the bottom that makes it more stable

There are bottles with lids, can we use them?

The two bottles one on top of the other can balance but if I put three bottles it falls

Mine has three bottles and is not falling down

You can copy me

My dinosaur is friends with your dinosaur

Friends let us go to school

If the bottle tower falls I know my friends will help me to build it again

The dinosaurs are friends like us and they look after each other

This is all pretend because dinosaurs don't live anymore

Yes! The things that are no longer alive on the planet are called 'extinct' and the things that are alive we say 'exist'.

"Play is a context for learning through which children organise and make sense of their social worlds, as they actively engage with people, objects and in other words, as children play they are exploring their world, experimenting with ideas and learning to co-operate with others." (DEEWR)⁴. The children are now initiating play with their peers and not relying on adults. They have an understanding that if they accidentally knock down the building they repair it. We have heard them laugh and giggle. Sometimes

they excitedly call out for an adult to come and see what they have made. As their play and relationships have strengthened their dinosaur house transformed into a kindergarten, then a jungle and finally became a dinosaur city. (Fig. 6) What made these transformations in their play? Did the relationship between the children become stronger as they spent more time and felt more comfortable with each other? Yes! We have seen a transformation in their relationships from being shy and quiet to loud and happy; being accepting of each other; knowing and learning about each other's strengths and looking after each other. The children are very proud of their achievements.

"Effective communication is critical in every aspect of a person's life. Communication skills influence relationships in families, children, friends and at work. Good communication helps build relationships in good times, and mends relationships in difficult times. These skills include speaking as well as listening and non verbal communication." (University of Nebraska)⁵

References:

1. LeBlanc, M. 21st Dec. 2010 Friedrich Froebel: "His life and influence on education" Community Playthings: Available at www.communityplaythings.co.uk/resources/articles/friedrich-froebel.html Accessed on 1 August 2018
2. Miller, C. 13th June 2017 – Early Childhood Communication Development | LIVESTRONG.COM Available at – <https://www.livestrong.com/article/57...> Accessed on 1 August 2018
3. Raffi 1st March 2012 – Play is children's work: Children's Museum of Central Nebraska: Available at: <http://www.CMOCN.ORG> Accessed on 1 August 2018
4. The value of play: ECA Learning Hub: DEEWR (2009) *Belonging, Being & Becoming: The Early Years Learning Framework for Australia*. Canberra: Department of Education, Employment and Workplace Relations. Accessed on 24 June 2018
5. *The Learning Child: University of Nebraska: Early Childhood Development: The learning child* Available at: <https://child.unl.edu/communication> Accessed on 1st August 2018



Fig. 5



Fig. 6



Fig. 7



4 Year Old Kinder

The world changes, people change it, the world...

“

The Kinder 4 cross-class investigation was prefaced by the unpacking of the provocation – ‘Transformation.’”

During the year small groups of children from each of our three Kinder 4 classes came together with the arts educator in a large art studio at different times. Some students came for a few sessions where their interest in a particular material or idea was pursued. They then they continued with other investigations in their respective classes. Other groups desired to revisit materials and further develop their interests in the larger studio. Our investigations encourage collaboration within many groups with opportunities to explore a wide range of materials and with the fluidity of pursuing individual interests yet being open for others to add their input and join in. A further focus this year was to offer a multi-disciplinary experience in the cross-class studio investigation.

As stated in the Victorian Early Years Learning Framework “Children are confident and involved learners” and “**they develop and use their imagination and curiosity as they build a ‘tool kit’ of skills and processes to support problem solving, hypothesising, experimenting, researching, and investigating activity. Metacognition begins to develop as young children begin to ‘think aloud’ and discuss learning in ways that help to deepen their knowledge of information and processes. They negotiate and set achievable goals, seek to understand and can predict outcomes. With encouragement, children become comfortable with taking risks**”¹

Within this cross-class investigation, the children explored a range of materials and skills, ideas for the welcoming of others and explored ideas and concepts of others from beyond the groups.

I attended an exhibition at the Cooper Hewitt Museum titled ‘The Senses; Beyond Vision’, where one could involve all of the senses in experiencing materials through touch, texture, sound and smell. This exhibition highlighted what and how we equate our senses with our thoughts when encountering materials. For some an initial experience suffices although if encouraged to revisit, new discoveries can be made. The intent of igniting new wonderings and ideas with the cross-class groups was initiated with a variety of plastic colour 2D shapes and 3D offcuts. “**Materials are the flesh and bones of objects... Plastic, metal, ceramic, glass have a distinct hardness, roughness and shine. A material’s ability to conduct heat or trap air makes it feel warm or cool to touch. Textures speak to the eye as well as to the skin, enriching surfaces with real or simulated depth...**”²

Using a Visible Thinking routine (Harvard Project Zero)³, the group were asked what they could see and what they thought about it: (Fig. 1)

I can see water bottle bottoms and white.

Bottle lids – yellow and black.

Yellow shapes, pushed out and stuff in it and you can shake it.

It is like patterns, green, green blue, green, green, blue.

Squares with holes inside and on the bottom standing.

The groups spent time moving the objects; constructing and reconstructing; imagining and testing. Some decorated the objects with smaller shapes, whilst others connected the objects. This included turning objects upside down, placing them side-by-side or lining them up according to colour or size. Some created sounds by shaking objects that they had placed in another. This type of construction is of course not unique when opportunities to construct are readily available to the children and remain accessible for long periods. On this occasion however, the concept focused on how one thinks about ideas and how one applies these ideas, purposefully inventing something new or a new version of what was invented before. It was also about taking risks and challenging themselves both on their own and in a group.

A story about this thinking was shared with the groups. 'What do you do with an idea?' (Kobi Yamada) ⁴

Following the reading of the story we paused, and the children were asked to think about their understandings of 'an idea':

An idea you do it. A drawing or a painting, tracing, measuring...

One child told of her experiences with ideas:

Sometimes when I rub my eyes and close them and open them stuff appears and makes a picture.

Another child in the group responded:

I'll try it. I'll test it.

Before the child did so, his friend continued to assist:

When it is dark in my room and when I open my eyes, I can see different things.

So, with this information the child closed his eyes, rubbed them and after a while the child told the group that he could see blue. The testing of theories continued during this investigation as did the breadth of materials offering further connections. There continued to be an interest in the concept of an 'idea' – where does it come from and what do you do with it?

An idea means you can think about stuff and it comes true.

Yes, when you get an idea you use it for what you might want to make.

My brain thinks of shapes and colours.

We can draw our ideas then make them.

You can tell people your ideas and show them.

Show them in pictures.

Then they went to imagine what they want to make in their heads.

Because they want to use them and they make inventions from their mind.

Inventions make something.

The reading of stories about those who applied their ideas were featured in several books shared with the children. These

included 'Rosie Revere, Engineer' (Andrea Beaty)⁵ and 'Ada Twist Scientist' (Andrea Beaty)⁶. Both books highlighted the inventiveness when pursuing an idea, including humorous inventions. In these stories, the imaginative illustrations engaged the children, they observed the lines, ropes, pulleys and other materials that showed the desired idea of the invention.

I drew an invention for broken hearts and you don't want it to be broken, it makes it not broken.

A machine to make people happy every day and make what they would like.

It was the highlighting of how one planned for the development of ideas, that led us to visit the ELC's Centre for Hidden Treasures, which houses shelves of materials and offcuts from various suppliers and offers unlimited possibilities for the children. On one occasion, the children found some graph and grid paper similar to the paper used by two characters in the stories about Rosie and Ada. Several children chose to use the lines on this paper (vertical, diagonal and horizontal) to either follow and draw along the lines or to draw their thoughts about inventions. For others there was interest in the patterns they created on the page. In addition to the 'ideas paper' the children were interested in various components used in some of the contraptions invented in the story. I sourced additional resources from our school's physics department and, after discussions with the physics teacher and lab assistant, I returned to the studio with pulleys and stands, string and a variety of weights. In addition, I sourced several kits from this department that included spools, reels and belts with Velcro. The underlying intent was to build further relationships with materials, their properties and explore possible purpose. (Fig. 2)

One of the children had this kit with spools and belts at his home and shared his knowledge with others. The generalising of understandings of these materials and how they could be applied beyond a kit was an important consideration. Other materials were added and the children experimented with moving the reels. We noticed the children's strong interest in motion and wheels, the roundness of their shape and its possibilities. The pulleys and



stands, weights and strings were constructed, and the children explored the pulling up and down of the weights which were circular copper discs of differing thickness and weight. However, the children were more interested in the shaped discs and although some used the pulleys others were rolling the discs along the tables observing its effects.

The focus now continued within the concept of transformation as change and as movement.

The children were introduced to Leonardo Da Vinci's inventions including flying machines and other devices with the use of wheels. The story 'Leonardo and the Flying Boy' (Laurence Anholt)⁷ was read to the children which included the illustrations of the various machines Leonardo invented. The children related to some of the inventions with an understanding of how they are applied today. The machines illustrated in the book revealed the used of different sized wheels and materials used to make them. In the story Leonardo expressed the wish to design a machine so he could fly like a bird. This desire perhaps is taken for granted today as this has been reinvented many times since his inventions. The discussion was intended to be thought provoking; to create an awareness and empowerment of what is possible and the creativity and application of ideas.

With this as our direction, the children reflected on the use of wheels to assist movement and transform a machine:

You have wheels and an engine that makes a racing car and the wheels that made it go fast.

Transforming something that sometimes flies and sometimes is a car.

Rescue boats do that.

Aeroplanes can fly and drive.

Well they need to pick up speed to drive and to fly around after that to slow down before landing.

The children wanted to continue a discussion about wheels:

Wheels can go and go...

My grandpa sits on a chair with wheels.

Yes, if you are old you can go on a chair with wheels instead of walking.

Yes and you can sit in a chair with wheels that horses drive it.

Or your feet can move the wheels. On a scooter you shuffle foot slow and shuffle fast.

On my bike you pedal fast and then you keep on riding.

Other resources about transport and machines with wheels were offered to the group. The children were particularly interested in the Penny Farthing bike. The group were asked to think about one of the wheeled machines that they would like to design and create.

Clay was available for building these machines. Although the children were able to articulate their knowledge about these machines many were interested in fashioning wheels out of clay and some thought about how the wheels would be attached to a machine. (Figs. 3 & 4)

What do you think you know about wheels?

Wheels can drive. With an engine it can move.

There are car wheels, bike wheels and scooter wheels.

And motor bikes.

A tractor has big wheels.

A train has wheels too.

Some wheels are big and small.

Car wheels are bigger than a bike. A car needs to move faster that's why the wheels are bigger.

Some tyres need to grip. They need to grip on the dirt.

You pedal wheels round in circles, wheels ride them and they can flash on and off.

Wheels change fast or slow.

Scooters can change without an engine, your feet make it move and stop.

Aeroplanes have wheels that land on the ground

When aeroplanes take off, they tuck the wheels under the aeroplane and when you go to land the wheels come back out.

And a machine that can transform from a car to a scooter to a skateboard.

We presented the groups with several circular shapes in metal to further their thinking about the relationship we have with circular shapes. Bruno Munari refers to the circle as a symbol that has always represented eternity with no beginning and no end.⁸ He discusses the circle that can be seen in nature, both as a shape and as a sphere. We can identify with a circle shape that denotes a symbol and in addition, this shape can preface the beginning of children's mark making.

Would offering a different circular material further the children's interest and understanding in what they had previous been able to articulate in earlier conversations? The interest for us was also in the children's relationship with the material and the surprises that they encountered.

The children were interested in the sound made by the metal circles and the coldness of the material. One child remarked that if you held the circle it became warm. The children tapped the metal circles, comparing the sounds of the large and smaller shapes. They moved to a larger space and tested what the circles could do, discovering the rolling, spinning and comparing with each other how long the circles remained spinning. They tested this outside on a ramp area and made a race with circles:

These circles can be thin.

They can move and go around anywhere.

Small and big wheels.

Small circles go very slow.

Big circles go faster.

The children traced around the circles on paper and some divided the circles adding pattern and colour.



Thus far, we had referred to singular circles. Other resources were now added from our schools 'Makerspace Centre'. In consultation with the staff in this area, we sourced small and large Lego wheels, axels and other connectors. A tub of these materials were offered to the children. We asked the children to view the wheels and discuss what they could see. This included observations of varying sizes of wheels and rubber tyres: (Figs. 5 & 6)

These are tyres that can grip.

Yes, wooden wheels can break (referring to early machines observed in factual books in the studio and in the story about Leonardo's inventions).

And so, the students tested their theories of motion and speed by rolling one wheel and then connecting two wheels. Again, they proceeded to test both indoor and outdoor ramps. Each cheering on the other as to the distance the wheels travelled:

Little wheels are always faster.

But the big wheels won.

Some of the children found pieces of wood to make their own ramps whilst others were interested in making a construction with four wheels.

The discussion as to whether the wheels needed to be the same size was generally refuted by those building, with several constructions featuring sets of small and large wheels. Many races ensued, and filming was captured in the process and relived at a later time. (Fig. 7)

This investigation was now culminating in an understanding of what you do with an idea, its purpose and actioning it and thereby changing something in a small or large way.

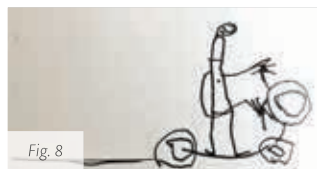
At this time some of the children discussed drawings that they had created, a machine that was transformative itself or how it could be used to transform. These machines would fly beyond that of a bird or a plane and into space; (Figs. 8 & 9)

It will take photographs of space and bring them back to earth.

This machine can go under the sea, it can go in the moonlight level, sunlight level and daylight level and it has a playground in it.

This machine has a boat and a rocket, and you press one of these gold lines and it launches them both at the same time. The rockets saves things in the air and the boat saves things under water.

These inventions were recorded with the children's voices and with their painted illustrations of the places that these machines could travel to. (Figs. 10 & 11)



In the picture book, 'Journey' (Aaron Becker)⁹, a child's imagination and inventiveness with a red marker takes the child to an imaginary world of places, with flying machines and other contraptions. The story has no text which highlights the richness of illustration, where one can wonder and imagine. A story open to many discussions and interpretations and the anticipation of what might happen next. This story did indeed capture the children's thinking. A comment from one of the children resonated as the culmination of this investigation of ideas, inventions and transformation:

The world changes, people change it, the world...

References

1. Victorian Early Years Learning Framework; Outcome 5. <https://www.education.vic.gov.au/Documents/childhood/providers/edcare/veylf/framework.pdf> [accessed 8 /6/18]
2. The Senses; Beyond Vision. <https://www.cooperhewitt.org/channel/senses/> [accessed 6/8/18]
3. Visible Thinking Routines http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03c_Core_routines/SeeThinkWonder/SeeThinkWonder_Routine.html accessed [accessed 10 /7/18]
4. Yamada, K. What do you do with an idea? (2014) Compendium Publishing & Communications. US
5. Beaty, A. Rosie Revere, Engineer. (2013) Abrams Publisher. US
6. Beaty, A. Ada Twist Scientist. (2016) Abrams Publisher. US
7. Anholt, L. Leonardo and the Flying Boy (2007) B.E.S. Publishing
8. Munari, B. Design as Art (2008 reissued 4) Penguin Books Ltd England. P196.
9. Becker, A. Journey. (2013) Candlewick Press, US

Light and colour are friends because they play with each other...

“

Colours are those things that are in the rainbow...”

Colours are not all the same...

It's a kind of paint...

The white sheet doesn't have colour...

The window doesn't have colour, it's like water, it's a see-through colour...

In our research around the meeting of young children with colours, and the experimentations that come to life in this meeting, we decided to start our 2018 investigation by inviting the children to unpack what colour means to them. (Fig. 1)

According to Dina Stachel colour is **“one of the properties which can be visually perceived without difficulty and by encouraging the children to constantly observe the colours of both natural and hand-made objects we will make them aware of the enormous diversity of the colours around us”¹**.

We began with a whole group conversation which revealed the children's understanding and knowledge of the differences between transparent, translucent and opaque. Although only a few children led this conversation, all the other children listened attentively. This observation made it clear to us that this investigation would include all the children. However, our desire for richness and depth required creative planning. Although the intent was to create an environment within the environment to enhance a scientific and pedagogical research, catering for individuality required differentiation of learning. That led us to setting up mini experiences offered to the children at different areas in our room throughout the seven months.

We placed a coloured transparent block by the window to invite its shadow into our room. At the beginning the children were fascinated by the one colour and soon many other blocks were placed nearby. This captured the children's attention and they approached this area on a daily basis with great deliberation. (Fig. 2)

‘Transformation of colour’ was the subject of exploration and research by the children and teachers in our group this year.

Understanding how powerful a provocation can be in its ability to encourage curiosity, a conscious choice of specific images was made. The images with multiplicity of meaning, open for interpretation, were presented to the group on the interactive white board at different stages of the investigation.



Fig. 1

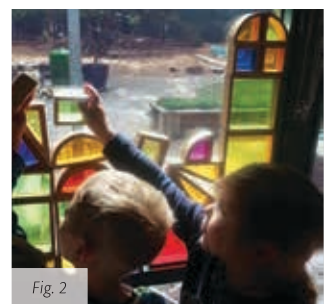


Fig. 2

At this stage we decided to provide broad opportunities for scientific explorations and experimentations to take place. Some involved observations of changes over time, for example placing white flowers in coloured water, whilst others involved doing and discovering such as mixing oil and water, using torches to explore light travel through objects, and looking at the colours of light through prism glasses.

The coloured blocks with natural light 'touching them' created great curiosity and excitement as reflections appeared and disappeared at various times and angles during the day. The presence of these blocks supported new learning by the children and teachers in our group. (Fig. 3)

Look, the sun is coming through the blocks and pushes the colours on the mat...

Colours can make things light, if you add colour to things it can brighten them up...

Colours can go anywhere...

If it's dark the colours are still there but you can't see them...

When it's sunny, you can see rainbows in mirrors...

Colours is what we use for looking at things...

Over many weeks the children investigated colours from various scientific aspects. Transparency versus opacity, solid and liquid, what mixes or does not mix, colour-in paint and colour-in light. The choice of a material was made following the teachers' experimentation with its property. A set of questions and terminology to be used with the children around these experiences was carefully prepared. The children's learning was documented through photographs, videos, artefacts and notes.

In autumn our classroom filled up with a variety of leaves and seeds, a collection that the children added to every day. Here began another path of transformation; the leaves were starting to curl up and fall apart easily and their original form and colour were modified naturally. Because of the children's attention to this process, this mini project mirrored the path of change and the classroom became a work site for transformation. Tables covered with leaves were observed closely under a microscope, colour mixing of water and oil, colours projected from a light box in a dark corner, a pile of cellophane in all sorts of colours waited to be cut, crunched, folded and attached, plasticine was rolled, squashed and moulded in separated colours. The children used their hands, magnifying glasses, prism glasses, droppers, the overhead projector, light table, interactive whiteboard, coloured boxes, torches, a camera and a microscope in their research project. The children shared their discoveries as well as their wonders in small and large group sessions. The phenomena of 'LIGHT' appeared to capture their interest, particularly in relation to colour:

Light makes colours...

Light can bounce off things when you move it...

Light can sometimes turn to colour...

When you shine with the torch (on silver paper) it made colour... the light was bouncing on the colours...

Light plays a very important part in our lives. It hides or reveals certain details and the whole range of colours can be changed by light.



Fig. 3



Fig. 4



Fig. 5

What do we know about light?

It's something that makes you see better...

Light is everything...

It's a kind of shadow, but it's brighter...

Wherever is a colour there is light...

Fire is light...

Light is always hot...

If colours are made of glass, it's very easy to see their reflection...

We need light to see colour... (Fig. 4)

"Light and colour offer children many opportunities to experience physical extraordinary ranges of sensory and perceptive interactions: visual, auditory, linguistic, imaginative and fantastic" (Loris Malaguzzi)².

At this stage the children were still relating to the coloured blocks and their reflections as 'shadows' and many comments were noted on a daily basis:

Every time the shadows move to a different home...

The shadows want to go back to the blocks because the blocks are its family...

Those colours may be just shy because they are going away when we speak loud so let's be quite and see...

Maybe the shadows want to climb up the wall...

Those colours want to go on the floor but they need the sun to do it, which way the sun is going is where they go too...

On a rainy day your shadow is inside your body...

The colours are back... they came for our Shabbat, they must be Jewish...

The children liked to observe and 'touch' the coloured shadows that the sun left through the blocks attached to the glass. They started to build relationships between colour and light with grace and pleasure. (Fig. 5)

The colours of the shadows don't stay for a long time when the clouds are coming...

Clouds are a bit clear and a bit white, its called translucent white...

Shadows are dark light...

At this stage in collaboration with the school science department we decided to propose a challenge to the children by introducing the prism glasses:

I can see stripy rainbow and circle rainbow...

People look clear but a little bit raibowish...

The colours look like cotton candy...

I see a rainbow... it is dancing...

Those round lights look like flowers spinning around...

There is a rainbow inside the glasses...

The light is transforming in these glasses like zig-zagging... the light is going into the glasses but not going out... only some light is going through...

It's like a moving gallery... (Fig. 6)

Our classroom was set up to support and encourage scientific experimentation and learning. Our studio space, always fascinating and sought after by the children, supported the group's encounter with colour and material through a collaborative installation of three-dimensional transparencies of light and colour. (Fig. 7)

We chose the visual language not as a separate discipline such as drawing, painting or sculpture. Rather we have focused on the visual language as **"a way of investigating and building bridges and relationships between different experiences"**(Vea Vecchi)³.

The idea was to keep the cognitive and expressive processes in close relationship with one another working on the connections between both parts of the research: colour and light. The pedagogical choices of the provocations as well as the material offered to the group fed the children's enthusiasm and motivation to explore further, to visit and re-visit the material and to become aware of their discoveries.

The theme of 'colour' is particularly dear to our group. Over the last eighteen months we have made several group projects on the subject. The scientific language that developed throughout the investigation became a tool for shared learning between children and teachers. We probed the children and observed how they, with amazement, pleasure and resourcefulness experimented the relationship between colour and light. (Fig. 8)

The investigation of 'transformation of colours' has thus become a subject of daily actions of the children, an incomplete heritage of the individual but also of the group. It is a story that should continue, as said by Loris Malaguzzi **"...we want to be sure that the desire, interests, intelligences and capacity for enjoying and seeking...do not remain unused..."** (Loris Malaguzzi)⁴.



Fig. 6



Fig. 7

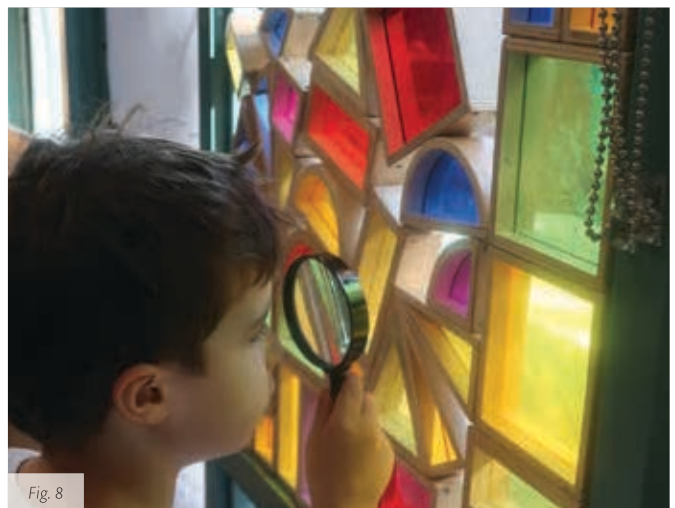


Fig. 8

References

1. Stachel, D (1986). *MATAL Early Childhood Program*, Ramat-Gan: Massada, p. 27.
2. Malaguzzi, L (2006). *The Hundred Languages of Children*, Reggio Emilia: Reggio Children, p. 62.
3. Vecchi, V (2014). *Children, Art, Artists*. Reggio Emilia: Reggio Children, p. 137.
4. Malaguzzi, L (2012). *The Hundred Languages of Children*, California: Praeger, p. 325

Images:

- Fig. 1 Revisiting the kinder rainbow
Fig. 2 Organising the coloured blocks by the window
Fig. 3 Dancing with the colours
Fig. 4 Exploring light and colours with torches and foil paper
Fig. 5 Touching the colours
Fig. 6 Discovering colours through prism glasses
Fig. 7 Working on a collaborative installation
Fig. 8 Looking closely at the coloured blocks

Kinder 4J

‘Your heart gets bigger’



“

Transformation was our umbrella idea for 2018. What does it mean, not only for the children but for us as educators? What does it look and feel like? As Alvin Toffler in his book *Future Shock* stated, “Change is not merely necessary to life – it is life”

When we came back together as a group at the beginning of this year, the children themselves noticed changes – a new room with a different layout, changes in themselves:

Our room has changed because we are four

We get birthdays to get older and change

You change the numbers in your body

Your heart gets bigger

When we get older, we learn new things because you know the old stuff, and then you learn the new stuff

With the potential that children have for constructing their own knowledge, their resourcefulness and depth of thinking, they began to make sense of the concept of change/transformation. They became aware that transformation has many facets with the word ‘transformation’ becoming a natural part of their daily language. It was interesting to note that the children noticed minute changes in their environment that would often go unnoticed by adults.

The catalyst for our class investigation was a surprise gift - packets of seeds. Ever since the children were in Kinder 3, there was a strong class interest in gardening. With their connection to the earth this would be a natural path to follow. **“If we really want children to thrive we need to let their connection to nature nurture them.”** (Claire Warden)² (Fig. 1)



Fig. 1



They all got born on the same day, but some are taller than others, because the sun came and we put water in (Fig. 2)

“Nature connections made in childhood are instrumental to the construction of values, development of an ‘ecological self’, and can be reviewed as a lifelong resource.” (Sue Elliot)³

The children came into kinder each morning to check on their seedlings' progress. Measurement of time became a strong interest with many questions being posed. When did we plant the seeds? Can we count the days until it started to sprout? The children speculated about time and growth:

They need time to grow

You can't just wait for 1 day for them to grow, you need one hundred years

You need one hundred and forty-five minutes

You need one hundred days (Fig. 3)

In consultation with a maths teacher we wondered what it would mean for the children to use Uniblocks as a form of measurement. Each pot was numbered, and the children added one Uniblock onto the next to measure the height of their plants. Many theories and questions were raised...What's going to happen next if we give it another month? How many more blocks would you need in a week, in a month? (Fig. 4)

What further transformation would we see? By mathematically plotting the data collected from these measurements on a graph, the children learnt about measuring comparisons and another form of recording. (Fig. 5)

The discovery of a fallen branch in our yard led us to another aspect of natural transformation:

It transformed from a tree to a branch

It was once stuck to a tree

It once had leaves

The leaves can't grow because it's a broken branch

It's got some pointers, and from the pointers leaves might grow or might not grow

Could we transform it again?

We can cut it into pieces

No, we can't hurt it

Could this branch grow new roots?

It won't work because it's not connected – it won't be alive still

Trees have blood – all the blood may be in the roots

When the tree is broken it's got no roots, the blood is dried

The dead branch was compared to the branches on the Mulberry tree growing in our garden:

This one needs roots from the soil

We could get the roots from another tree and stick it onto this branch with cello tape

What potential for transformation would the children see with this gift of seeds?

The seeds are going to transform into flowers

The big flowers come from small seeds – they transform

First the seeds start like babies, they start opening, and then they are adult flowers, and then the people pick them

Before the seeds were sown in small tubs the children classified and categorised the seeds according to colour, size and shape. The offshoots of our many discussions led to an emergence of a greater understanding and many hypotheses:

There are no flowers but seeds

They have all those colours

Maybe they are only blue?

Maybe it has a bit of colour inside the seeds

Maybe we should just plant it!

Getting their hands 'dirty' and connecting with the earth was important for the children. Integrating nature into learning can transform the way children learn. We wanted to ensure that they had an authentic and natural learning experience. As the children sowed their seeds, each in their own container, they were completely absorbed as if they were at one with the earth. A calmness and sense of purpose prevailed. As the seeds started sprouting the children were fascinated by the different heights:

They changed colour

They were small and then they grew a bit bigger

They are brothers and sisters – the one we have is the older one because it is taller

This branch is dead, because it's dark, and this tree is alive, because it is light (Fig. 6)

Intense debate and theorising followed:

We can't plant it again

Yes, we can – we could make a hole and stick it to another tree

We can draw flowers, cut them out and put them on the tree

We could make a woolly jumper for the branch to keep it warm

The children worked on their vision of transformation:

We are decorating it so it can be alive again

It's not meant to be dead

He would need another tree to be his friend

He can play with it

He could share the flowers we made

Maybe they can hug and kiss

One branch can be mum and the other dad. Then they can play mums and dads. (Fig. 7)

Why would children equate (anthropomorphise) nature with human relationships such as keeping the branch warm and finding a friend? **“Ecologists, environmental psychologists, and others suggest that we all have a natural attraction, or affinity for life referred to as biophilia, a love of nature.”** (Claire Warden)⁴

The branch was duly put together with its 'new friend', into a pot and covered with hessian 'blanket' which the children had designed and embroidered.

In January this year I returned from a teacher exchange visit to the Arava in the south of Israel where sustainability was vital to the arid desert conditions. I was keen to replicate the kinder hothouses, just one of their many sustainability projects there. At the World Summit on Sustainability in 2002 it was stated, **“Education for sustainability needs to be a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future.”**⁵

You need to respect the hothouse

You can't pull plants out. (Fig. 8)

We wondered what they knew about hothouses now?

It can be hot

When it's really hot you can put your plants and vegetables there

The cover is like a blanket so that it can protect the plants

The hothouse is hot when it is closed

In the Arava it's hotter, if you put your plants outside they can burn

And in Melbourne, you put them in the green house so they can't freeze

The sun doesn't come in.

“If we allow people to shape their own small worlds during childhood, then they will grow up knowing and feeling they can participate in shaping the big world tomorrow.” (Sue Elliot)⁶

References

1. Toffer A. (1970) Future Shock. Available at <https://www.azquotes.com/quotes/topics/future-shock.html> [accessed 10.09.18]
2. Warden C. (2007) Nurture Through Nature <http://www.letthechildrenplay.net/2010/08/nurture-through-nature.html> [accessed 10.09.18]
3. Elliot S. (2008) *The Outdoor Playspace Naturally*. Castle Hill, New South Wales: Pademelon Press, P. 10
4. Warden C. (2010) (Kaplan and Kaplan 1989; Orr 1994) *Nature Kindergartens and Forest Schools*. Glenruthven Mill, Scotland: Mindstretchers Ltd, P. 128
5. Elliot S. (2008) *The Outdoor Playspace Naturally*. Castle Hill, New South Wales: Pademelon Press, P. 11
6. Elliot S. (2008) *The Outdoor Playspace Naturally*. Castle Hill, New South Wales: Pademelon Press, P.12



The life cycle of transformation... a story of ideas.



Fig. 9

“

Research is a response not only to curiosity but also to doubt. It provides the possibility for critical thinking and to construct new knowledge, but its purpose can also be a strategy for innovation in pedagogy. It is not a solitary activity, but a process of relationships and dialogue and of searching to ensure connections and inter connections between everybody and everything. Research is a habit of mind and attitude that can be developed or neglected.”
(Howard Gardner)¹

I have always wondered about the relationship between the order and patterns in nature and the purpose of this order. I have asked myself many times if the patterns and designs are an ecological one or is it to continue an existence of the species? I then wondered how I could engage with the children so that we had a common ground for understanding such a complex subject.

In my search for understanding the concept of a spiral, I came upon the order of Fibonacci number and the Golden Ratio which has always intrigued me, as I have never fully understood the number in sequence that appears in nature. I had doubt right there! This is a concept also used for art and design in composition. Furthering my research I realised that Fibonacci number is a pattern all over in nature, our bodies, art and architecture. The Fibonacci numbers are nature's numbering system and are applicable to the growth of every living thing.

Spirals are everywhere.

We often found ourselves collecting twigs, sticks, stones and pine cones when we went on our weekly rambles. We found an assortment of pine cones too – long ones, small ones and very large ones. Upon looking at them we discovered an intriguing pattern. Discussions around the pine cone began and then I realised that my research into Fibonacci number was becoming a reality in our room. I was excited to try and make connections between order and the spirals of the pine cones.

I decided to direct the children's focus to pine cones, a resource that was readily available and it has the perfect spiral at the bottom of it. We sat and looked at the pine cones over a period of weeks, collecting many different types. (Figs. 1 & 2)

In an article in *Innovation*, Tanim Taher said “as the circles of contact widen I begin to see how collaboration is a spiral of interaction between people. Maybe it’s more than one spiral, something similar to those figures of DNA strands, spiralling around each other.”²

I then realised how interconnected the work of the children could be when embarking on this research with them. It could be like the spiral, which can be likened to a particular order.

I began to observe the order of the children’s work when they built, using blocks, constructed using loose parts and in designing and planning. Did they work according to a pattern or order, as Fibonacci number suggests, or was it randomly organised. The more I observed them in play and whilst drawing and painting I saw that there is a definite understanding of order when they are busy with their work. (Figs. 3–6)

In my opinion children learn completely differently to adults. The order and placement of materials seemed to make sense to the children, no matter how many loose parts were used. The collaboration and understanding is like the spiral, like the order of Fibonacci number.

When I spoke to a small group and told them about the man called Fibonacci I mentioned that he discovered the beautiful order of number and I rattled off 1 1 2 3 5 8 13 21. One child asked, *What is the order of number?* Another child asked the pertinent question *Why is it beautiful?* A third child said, *The snail has a spiral on its back* and the fourth child said *The cactus has a spiral inside I think.*

“Young children are active learners and their best encounters occur with hands on, interactive play and self discovery rather than trying to impart knowledge to them.” (Piaget)³ “Young children have a natural curiosity that requires direct sensory experiences rather than conceptual generalization. To be effective and engage children based upon their developmental abilities and ways of learning, their hands on and sensory experiences need to be immersive and open ended rather than structured and scripted.” (Bredenkamp and Copple)⁴

The children were eager to collect and sort the pine cones into shapes and sizes. Some children were more observant than others and spoke about the shape. Upon turning and looking and poking and smelling the pine cones, one of the children mentioned the “shape” underneath. (Fig. 7)

It was now an opportunity to discuss with the children what they could see, what did they think and wonder about upon looking at these shapes.

I can see the end of the pine cone...this is different to that because that has gone out and that hasn't.

I can see the end and the top of it.

There are triangles around the pine cone. It looks like a salty pretzel.

Ooooh, I think it is a bit crunchy.

The big pine cones are soooooo different to the little ones, because only the little one has a black thing inside it.

It actually looks like a star.



Fig. 1



Fig. 2



Fig. 4



Fig. 6



Fig. 3



Fig. 5

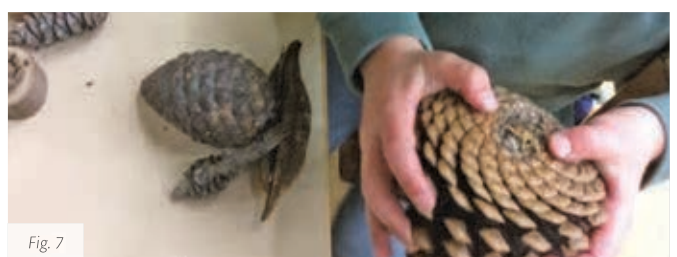


Fig. 7

Wait, wait, they have little kinds of seeds. They have spiky things.

Do you know that the pine cone gets insects inside of them so that they can grow better.

Look, look it is the shape of a flower.

Through biological processes, transformation weaves the story of the life cycle in nature. Everything changes, everything transforms. Phenomena more or less obvious that occur with different time scales and forms but are never indifferent to the eyes and intelligence of children, so connected are they to the world with empathy and curiosity. The spectacle of nature consistently surprises us – and sometimes moves us – with its strength and fragility: it reveals its secrets and in parts retains its mysteries. Nature asks to be investigated, contemplated and it requires time. We believe that recognising beauty through many stages of transformation of all living organisms reconciles us with the natural world and with ourselves, through an approach that is not ideological but ecological, ethical and aesthetic, so urgent in education today (Reggio Children)

During a discussion I proposed that we investigate Fibonacci number together by finding materials that look like a spiral as well as suggesting that we could use the design of a spiral to explore the possibilities of working with loose parts. The children were very enthusiastic and approached the project with excitement. The work in the studio continued for many weeks, and over time many different groups of children worked collaboratively on the spiral shape. There were children who placed materials randomly, there were the methodical workers and then there were children who were happy to engage on a social level, all trying to make sense of the spiral. (Fig. 8)

What is that shape? Is it a roundabout?

No silly, it is a spiral, can't you see, it goes from the middle and whoosh all around.

It is round and round and round again.

If you look at the bottom. Look it goes round and round and up and up.

As Eleanor Duckworth says in her book “the having of wonderful ideas” is what is considered the essence of intellectual development. It is the essence of pedagogy to give children the occasion to have them accept the ideas and provide a setting that suggests wonderful ideas to children – different ideas to different children – as they are caught up in intellectual problems that are real to them.”⁶

And so our journey has just begun – with all the 100 languages included. (Fig. 9)

Their play is a way of testing reality but also needs it. The freedom of children to play creatively, I believe can change the world and in turn change our beliefs and understandings. When these children grow up and hopefully teach others, then it will have a profound effect on their very own world, giving it respect that it deserves.

During our parent evening we decided to embrace our learning by sharing the content with the parents. We decided to set them a task by asking them to represent Fibonacci Number in a way that explains the perfect order. The only hurdle for them on this night was that they had to represent their ideas graphically. This was a challenge on its' own. As one parent commented saying,



Fig. 8

“giving the parents the ability to draw and communicate in the classroom was a little confronting and exciting, to remember what it was like in a classroom. Relearning to play; to communicate with our children on their level. A beautiful level.”

“Loved being part of the kids journey and learning new concepts, just like them! Love how much our kids love and appreciate nature from all they have learned.”

“What an inspiring evening. I felt so privileged to be given the opportunity of a glimpse into the wonderful blossoming minds of our children as they navigate their world and explore beauty found in the recurring patterns and order of nature. To see the discovery of the Fibonacci sequence as one of the aspects of our children, directed learning is as incredible and enlightening as the spirals of nature itself.”

“Lindsay Adi, Ortal and every teacher that has touched our children’s lives. Thank you so much. What a start to life!”

“It was wonderful to get such a clear understanding of what the children had been exploring. To think that our 4 year olds can grasp such a complex concepts is amazing but understandable when it’s so carefully explored.”

The spiral continues and Fibonacci makes perfect sense in the order of things.

References:

1. Gardner, H. (2011). *Research in Reggio. Intelligence, creativity, ethics: Reflections on my evolving research.*
2. Tanim, Taher (1993) *Innovation*
3. Piaget, J. (1952) *The origins of intelligence in children.* New York, International Universities Press.
4. Breidenkamp, S and Copple, C. (1987) *Developmentally Appropriate Practice in Early Childhood Programs.*
5. Reggio Children, *Living Organism Atelier Newsletter.*
6. Duckworth, E. (1995). *The having of wonderful ideas.* 3rd edition. New York: Teachers College (Press)

Images:

1. Edie...wait they have tiny seeds.
2. Libi investigates the pine cone.
3. Harvey and Ben work in construction.
4. Using loose parts.
5. Mai drawing in an order.
6. Ness and spiral curl.
7. Ezra saying it goes this way and that way.
8. Creating a spiral in a social context.
9. Zac and another language



Prep

Let's start at the very beginning...



“

Today, in the busy world we live in, we crave stories that have meaning and wonder. What better story than ‘The Creation’ of our world?”

Esther Takac in her book, ‘The Book with Seventy Faces’ explains that the bible, the Jewish Torah, is like a person with seventy faces, so that every time you look at the Torah from a new direction you see another aspect, giving one a different perspective of the story. This idea can be compared to life too. She describes the Torah as being like a game of never-ending ‘pass the parcel’ as there is always another layer underneath to be unwrapped.¹

How does all of this relate to our Prep students at Bialik College?

Every week the students celebrate Shabbat utilizing the ‘symbols’ of Shabbat. Forming a deeper understanding of the concept of Shabbat might be achieved by exploring the days of The Creation. We hoped this would clarify the order and the progression of the days leading up to Shabbat – the significance of the seventh day as a day of rest.

בראשית ברא אלוהים את השמים והארץ

These are the very first words in the bible meaning: **In the Beginning, God created** the heavens and the earth. The fact that the bible states ‘In the beginning’ indicates that this is going to be a process of an evolving transformation.

The parents were asked to send in the earliest photos of their children. The photos were laid out on the carpet in the classroom and at times, the children themselves did not recognise their own photos. We discussed how they had changed and grown over the years. The children were asked what they understood by the word ‘Beginning’.

It is a special word and this was the beginning of the whole world.

What do you think the baby would have felt as a newborn?

The baby would feel surprised and think ‘What’s happening here?’

The baby would be happy to meet it’s mum and dad.

The baby would need to be brave for it’s new beginning.

I think that ‘Beginning’ also means change. Look how I’ve changed since I was a baby – I didn’t even recognise myself.

Some of the children were beginning to realise the relationship between Creation and Transformation, even at this early stage. The next concept that we focused on was תהו ו'בוהו' – meaning chaos and without form. When the students came into the classroom, it had been turned ‘upside down’. – the chairs were upside down; the blocks and pencils were scattered on the floor and the classroom was a mess. The children’s reactions were interesting and varied.

What is this mess and who did it?

I don't want to sit here in this mess.

We wrote the words: Tohu Vavohu – תהו ובהו on the whiteboard and explained that it meant a mess, chaos, no order, a 'balagan'. We asked the children how they felt about the mess in the classroom. It was explained to the children that this is what school would be like if there was no order and admitted to making the mess in the classroom in order to explain the concept of 'Tohu Vavohu'. The class was asked the question: What can we do to make ourselves more comfortable in the classroom? The teacher and the children then cleaned up the classroom and the children commented...

That's so much better.

The idea of the children experiencing what they had learnt was of great significance as this would lead to a clearer understanding of the concept of change and transformation.

The next example of experiential learning was intended to lead up to the biblical concept of the creation of 'light'. 'Yehi Or' – Let there be light.

The children were blindfolded and were encouraged to move around the classroom. When their blindfold was removed, the children were asked how they felt in total darkness.

I felt scared and uncomfortable.

I felt like a blind person, but a blind person would have a stick or a guide dog to help them.

I was thinking what the Egyptians might have felt when God sent the plague of Darkness. I think that even Pharaoh bumped his head a few times.

(teacher) So what would you need to feel more secure and less scared?

Light!

The teacher then read from the Torah 'יהי אור' – Let there be light... and there was light.

The next focus was on the biblical concept of the separation between the waters below and the waters above the ground. The

question was asked: Why do you think that God needed to separate the waters above from the waters below?

God had to cut the 'balagan' (chaos) in half. God wanted us to know that there is water above in the sky and below on the land, just like He separated Night and Day.

I think that God made the waters in the sea, but the weatherman decided if there will be rain or not.

Moses also did this. He separated the sea and there was water on both sides and land in-between.

Yes, but if Moses did that, what about the water in the sky above?

It didn't rain on that day.

After this debate which highlighted the depth of the children's thinking, the class watched an experiment where the teacher took a bottle and added some water, blue dye and oil. The children shook the bottle to mix the ingredients and after a short time the children saw that the darker blue was on the bottom (like the sea) and the top colour was a lighter shade of blue (like the sky) with the oil floating on the water. The question was:

What do you think you know about this?

You're trying to show us what we just talked about.

Sometimes when you mix 3 things together, it can make an explosion. This was part of the explosion when God made the world.

God was getting ready so that we can survive.

Yes but He hadn't created people yet.

Well, He knew He was going to. He was planning everything before so that everything was ready for the people.

I don't believe that God created the world. I know that there was an explosion. My mom and dad don't believe in God and neither do I.

It is important not to allow our preconceptions determine the range of the children's own curiosity. It is so important to give the children opportunities to think, dream, speculate and imagine. We are hoping that as the children get older they will grow into their own



Fig. 1



Fig. 2



Fig. 3

understanding of the existence of God. Judaism is a faith of action, perhaps the 'God' within us is love and goodness.

We also shared our thoughts with our colleagues and we wondered: Should a Jew believe in God? In a sense it depends on how you define the four words: 'should', 'Jew', 'believe', and 'God'. In short: Probably. And probably not.

Let's go back to The Creation of the world...

God said: Let the earth grow grass and plants and fruit trees of all kinds.'

Maybe nature is God because it is so precious.

It isn't God, but it's part of God.

I think I would rather believe in nature, but I still don't believe in God. (this was the same child who introduced the idea of his belief in evolution.)

It was important for the children to understand that all of their observations were valued and that they were not being judged.

Next up – The biblical concept of the creation of the sun, the moon and the stars. The children were asked what the difference is between the light that was created on the first day of The Creation and the lights that were created on the fourth day, namely the sun, moon and stars.

The first day God just wanted to see a little bit so that He could make the world, but on the fourth day it was a much brighter light.

The first day God made a kind of light, but it wasn't warm, but on the fourth day the sun was warm and it gave light.

The children listened to the story 'The Apple Tree's Discovery' by Penina Shramm³. and were asked:

What other kind of light can we experience?



Fig. 4.1

With a little coaxing, they spoke about the light inside each one of us. At this point, under the teacher's instruction, each child looked at a friend in the class and said: *The light inside _____ (child's name) is that helshel is kind, a good friend, helpful, likes to share, is caring, funny etc.*

At this point we discussed the different functions of the lights and the idea of the hierarchy of the sun, the moon and the stars. In Hebrew, another name for the moon is 'levanah' which means 'white' and another name for the sun is 'chamah' which means 'hot'.

On the last day of The Creation, the day before Shabbat – the day of rest, we took the children to the sandpit and asked them to create a man out of the sand. We had visions that the children would build a 'man' using sand. One child tried this and his 'creation' collapsed. The children worked out another way. They used one child to lie down in the tanbark and drew an outline of the shape of their body.

That's better and we still used nature to make a person.

It isn't a real person, it can't see and talk.

Maybe God thought of a few different ideas before He got it right.

As educators, we have witnessed valued discussions that have taken place amongst the children, without any intervention from the teacher.

The next time we celebrated Shabbat at school, we revised God's Creation of the world with the children and what was created during the six days. We asked the children: How do you think God felt viewing His completed world?

He felt proud of himself.

He liked what he made.

He was so tired.

And so we need to rest when we're tired, so did God, hence Shabbat, the Sabbath.



Fig. 4.2

'So do you think it ended just like that on Shabbat?'

Maybe.

I think that God had a big rest... and gave some of His jobs to Adam and Eve.

Gunther Plaut, a Rabbi, and author on theology, history and philosophy wrote about the ongoing pattern of creation:

"Being is better than nothingness, order superior to chaos, and man's existence – with all its difficulties – a blessing. But creation is never called perfect: it will in fact be man's task to assist the Creator in perfecting His creation, to become His co-worker."²

And so the world was created with harmony and balance. There was balance between light and dark; the sea and the land; the sun, the moon and the stars. However, today the world is minus some of that harmony and balance. The forests have been cut down, the oceans have been polluted. People don't even live in harmony with each other. Man is the only one who can fix this. An ancient Hebrew phrase calls this 'tikkun olam'; *fixing the world*. Maybe this too is a form of transformation... Man will now take over whether we believe in a God or not, whether we are good citizens or not, whether we have the intellect to create or not, freewill prevails. The thought has arisen: have we ended our game of 'pass the parcel'? How many more layers do we need to unpack? Well, perhaps that is a whole other investigation, and although this is a cliché, the end is only another beginning.

References:

1. Esther Takac –Published by Pitspopany Press 2008. "Genesis – The Book With Seventy Faces: A Guide for the Family."
2. Gunther Plaut, *Genesis, The Torah* (New York: Union of American Hebrew Congregations, 1974), 11.
3. Peninnah Schram, Rachayl Eckstein Davis, "The Apple Tree's Discovery". Kar-Ben, 2014



Fig. 5.1



Fig. 5.2



Fig. 6

Images:

- Fig. 1 A group of children surprised by the 'balagan', (a Hebrew word meaning disorder), in the classroom.
- Fig. 2 Children blindfolded to experience the world in darkness.
- Fig. 3 The experiment to show how God may have separated the waters above and the waters below.
- Fig. 4.1 & Fig. 4.2 The children drawing creatures of the sky, dry land and water and labelling in Hebrew.
- Fig. 5.1 & Fig. 5.2 The children trying to 'create' a man out of sand and tanbark.
- Fig. 6 Prep children celebrating Shabbat at school.

Korus change, and I change



“

As educators, do we move children on too quickly? Are there missed opportunities to truly deepen knowledge and understanding? Can one task and its revisiting in different ways provide multiple learning experiences?”

Beginning my journey at Bialik College I had not had many opportunities to dabble into these ideas. However, as the year has unravelled so has the development of my personal teaching philosophy.

“One can learn to see instead of just look: this is valuable practice for developing a sensitive visual education”. (Carla Rinaldi)¹

As Prep A embarked on a transformation of our learning environment the children were posed with the question ‘what transformation meant to them and their peers.’ We decided to use clay as a provocation to share their thinking and they developed rich and meaningful threads:

Things are changing

We might transform. If you don't like something, you can change it

Transformation never stops. You change something into different things all the time

To me, it means when you have something, and you change it

Change... a word that rang true to my New Zealand background. We have a Maori symbol named the ‘Koru’.

“A spiral shape based on the appearance of a new unfurling silver fern frond..... where it symbolises new life, growth, strength and peace.” (Charles Te Ahukaramū)²

This symbol soon became the focal point for our investigation. We spent time unpacking the meaning behind the koru shape. The children observed and drew our classroom ferns, spotting the koru design. We discussed the koru as an image.

The koru starts small and then they turn and get big.

They are smaller and curl up and then they get bigger but slowly.

On the korus there are tiny little leaves.

There are little spikes that are all round the koru.

The class explored korus using different languages including paint, pencils and clay. At first, the children created their koru in minutes. It appeared they had mastered the skill of making the koru shape. At this point my overall teacher judgement was indicating it was time to move on. The children had achieved the success criteria however, I questioned myself... was there more we could learn from the koru? and why was the engagement of this learning experience increasing, growing?

“Many classroom practises are simply not aimed at supporting and revealing the depth and complexity of student learning.

Like the tip of the iceberg, they provide only glimpses into what lies beneath the surface.” (Mara Krechevsky, Ben Mardell, Melissa Rivard, Daniel Wilson)³

We discovered that the routine of ‘sharing time and gallery walks’ had enabled the children to see more than a simple spiral shape. The power of reflection, feedback and revisiting was the driving force for this particular investigation to continue. The children felt listened to and respected and therefore competent in being part of group discussions.

When I look at other people, koru it helps me learn and remember for next time

You can look around and get different ideas

You learn from other people, how they do their koru

I could see that this reflection was authentic, it was more than just a ‘show and tell’. This experience stimulating their learning and development.

“Supporting children’s reflections in their learning processes is key in nurturing their capacities to learn together. Making the learning processes of a group enhances children’s metacognitive awareness of how to learn from and with one another.” (Mara Krechevsky et al)³

As our investigation progressed further the children discovered that they could not only use ideas from their friends, but they could also work together to connect their ideas. The children began to choose to work collaboratively on a koru project.

Can I make a koru here? (on light table)

You need to follow the plan

We need to tell each other what do do

Do you know my way of connecting...? I do this

“Members of learning groups learn with one another by modifying, extending, clarifying and enriching their own ideas and the ideas of others. In such groups, learning is purposeful, social, emotional, empowering and representational.” (Mara Krechevsky et al)³

The koru started to become embedded not only in the children’s learning but their everyday life. We started seeing koru hands in drawings of people, food shaped like koru, letter boxes and even on animals. Siblings started taking interest, taking part in koru drawing at home. The children got empowering satisfaction out of sharing these experiences with their peers. Their peers responded with interesting questions and insightful wonderings about these experiences.

I started to wonder what our parents’ interpretation of the koru was. Did they see the impact it was having on their child? Would they have another lens we could investigate from?

We took this to our parents by sharing at our parent night.

“Sharing these artefacts of learning with other students, teachers, and family members often provoked new understandings, curiosity, surprise and delight.” (Mara Krechevsky et al)³





Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8

An insightful wondering was posed...

How do koru connect to real life... the bigger picture?

And as promised this opened a door to a new perspective and lens on our investigation.

We took this wondering to the children. What does the koru mean to our real life? What have we learnt from it?

The children's responses reflected back on the ideas of change and growth. It was apparent that this was a key understanding in their thinking. So we asked...What do you think of change and growth then? What does that mean to you? The children discussed and drew their thinking:

Change is growing, the koru grows

Koru can change, it can be with colours or it can be all black

It means when your whole body is changing from small to big

Koru change, and I change

The koru patterns are changing

This is the koru growing up

Koru get bigger when they grow. They are changing

The children reflected directly back to the koru. Through identifying the changes that a koru makes and unpacking its meaning they were able to make connections on their own physical growth.

Our investigation had enabled an extraordinary transformation of the children's thinking about change and growth. Through the shared goal of investigating the koru, the meaning to the life of school and how we are learning to learn could flourish into something empowering and memorable.

How does this understanding about change and growth connect to us? How will we use it for transformations in our future learning journey?

Referencing:

- Rinaldi, C. (2016). *The Hundred Languages in ministries*. 3rd Edition. Worcester, Massachusetts: Wyatt Wade, Xiv.
- Royal, Te Ahukaramū Charles (March 4, 2009). "Māori creation traditions". *Te Ara – the Encyclopedia of New Zealand*. New Zealand Ministry for Culture and Heritage / Te Manatū Taonga. Retrieved 14 March 2010.
- Krechevsky, M. Mardell, B. Rivard and M. Wilson, D (2013). *Visible Learners*. San Francisco: Jossey-Bass, p 51.61.63

Images

- clay koru
- koru design out of odd parts
- Light table
- sticks and rocks koru presented to parents on 'Share our learning' evening
- transferring light table koru image into clay
- one of many koru found outside of school
- transferring light table koru onto projector
- fruit and vegetable koru

Prep J

Transformations over time



“

Time [tīm] noun: Our allocations of periods of time reflect our values. Our sequencing of events, construction of moments, and reflections on actions allows us to scaffold and draw a connecting thread through learning occasions to create a unity.”

(Harvard Project Zero)¹

From the very first day and always at the same time each morning, Prep J students sit together in a circle of inclusivity and meditate. They take the time to concentrate and are mindful of their breath. They notice the cool air moving across their nostrils filling their lungs, as their belly moves in and out. It is a time to feel calm, a time when they can collect their energy ahead of the day's events, and a time where they are entirely self-aware. (Fig. 1)

I feel calm and everyone feels calm.

I feel good and relaxed for the whole day.

I feel like the whole world is calm and I just feel like it is just calm.

With this sense of calm, the effect on our classroom as a living environment within “the whole world” transforms. Upon closer inspection one can see that our students continually create the space within their classroom to reflect their needs. It is “**more than the physical space, it includes the way time is structured and the roles we are expected to play. It conditions how we feel, think and behave, and it dramatically affects the quality of our lives.**” (Craig Hassad)²

Looking back to when the concept of transformation was first introduced, this new word was met with a sense of mystery. We



Fig. 3



Fig. 2



Fig. 3



Fig. 4

wondered how we could explore this concept. As it was early days in Prep many students requested to visit their previous kinder teachers and so we used this as a platform to begin our investigation of transformation. After playing some games and singing songs with the Kinder classes, some students reflected on how little the new Kinder children were. We asked, “What makes you think that?” and challenged the students to gather information as a group. (Fig. 2)

I used to be in Kinder 3.

We’ve changed a lot.

I am taller now.

After discussing these observations with our team, we created carefully placed provocations to invite students to interact with their new Prep classroom environment. For example, a roll of paper with pens provided an opportunity for students to trace around their bodies so they could compare themselves at a later date. Another time, students compared the height of their shadow with their true height using informal units of measurement at different times during the day. According to the Victorian Curriculum and Assessment Authority “**The proficiencies of Understanding, Fluency, Problem Solving and Reasoning are fundamental to learning mathematics and working mathematically...**”(Victorian Curriculum)³ These experiences allowed students to adapt and transfer their understanding of the mathematical concepts of measurement. (Figs. 3 & 4)



Fig. 5



Fig. 6

Initially the concept of transformation was seen through the languages of mathematics and science. Loris Malaguzzi, founder of Reggio Emilia’s educational philosophy once said, “**Children need the freedom to appreciate the infinite resources of their hands, their eyes, and their ears, the resources of forms, materials, sounds and colours.**”(Loris Malaguzzi)⁴ We wanted to provide more opportunities for students to deepen their thinking and own their wonderings about transformation using materials.



Fig. 7

And so we started our discovery with clay. (Figs. 5 & 6)

How could clay help them create meaning and build relationships while exploring the concept of time and how it transforms?

The provocation of a slab of clay was a new experience. Simply looking at it and touching it evoked different emotions for each child. Some eagerly reached for the clay while others were hesitant. Some shared their prior knowledge and their feelings.

I'm making a ball.

This is amazing. I know how to make this. I love clay.

I made this in my kinder.

This one isn't connected and it's very hard. It goes hard after.

Students were given the time to freely explore this material. While documenting their experiences we came to see that our students were developing a true sense of community. They were getting to know one another through listening and constructing new possibilities that might not have been created independently, all the while by working together to solve problems in a calm manner.

Recently students were offered a selection of paints, brushes, empty containers and water. Small groups of students were asked to focus on the items on the table and to share what they could see, what they thought they knew about these items and if they had any questions or wonderings. (Fig. 7)

We were curious to know whether our children would approach these questions by reflecting on their experiences this year with graphic languages and with science and mathematics. What would their focus be? Would they make connections with the umbrella concept of transformation? Would they now use the language of paint to express their ideas of transformation?

These were some of their initial thoughts:

I wonder why these bottles aren't the same as those.

I think they poured the same paint as those.

You can mix them.

Maybe it makes a colour.

Try it out to see if we are correct.

That colour turned a different colour.

Our students painted the colours they made onto a colour chart.

Prep J students continue to create meaning together in the studio. They are developing their relationships knowing they are in a place that is theirs and with this time our students continue to explore and communicate their ideas and reasoning. **“Connections that take place between time and space happen through the rhythms of everyday life, connections to past events, and new experiences that reach toward the future.”** (Lella Gandini)⁵

My own questions are replaced with new understandings and new questions each day. We continue to document our students as they transform.

“All enquiry and all learning is but recollection” (Plato)⁶ wouldn't you agree, as Malaguzzi observed, our **“children love to learn among themselves”**? (Loris Malaguzzi)⁴

References

1. Harvard Project Zero. (2016) *The 8 Forces That Shape Group Culture*, Retrieved from http://pz.harvard.edu/sites/default/files/cot_8ForcesThatShapeGroupCulture.pdf [Accessed 18 September 2018]
2. Hassed, C. and Chambers, R. (2014) *Mindful learning*. Wollombi, Exisle Publishing.
3. Victorian Curriculum (2018) *Foundation Level Mathematics*, Retrieved from <http://victoriancurriculum.vcaa.vic.edu.au/foundationlevel?layout=1&d=M> [Accessed 18 September 2018]
4. Edwards, C., Gandini, L. and Forman, G. (2011) *The Hundred Languages of Children*. 3rd Ed. Westport, ABC-CLIO. pp333.
5. Gandini, L., Hill, L., Cadwell, & Schwall, C. (2005) *In the spirit of the Studio*. New York, Teachers College Press.
6. Plato – Jowett's translation (1892) *Dialogues in English: Meno*, 81C. 3ed Ed., Oxford University Press.

Learning how to learn



“

Current research is showing that our brains transform constantly with learning and experience and that this takes place throughout our lives. This research suggests that practising something doesn't just make it easier, it actually changes the brain.”¹

Does this have implications for students' motivation and learning? Many researchers believe it certainly does. Research suggests students who understand the importance of persistence and practise in their learning journey as well believe that they can change they can 'grow' their intelligence and are more successful learners.²

Our year began with the provocation of transformation. Children, teachers and parents shared their initial ideas of what transformation meant to them. A common thread between many of the ideas was the idea that we could transform ourselves.

The mistakes are transforming. (Fig. 1)

I am transforming from a little girl to a big mummy. (Fig. 2)

The children saw themselves transforming physically and some saw how their ideas and thoughts could transform. We decided to explore this idea further.

We initially asked the children how they might transform themselves as learners and how they learn.

I need to listen to my teacher

I should cross my legs when I am sitting on the mat.

Our initial conversation showed that children had quite a limited understanding of how they learn so we decided to introduce them to some of the research of Carol Dweck who is best known for her research into the idea of 'Growth Mindset'. Dweck found that students who believed their intelligence could be developed (a growth mindset) outperformed those who believed their intelligence was fixed (a fixed

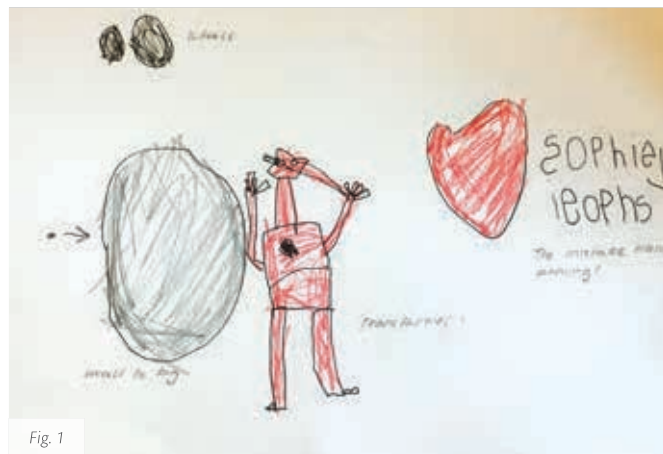


Fig. 1

mindset). She believed it was the role of educators to teach their students that confronting challenges, profiting from mistakes, and persevering in the face of setbacks become ways of getting smarter.²

Dweck also found that teaching the ideas of growth mindset alone was not as beneficial as teaching children what happens in a brain when it is learning. This information gives the children more evidence that they can transform their intelligence. We began to explore this idea. The children used a variety of materials to explore their theories about what happens in the brain when you learn. (Fig. 3)

Some children decided to use clay to create their ideas of how we learn. They created models of what they thought the 'brain looks like when it is learning'. (Fig. 4)

The brain is trying to spell the word 'is'. The holes help me think. All the things I know are inside the holes. Once I learn things they pop out and go along the lines.

The lines are all the thinking. The brain in the shape of my head.

The bit on the e nd controls your brain. Your brain is electric. That bit is like a plug.

My brain is thinking about making friends. The lines are for sending messages.

The children debated their ideas in small groups. One group proposed that the size of your head determines your intelligence. They began to test their theory by measuring each other's heads. (Fig. 5)

When you make mistakes your brain gets bigger and your head gets bigger.

That means they must be the smartest.

Actually she has the biggest head.

How can we prove who has the biggest head?

We can use the tapes.

Children measure each other's heads.

How come Rachel (the teacher) has such a small head?

She (student) has the biggest. She must be smart.

She must know a lot of things.

Many of the children went home to further discuss with their families this link between the size of their head and their intelligence.

My Dad said it is true. I am still unsure. Are elephants really smart?

Every few weeks we met as a whole class to bring our ideas together. This was a good time for us to reflect on our learning



Fig. 3



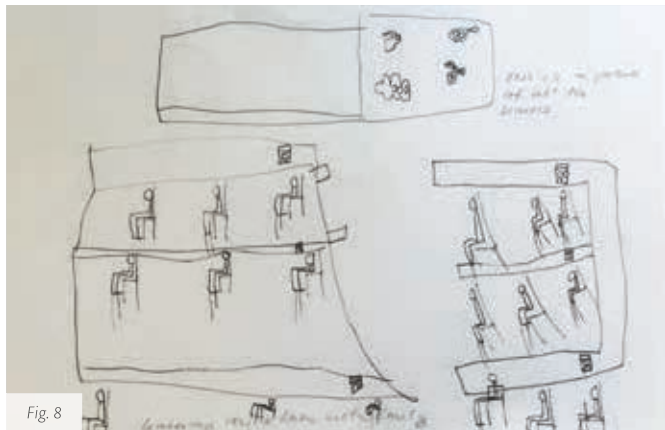
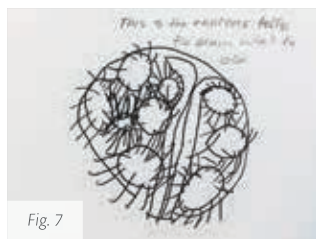
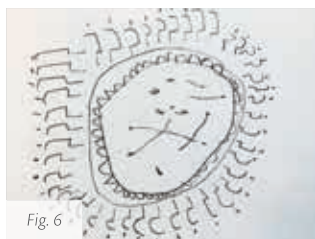
Fig. 4



Fig. 2



Fig. 5



and for the children to add to each other's learning with further questions. During this time, we often provided further provocations hoping this would continue to push their curiosity.

During a recent group meeting we showed the children some other research into growth mindset. We showed the children some research which investigated the development of the brain of two different groups of animals. They found that animals who lived in a challenging environment, with other animals and toys to play with, were different from animals who lived alone in an unstimulating environment. The animals in the more challenging environment had more connections between the nerve cells in their brains. The connections were bigger and stronger, too. In fact, their whole brains were about 10% heavier than the brains of the animals who lived alone without toys. The animals who were exercising their brains by playing with toys and each other were also "smarter". They were better at solving problems and learning new things.³

With this understanding the children were able to continue to develop their ideas and theories about what happens when the brain learns. The students' ideas began to deepen, and their questions and curiosity also began to develop. (Figs. 6 & 7)

I know when I make a mistake my brain gets stronger.

These are the cells they are connecting by trying stuff really hard.

We decided to further explore the children's ideas by visiting our senior school science teacher, Emily. Emily spoke to the children about some of the science behind what happens in the brain when we learn. She also showed the children a real sheep's brain and spoke about the role of different parts of the brain. The children were full of questions and wonder. (Figs. 8–11)

Who controls you, you or your brain?

So, has this understanding of how the brain learns empowered the students and influenced their overall learning and motivation. Absolutely. It is clear by their daily interactions and comments that they now have a greater appreciation of persistence and practice in their learning journey. Furthermore, they have a broader understanding of different strategies to help them learn.

Some of the children decided to make a book for others about 'how to transform your brain'. In the book they give suggested strategies and ideas on how to learn.

Ask for help.

Try again and again.

Try a different strategy.

As the children's learning journey continues, we hope that they will foster and develop these positive learning dispositions. We wonder how we can support them to deepen their understanding in a way that ignites their curiosity and interest.

References

- 1 Stevens, A (2014) Learning Rewires the Brain. Available at: <https://www.sciencenewsforstudents.org/article/learning-rewires-brain> [Accessed on 29 September 2018]
- 2 Dweck, C. (2015) Carol Dweck Revisits Growth Mindset. Available at: <https://www.stem.org.uk/system/files/community-resources/2016/06/DweckEducationWeek.pdf> [Accessed on 29 September 2018]
- 3 Khan Academy (2014) Growing your Mind. Available at: <https://www.youtube.com/watch?v=WtKJrB5rOKs> [Accessed on 29 September 2018]



Year 1

“Helping the
object, reimagining
the known...”

Bruno Munari

“

Throughout our yearlong investigation, exploring the concept of ‘transformation’, interest and research in this has captured both educators and students alike.”

The use of the word and its applications in various investigations this year has added to our understandings that there can be multiple meanings and, given time to revisit, we can reframe our thinking. As educators, we continue to ask ourselves what does this investigation mean to us and how will this focus have value and impact on students thinking, actions and transference beyond the classroom? This has always been our premise within our pedagogy. Is the focus worthy of an investigation? Will it offer authentic learning experiences, skills and strategies for current and future learning for our students to look within, around and revisit.

Our Year 1 cross class groups are an opportunity for investigation in a larger studio with an arts educator where students can share deep thinking and exploration with peers beyond their classroom cohort. The proposal for these sessions this year was to focus on the relationships between historical context, scientific research, mathematics and the arts as a platform for uncovering other meanings of ‘Transformation’.

What and how does change occur?

How is it represented and how might it change our thinking at a particular time?

Whom are we representing this for and what do they understand by these representations?

How do we skill the students to offer them more in their toolbox?

How do both digital technologies and traditional skills embed in these investigations?

The sessions began with the provocation of relooking at everyday objects, the concept of loose parts and reimagining these materials that were reassembled and transformed into new structures. Well-known artist, Louise Paramor, featured this concept in a large exhibition of assemblages. Her small maquettes as well as very large constructions used both domestic and industrial plastic forms. I participated in a workshop with Louise at the beginning of the year to understand more about her focus and decision-making at the National Gallery of Victoria (NGV).¹

In viewing some of her colourful assemblages, I wondered if the students would be aware of the source of the parts used in these structures, and so their transformation, or would they only see them as they were presented now, as colourful 3D forms?

It has been stated that Paramor’s, “fascination with the dynamic between the viewer, an object and its environment extends beyond

the realm of what's immediately apparent.. Paramor reflects on her choices in these assemblages, "I see much more potential and possibility in things that I thought at first were just existing for their own sake." Paramor's plastic assemblages and very large paper structures offered the students an awareness of such works around them in the everyday. Her larger structures can be seen when travelling on the freeway down to the Victorian peninsula and in public spaces. Paramor adds that **"Sometimes you can distinguish the different parts and that always interests people,...the objects dictate to me how they should be arranged so I lose sight of the origins of these parts, but people, when they see them, they get a kick out of noticing elements that remind them of things that they might have once had, or used, or currently use now."** (Nicholas Carolan)²

The students, although not recognizing all the parts presented to them for exploration, were very interested in the types of materials, shapes and how they might connect parts. At this time, we ventured into our school's 'Centre for Hidden Treasures'; a name coined by students when the Centre first opened because to them this area, that stored a plethora of material offcuts, represented treasures. (Fig. 1)

The students collected items in their baskets of what they might add to their own assemblages. It was at this time I organized a meeting with our numeracy coach, Rebecca to discuss the investigation of 'Transformation' and its links to this year level's math's focus of 2D shapes and 3D objects. We continued to meet during the investigation to share possible directions lending itself to a math's lens. The student's 3D assemblages were transformed into 2D observational drawings of their constructions then transformed again using coloured paper shapes. The process of revisiting, moving 'in and out', 'there then and here now', had moved on from what the material used to be to their newly created forms and designs. In his research in the learning of mathematics, Abraham Arcavi speaks about the role of visual representations, **"As biological and as socio-cultural beings, we are encouraged and aspire to 'see' not only what comes 'within sight', but also what we are unable to see... both as a 'noun' – the product, the visual image – and as a 'verb' – the process, the activity"** (Alan. J.Bishop)³ (Fig. 2)

Our learning environment flows out beyond the classrooms into open areas where problem solving, testing of theories are evident and encouraged to remain for long lengths of time and to be revisited. The concept of classroom learning has indeed been transformed where we have access to virtual classroom learning opportunities. During several Skype sessions with an educator from the NGV in both the International and Australian galleries the cross-class groups were able to step inside thought provoking exhibitions which were intended to add further provocations in relation to Transformation. In consultation with the gallery educator prior to a session, these early morning online sessions with the gallery were viewed from our school theatre. The first of these sessions featured works from the 'Triennial' exhibition, which exhibited over 100 artists and designers from 32 countries, who explored the themes of Movement, Change, Virtual, Body and Time. Our focus was to view the transformation of the use of everyday materials where the producers used "cutting edge technologies,



architecture, animation, performance, video, painting, drawing, fashion, design, tapestry, photography..."⁴

We had informed the NGV educator via emails and phone conversations about our year's investigation focus and together we selected installations that would be viewed and discussed specifically to promote students thinking about the wider ramifications of transformation in a global context. By using an iPad to conduct Skype sessions, the educator was able to provide explanation of some of the works while zooming in and out of these works, so the students could see the use of devices by artists, sculptors and designers who created various illusory effects. This required the viewer to ponder and think about the materials and devices and to relook and rethink. These sessions were extremely engaging for the students who chatted with familiarity to the gallery educator during discussions and he was able to respond to questions they had about the exhibition. These learning experiences promoted curiosity and reflective thinking.

I was surprised that the room with the flowers was empty and then it transformed into a flower area over everything.

I thought that it was cool when Daniel walked into the dark room and the pattern on the floor was tracing where he was walking.

I was surprised because when he was walking in the room of the picture with the train, the train was moving, and the picture was not.

An excursion with parents to this exhibition further clarified for the students some of their wonderings, curiosity and in some cases a belief that something was possible. The exhibition also highlighted the unconventional use of materials, transforming and pushing the boundaries of thinking with these materials. The intent of this excursion was for students to relate to these exhibits with their prior schema, knowledge and to discuss with their parents. Several parents informed us that their children had insisted they return to the exhibition with their families and their child became the tour guide discussing what they had explored both in this investigation at school and during the excursion with their group. Students documented their observations from the excursion through drawing and writing about the exhibits and recording and filming using an iPad. This documentation was also revisited with their class teachers. (Fig. 3)

When you walked, the lights followed you. It was like playing chasey with all the lines.

The carpet was actually wool because you could visualise the image in the mirror.

Another provocation was proposed of numerous plain wooden 3D small shaped blocks, arranged on the table and sorted into kinds



and sizes – cubes, cylinders and cuboids. The intent was for students to enter with an element of surprise and wonder. We wondered if the students would be thinking about what these forms reminded them of and what they might bring to the group. On this occasion, by removing the element of colour, which is often an easy identifier of an object (as was seen with the objects used by Louise’s plastic construction), we wondered what the students’ relationships with these new materials would be. Given that our students had an assortment of large wooden blocks available to them daily for them to construct, would the vast array of similar objects in the studio, albeit much smaller in size, provoke another transformation?

What were the student’s thoughts and would they in their thinking mentally transform what each object could represent:

I think this is phenomenal!

Phenomenal?

Yes, good balance and phenomenal means infinity done, well done.

I can see different shapes of wood, longer and higher made from the same tree.

Some are wide, tall, skinny, light.

Different sizes because if you see closely – more amount of pressure on the higher one than the others. The wood is high, very big and some are small and medium.

Some are on the side and low.

Most are pale on the top.

In the middle, they look like trees. You can jump tree to tree.

You mean with a zip line.

On top, not triangles, only shapes.

You mean circles and rectangles?

They could represent people.

Represent?

Represents means something new.

Well this could be a forest with trees?

Places and hundreds of trees.

It could be a city with people.

The students spent time assembling and reassembling these materials. They photographed and recorded their observations, on one occasion using a drawing and painting app on the iPad. They had other drawing and recording tools available and were encouraged to observe and capture different views. We had an iPad set up in iMotion to record, over time, the changes in their construction. The students were able to watch these film clips and view these transformations. (Fig. 4)

We continued to explore the representation of the concept of transformation with fluidity from 3D to 2D and 2D to 3D developing an attitude of possibilities.

The opening of ‘The Field Revisited’ exhibition at the NGV marked the 50th anniversary of a 1968 exhibition of young Australian artist “in the first comprehensive display of a colour field painting and abstract sculpture in this country “at the then new NGV in St Kilda Road, Melbourne. This exhibition now relaunched at NGV Australia.⁵ This exhibition of colour, shape and pattern in a range of works offered our students an opportunity to think about the concept of ‘then, there, here now’ with a strong mathematical focus on patterning, as well as shape. We further researched opportunities and provocations to extend this investigation focus. (Fig. 5)

Via another Skype session with the NGV about this exhibition, the students showed interest in what to them seemed an impossibility of structures including the balancing of large white wooden beams, or the illusions created in paint giving the effect of 3D cubes protruding from the canvas.

The constant shift in thinking and experimenting with shape and form on different surfaces and using different materials and tools was extended with the introduction of a small spherical form known as Sphero SPRK. This spherical robot could be coded and controlled using an iPad app. and was introduced to the students to use with paint by navigating the orb across a large white sheet of paper. The orb itself could change to shades of various colours, which began as a novelty and as time passed the students discussed how they would direct the orb to move through paint they had placed on the paper, creating a complex division of colours on the square surface. Each group added their own colour and direction. Many skills and much knowledge was acquired during this provocation and interestingly the students planned for a further colour and shape canvas where they would use the orb to create an outline of shapes and they would add to it themselves using brushes and paint. (Fig. 6)

As an ongoing learning experience in the studio, the students explored other perhaps more traditional materials that they had been familiar with since kinder such as clay. Their familiarity with this material gave them another language, so to speak, to construct other 3D forms showing the relationships between the material and the fashioning of an idea with it. The students viewed large geometric shaped sculptures by English sculptor Barbara Hepworth. These large monumental sculptures were positioned in large fields and parks, illustrating the

relationship between forms in nature. This was to be a thread of discussion, and through a continuing historical journey highlighted the innovation of the time and the revisiting of what 'came before'.

Artist and designer Bruno Munari discussed, **“helping the object, reimagining the known...”**⁶

Thus far we had explored those who proposed the relooking at the everyday objects and our surroundings; our relationships with it; the flipping of what we know; and searching for the reshaping of our 'knowns'. (Fig. 7)

It was during the 'Triennial' exhibition, where various dance groups featured in and around the exhibition spaces in the gallery both in relation to the exhibits, the surrounds and the public. I viewed an extraordinary performance of what appeared to be people coming together from different areas of the forecourt, each wearing everyday wear including suits and casual clothes, and each doing a repetitive action. Their bodies moved to a beat of sounds as well as their own repetitive chants. As they moved to the sounds, being cognisant of their position in the group, they methodically became a moving shape of one and then of many. This continued until they gradually dispersed. A well know Australian choreographer and former Artistic Director of Chunky Move, Gideon Obarzarnek has spoken about his groups performances as being **“more about a desire to find a greater purpose than one’s individual self in the world and wanting to be part of it which sometimes happens in singing in a choir, dancing, cheering in a football match. Momentarily leaving your own sense of self and becoming part of the great thing going on. All the things we are working with in a way are just things we all have... emulating nature in a way through dance sequences.”**⁷

The students understandings thus far had explored the transforming of everyday objects which were reassembled, redrawn, and concepts restructured in both 2D shaped designs and 3D forms using clay, paper, cardboard and plastics. The relevance to the 'known', is it something we are all seeking, a default so to speak. Titles and description of these structures that the students viewed were often described in relation to human qualities or to nature. We now moved to the concept of movement, light and sound, using shadow screens and various light sources. This we did in consultation with our schools lighting engineer. The intention of this provocation was for students to explore the projections of their own choreography of movements, to experiment and learn about their shadowed shapes in relation to the distance from the screen and the light source, both in a group and by themselves. This provocation engaged the students to discover their unknown shadow projections and what they themselves could change in the way they moved to the rhythm of the sounds of music.

Some students used iPads to photograph and film these shadow dances and all the students were curious as to the effects they created when watching these film clips. This provocation culminated in a group performance at the end of school year celebration, traditionally an evening of song and dance. This performance comprised class groups, each of whom would use these explorations to combine a performance highlighting another understanding of 'transformation'.

During this investigation, the intent was to be multi-disciplinary. A meeting was organised with our sports teacher, Mel Woolhouse,

seeking her input. I shared the documentation of this investigation and the intended direction with the resulting performance. Many thoughts and ideas were explored during the lead up to the final choreography. Body movement and spatial awareness is something that is an integral component of our ELC physical education program. So too were the props we had been using such as shadow screens used with overhead projectors. We also discussed our plans with a colleague who had expertise in dance choreography. Students moving behind shadow screens with changing colour light projections; using colourful pieces of stretchy fabric held by pairs of students moving to the rhythm of the music; and another group forming shapes by repetitive movements completed the final choreographed performance. (Figs. 8 & 9)

On reflection, the intent of this investigation was and continues to be the awareness of ourselves in relation to our environment. Awareness of change, awareness of the effects one has on change and being able to use all of one's senses to reimagine, reinvent, transform.

References

1. Paramor, Louise. Available at: <https://www.ngv.vic.gov.au/exhibition/louise-paramor/> [accessed 27 /1/18]
2. Carolan, Nichloas. <https://grazia.com.au/articles/sculptor-louise-paramor-ngv/> [accessed 23 /2/18]
3. Bishop A 1989 Review of research in visualization in mathematics education. Focus on Learning Problems in Mathematics, 11(1), 7–16. cited in The role of visual representations in the learning of mathematics by Abraham Arcavi https://www.researchgate.net/publication/225216743_The_role_of_visual_representations_in_the_learning_of_mathematics_Educational_Studies_in_Mathematics_523_215-241 [accessed 4/7/18]
4. <https://www.ngv.vic.gov.au/exhibition/ngv-triennial/> [accessed 6 /3/18]
5. The Field Revisited P9 NGV Publication 2018
6. Munari B (2008) Penguin Modern Classics; Design as Art Bruno Munari; Penguin Books Ltd London, England
7. Interview with Gideon Obarzarnek about ASSEMBLY, a collaboration between Chunky Move and Victorian Opera to premiere at Melbourne Festival 2011. www.chunkymove.com <https://www.youtube.com/watch?v=1eewH1qo4dQ> [accessed 13 /10 /18]



Fig. 7



Fig. 8



Fig. 9

Identifying and communicating emotions that promote positive actions and transformation



“

This year our umbrella theme of ‘Transformation’ guided the children to connect with how their emotions and experiences transform their actions and choices, and the impact this has on themselves and others.”

Within our curriculum of Resilience, Rights and Respectful Relationships we identified a link to our investigation. “**Research shows that students who participate in rigorously designed and well taught social and emotional learning programs demonstrate more positive social behaviour, are less likely to engage in risky and disruptive behaviour, and show improved academic outcomes.**”(Victorian Department of Education and Training)¹

Through the languages of literacy, drama, visual arts and technology, we were able to offer strategies for the children to express and sometimes transform their thoughts and ideas and revisit an important opportunity for change and transformation.

We began this focus by asking these questions:

What are emotions and where do emotions come from? The children’s drawings and writing showed their thinking of how the brain, body and heart work together to create emotions. (Fig. 1)

When your emotions are in your heart then your brain thinks about which emotion you are going to use.

Emotions are feeling, your feelings. If you are sad you are using your sad emotion. If you are happy you are using your happy emotion.

If you are angry you are using your angry emotion.

Sometimes people can make you have those emotions. If someone is being kind to you, you have a happy emotion.

The children recognised that emotions can come from how we feel about ourselves at the time, and that others may influence our emotions. We noticed that their thinking supported our hypothesis of how children can become aware of how their emotions and experiences have an impact on others. We continued to foster an awareness of how they can transform their actions and choices when experiencing different emotions.

We posed the question:

How can we communicate emotions?

You can use sign language with your face.

You can show how you feel with your face. Sometimes people can tell by your face when you are sad, you have tears.

When you are happy you can see a happy face on your face.

We introduced the children to ‘Kimotchis’, which are soft toys with different facial expressions. The children identified the different

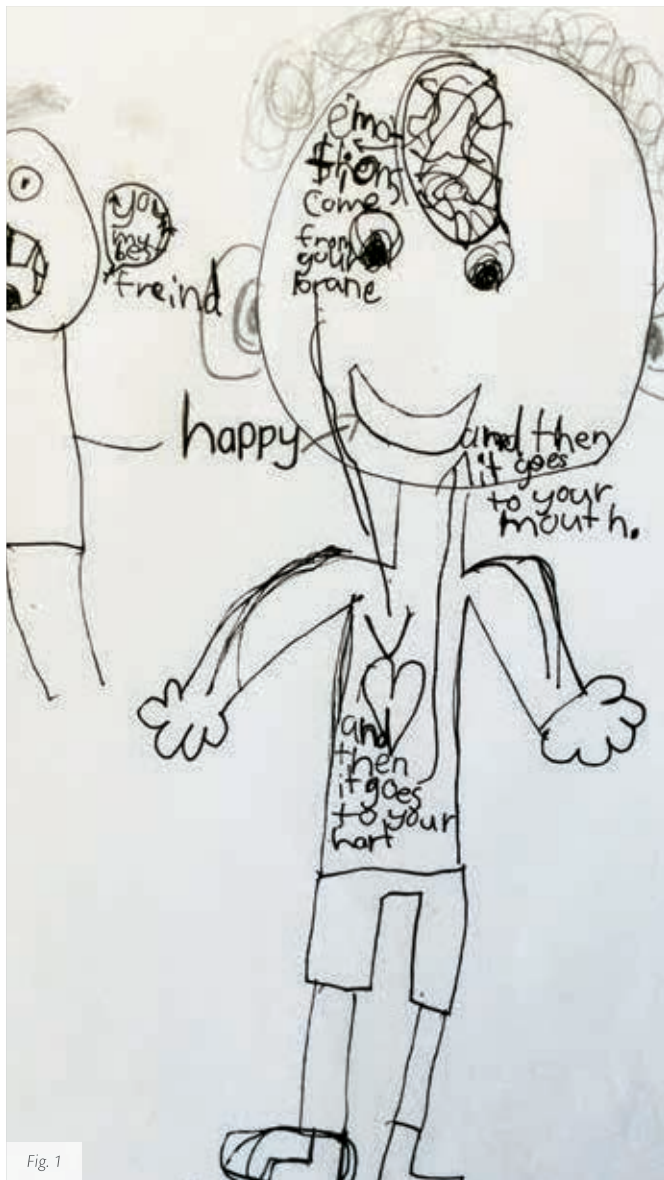


Fig. 1



Fig. 2

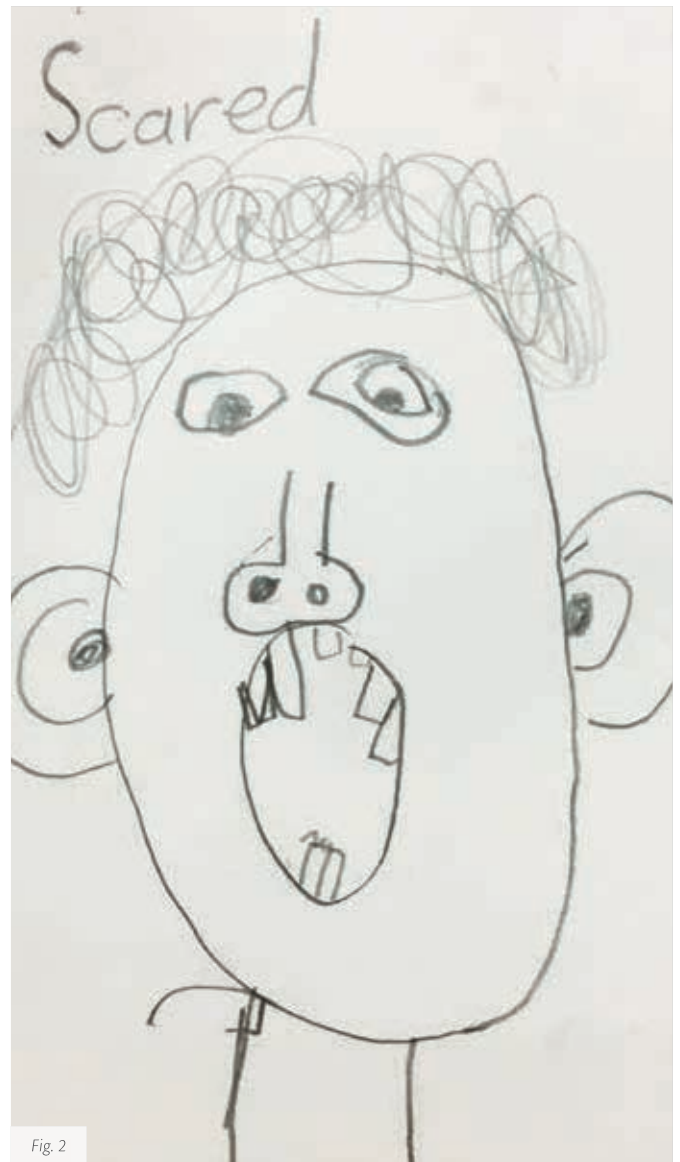


Fig. 2

Kimotchi expressions to develop language to describe their emotions.

The children then explored their own different facial expressions using mirrors and drew their facial expressions using lead pencil. (Figs. 2 & 3)

They were then asked to choose a different facial expression from the one they drew, using the medium of clay to create a 3D representation. (Figs. 4 & 5)

The children took photos of their facial expressions using an iPad. They created a slide show linking these facial expressions and emotions with their experiences.

To further the children's understanding and experience of how body language can communicate emotions. We met with our school drama specialist for his expertise. We decided that the children would deepen their thinking through experiencing a drama workshop. The children were given different scenarios where they

were required to explore and demonstrate different facial expressions and use their body language to match the emotion they thought the scenario represented. The children were wonderfully engaged in exploring how they could transform from one emotion to another and were able to see, from the reactions of others, what their emotions and body language conveyed to others. (Figs. 6 & 7)

When writing about how their emotions changed through their experiences the children recognised how they have the power to transform their actions as well as their emotions.

When I went on a high slide I felt nervous on the slide. Then I went down and then I felt proud. I was proud because I was nervous but then I just went down and I was proud.

What emotion or feeling did you need to find in yourself so that you could slide down the slide?

I needed to be brave.

When children are able to identify their emotions they understand that through experiences they can respond for positive change. For example, when persevering through challenges the process of transformation can strengthen resilience, confidence and the ability to problem solve.

So too, when conflicts occur in social situations, we encourage the children to recognise the emotions and body language of others; to “step inside the other person’s shoes” and reflect on their own emotions and actions; to feel empathy and take responsibility for their actions and reactions. This can help children to respond confidently and constructively, enabling positive change, growth and transformation when resolving challenges and conflicts.

When someone hurts me or does something mean to me I feel sad. Then someone helps me and they be kind to me and helpful and they are so caring to me. Helping is kind.

“Children are able to engage in self-reflection about their own processes with surprising clarity. This is a valuable ability that requires frequent occasions for reflection, comparing ideas, and practicing your skills.” (Vea Vecchi) 2

The journey of Resilience, Rights and Respectful Relationships is a lifelong path. As learners and educators, we can all play a part in transforming our emotions, choices and actions for positive change.

References:

1. State of Victoria, Department of Education and Training (2016). *Resilience Rights and Respectful Relationships*, 1,11,12,21. Melbourne, pg.3
2. Project Zero. Reggio Children (2001). *Making Learning Visible: Children as Individual and Group Learners*. REGGIO CHILDREN. pg. 205

Images

Fig 1. The brain, body and heart work together to create emotions and what causes emotions.

Fig 2. Lead Pencil drawing of happy emotion.

Fig 3. Lead pencil drawing of scared emotion.

Fig 4. Clay model of sad emotion.

Fig 5. Clay model of happy emotion.

Fig 6. Drama workshop – Saying goodbye at the airport.

Fig 7. Drama workshop – I’m going to miss you when you go away.



Fig. 4



Fig. 5



Fig. 6



Fig. 7

...When I go to the park I sit in the forest with the wind blowing and that calms my mind...



Fig. 1

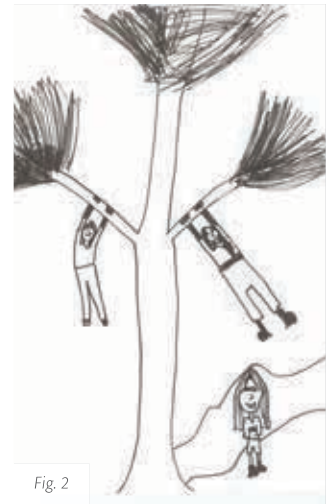


Fig. 2

“

When we consider the journey of our Year Ones in the Early Learning Centre (ELC) we cannot help but acknowledge the huge transformation that has occurred within them as individuals and as a group.”

From three year olds tentatively letting go of their parents' hands in Kinder, to independent Year One students ready to make a difference and eager to transform their ELC community. Such is the journey that we are so fortunate to be part of in the Bialik ELC.

Our group of Year Ones has shown their ability to grow and transform throughout this year. As a group they shared their thoughts about the transformation of their bodies. Over the previous eighteen months Yoga had become an important part of their classroom routine. (Fig. 1) Consequently they identified Yoga as a transformative practice and shared their understanding of the impact that Yoga had on one's body. This left us wondering, do the children recognise the impact that Yoga has on their mind as well as their body?

Yoga can help you be calm and it can also help you... if you've done lots of things that are hard and such a busy day with work. You can do yoga to make you calm.

Yoga will make you feel calm when you've had a really busy day... when you can't find anything to do then you should do some yoga.

It was clear from this conversation that the children associated the concept of 'Yoga' with the calming of the mind. However, from our observations it was clear that many of them found the process of Yoga invigorating and exciting rather than calming. We had noticed that many of these children had clear passions and interests that they turned to when they needed a 'calming moment'. We asked them to consider if they had other ways of calming their minds. (Fig. 2)



Fig. 3



Fig. 4

I start building a robot.... When I am angry with my brother I can go and build my robot.

When I have had a rough day I go upstairs in my bed and read a book.

The first one is when someone makes you smile... when your mum and dad joke. Or when you read a story with someone... like your parents.

Sometimes when you are angry you go for a swim to refresh yourself and you can enjoy...

I ask my mum to go to the park and I bring a bag with me and a book and I lie against a tree next to the playground where my sister plays.

When I go to the park I sit in the forest with the wind blowing and that calms my mind. When I just lie in the bed and look at the sun, it makes me happy.

The children were very enthusiastic and curious about this focus. What was apparent from their insights and drawings was that the children often associated the feeling of calm with a specific space. Some of their observations highlighted a strong association between nature and the calming of the mind. We considered, how could we use our school space to truly transform our children's minds and explore calmness within the culture and practices of our classroom?

The children looked closely at our school space using Project Zero's Zoom In and See Think Wonder thinking routines.(Mark Church and Ron Ritchhart)¹ As a provocation we zoomed in on one small piece of an architect's plan for the ELC. (Fig. 3)

I see shapes that look like vines.

I see something that looks like a flower trying to get up.

It makes me think of a bouquet of flowers.

It kind of looks like somewhere I have been before... flower bed.... And a bridge...

It makes me think of a garden and then at the bottom, a house.

The round bits look like clouds in the sky.

Their observations and wonderings further demonstrated their affinity with the outdoors. Indeed, throughout their time at Bialik, the children were often weaving elements of nature into their classrooms and using nature as a basis for learning.

Our big question arose, how can we help our children transform their outdoor space to transform the minds of others? Furthermore, how will positively affecting others help to strengthen, unify and calm our class community?

“It is our hope that a sensitive approach to surroundings, constant and quotidian, made of many actions, choices and forms of attention, can be a positive element of participation, of a conscious “solidarity” with the world around us and other humans...” (Tiziana Filippini, Claudia Giudici and Veia Vecchi)²

We were reminded of **“The Kindness Rock Project”** whose mission is; **“One message at just the right moment can change someone's entire day, outlook, life.”** (Megan Murphy)³ We wondered if we could somehow use this as inspiration within our context. We took the idea to the class. The children were eager to look at the many rocks that they had brought into the classroom throughout



Fig. 5



Fig. 6

the year with a new lens. We introduced the Project Zero thinking routine Colour Symbol Image as a way of giving character to the rocks. The children thoughtfully painted their rocks a specific colour and then explained why they had chosen that colour. (Fig. 4) As a means of linking our home and school community, we invited our parents to help their children with the next step and they created a symbol on their child's rock. This coincided with our parent evening 'Sharing our Learning' where we invited the parents to hide their rocks in the playground. (Fig. 5) This was a surprise for the class, when early the following morning, they searched high and low, in and out, over and under to find their rocks outside. The look of delight as they searched for and found their rocks was only akin to the looks on their parents' faces as they hid their rocks in the playground the night before. (Fig. 6)

“How hard is it to escape from places? However carefully one goes, they hold you – you leave little bits of yourself fluttering on the fences – little rags and shred of your very life.”

(Katherine Mansfield)⁴

It was clear that this practice of hiding and finding rocks had a true transformative power. The children were excited to expand the idea and to calm, delight and affect others within their greater community.

Within our Learning Lab sessions where students negotiate learning, the children developed plans to bring our special Rock Project to the rest of the Early Learning Centre. They typed up their plans and shared their thinking. (Fig. 7) It was decided that we needed to create a place for the rocks to be deposited so that once found, they could be hidden over and over again, thus continuing the ripple effect of positive transformation.

We asked the children, what would this look like?

Within a mathematics unit on measurement, the children designed a box appropriate for collecting rocks. They built upon strengthening their community by positively deliberating and voting upon one box design to be realised. This process in itself brought to light the way in which our class was continuously transforming as a group; to make this decision the children needed to rely heavily on the values inherent in our community – kindness, friendship, respect and care.

The children decided that they needed to inform our larger community about the Rock Project so that children, teachers and parents knew what to do when they found a rock. The children wrote letters to various parts of the school and tried a 'test run' by placing a temporary box under a designated tree in the playground called the 'Giving Gumnut Tree'. (Fig. 8) We watched our class stand by their box with a sense of community, unity and growth as they observed an entire playground laugh and delight in finding our rocks. We observed how our Year One students were transforming not just as a class, but as citizens of this world who care about positive change, about having an impact, about transforming the minds of others.



Fig. 7



Fig. 8

Carla Rinaldi writes, **“The question lies in how many possibilities there are for the individual child and the group of children, the protagonists of the experience, to have a story, to leave traces, to see that their experiences are given value and meaning.”**

(Carla Rinaldi)⁵ The rocks have been a physical representation of our children leaving traces in their space. As they transition to the Primary School, we wonder what ongoing trace will our children leave in the Early Learning Centre? How has this practice been transformative for our children? What else will they create, hide, design, build, communicate, colour, find and reveal to transform minds, to transform space and to transform communities?

References

1. Church, M and Ritchhart R (2011). *Making Thinking Visible: How to promote Engagement, Understanding and Independence for all Learners.*
2. Filippini, T and Giudici, C and Vecchi, V (2011). *The Wonder of Learning.* Reggio Emilia: Reggio Children, P.19
3. Murphy, M. *Kindness Rock Project* <https://www.thekindnessrocksproject.com/> [Accessed on 18 September 2018]
4. Greenman, J (2005). *Caring Spaces, Learning Places.* Washington: Exchange Press, p.11 (Quote comes from Katherine Mansfield)
5. Rinaldi, C (1998). *Children, spaces relations.* Reggio Emilia: Reggio Children, p.119

Does the transformation of spaces and tangible equipment change/transform how the children play, what they play and their interactions with each other?

“

When we started the 2018 school year the umbrella theme for our ELC was transformation.”

After brainstorming our ideas in relation to this topic it quickly became clear that this concept of transformation provided us with opportunities to follow many different pathways. We wondered what areas of transformation would capture the children's interest and imagination.

In order to find this out we began our investigation, using the 'Think Puzzle Explore' routine, by posing the question:

What do you think you know about transformation?

Transformation means changing.

Transformation is moving from one thing to another.

Things can transform too.

Things can change by growing.

At the same time we also noticed many conversations taking place between groups of children about the playground, including the different spaces within it, what they were playing and also who they were playing with. As many of the discussions were about the complexities and struggles the children were having we felt that the playground, the children's relationships with each other and the equipment and spaces within the playground would be an authentic starting point for our investigation and would provide us with many opportunities to link this to a variety of curriculum areas. These areas included literacy, science, geography, visual arts, technology and rights, resilience and respectful relationships.

Before discussing this with the children we decided to observe the children during play times looking closely at the way they played, how they interacted with others and what they chose to play.

“Unstructured play means open-ended, or creative free play with endless possibilities. It is child led and directed, and doesn't require an outcome or product. Unstructured play provides children with experiences in creativity, imagination, decision-making and the development of overall emotional and social skills.” (Lester and Russell)¹

Using our observations as a catalyst we asked the children to think about an area of the playground they would change and their reasons for wanting to do this. The two areas that stood out for us were the cubbyhouse and the tree house.

What is it about the cubbyhouse/tree house now that makes you want to change it?

Some of the wood has snapped. All around the cubbyhouse there are cracks.

The size of the cubbyhouse is too small, people are fighting over space.

It's not stable and it can be dangerous and people could fall.

If you could change the cubbyhouse/tree house what would it look like? How would you transform it?

I am changing the tree house so you can do more things when you are playing in it. I am adding a rope and putting it on the tree so you can swing down from the tree house. I have put more wood around the ladder and used nails to make it stronger and safe to climb.

I chose to change the cubby house by adding more windows, five instead of two so that when there are lots of people in the cubby house there's more light. I chose yellow because it's a happy and bright and pretty colour which will make the children feel happy because it's like the sun.

The children presented the drawings of their designs to each other and discussed what they would need to make the changes they wanted. What they discovered was how difficult it would be to make these changes and so it soon became clear to them that they would need to find another way to transform the way they played in the playground. (Fig. 1 & 2)

After a few days a group of children rushed into the classroom excitedly talking about the rocks they had found and what they had discovered. Their excitement captured the interest of other children in the class and each playtime more and more children joined in the game and came back from play discussing how they had had the "best play ever."

We really like using the rocks in the playground.

When we smash the rocks open we find colours inside.

The colours inside depend on the colours of the rock on the outside.

It's fun to smash the rocks and see what's inside. Sometimes I'm surprised by what we find inside the rocks, like when we find a crystal. (Fig. 3 & 4)

From there the children began planning what else they would do with the rocks and discussed their ideas with each other while eating lunch. As a result they decided to set up a rock shop and invited other children to come and buy their products. Once again they would come back from play and animatedly discuss what they had discovered or done in the rock shop.

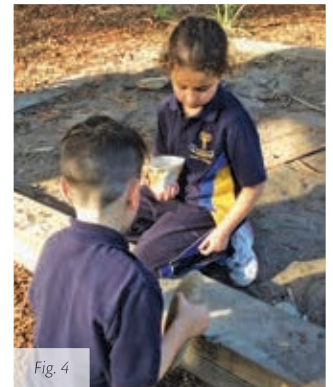
We ground the stone into powder to make nail polish and face paint.

We add water to make it into the face paint and nail polish.

We set up shop to sell the face paint and powder. We put the powder into packets to sell in the shop.

"When given the opportunity, children physically demonstrate preference, and enjoy playing in natural environments and or with natural elements. The wealth of research shows that they do so because of the overwhelming play potential, the possibilities of now and the promise of more to come." (Claire Warden)² (Fig. 5)

A few weeks later the children were faced with a problem. They could no longer play with the rocks they had been using as these rocks had been placed around the new trees to conserve the water and help the trees grow. As well as this, the area they were playing in was outside the drama studio and their animated play was disturbing the older children's lessons.



We asked them what puzzles they had in relation to the playground following this.

Where can we move our rock shop to?

What will we use instead of the rocks?

The following day the class went outside to look for a new area for their 'Rock Shop'. They looked at many possibilities, discussing the pros and cons for each space they found. After much discussion they decided on an area that they felt was suitable. However, as this place was not one regularly used they realized that they would need to ask the Head of the ELC if they could play there. This linked our investigation to both literacy and technology by giving the children the opportunity to write an email asking permission to use the area.



Fig. 6

*Dear Daphne,
The drama teacher Deb won't let us do the rock shop outside the drama room because she said it is too noisy. So can we do it in the little garden with the fence? We will look after the garden and not break anything.
Kind regards
Alicia*

Dear year 1 R,
I think that you all wrote a wonderful persuasive text about the rocks and the move to the fenced area in the playground. I will have to visit the area tomorrow and see if it looks like a suitable play space for you all.
Kind regards
Daphne Gaddie

Once the new place had been chosen the children moved onto the next puzzle and talked about what they might be able to use instead of the rocks. They did this by looking at the suitability of each material. One of these materials was coloured chalk that we had in our studio. In order to see if the chalk would work the children took a box out to their new space and began experimenting with it.

Mixing the colours together makes it multi-coloured, it's beautiful and bright.

I rubbed chalk on my hand, mixed it with water and made handprints on the ground.

The chalk dust feels soft when you rub your hand over it.

I discovered that when you rub the chalk on the ground it becomes like powder.

When we pour water on the chalk dust the colours get darker.

If you spray water over the chalk it becomes paint.

I took a stick and tested the paint (chalk mixed with water) on my fingernail to make nail polish.

I rubbed some of the chalk paint on my face to see if we could use it as face paint. (Fig. 6 & 7)

The children were extremely excited by their discoveries and as a class felt that the chalk would be a good substitute for the rock dust. For the next few play sessions they took a box of chalk to their 'Rock Shop' and carried on playing as they had previously done with the rock dust. However they were faced with yet another dilemma. They did not have an infinite amount of chalk to



Fig. 7

use and if they kept using a box each day they would soon run out. While this was the predicament the children had, our puzzle was related to our focus on natural resources. As a result we asked the children what they thought chalk was made of.

They smash the rocks to get the powder from the rocks and then take the powder from the rocks and mix it with water and put it in the freezer to set.

I think chalk is made from sand and mud mixed with water. Then they put it in a mould that's shaped like a piece of chalk and put it in the freezer to set.

They mix it with food dye to get the colours.

So what have we as educators discovered over the course of this investigation so far?

We noticed as the investigation continued that many changes occurred in relation to the way the children played and interacted with each other, as well as their willingness to include other children in the class into their game. We also observed how their focus shifted from the negatives associated with particular children to the strengths they saw in themselves and each other and how this became part of their everyday, the norm, both in the classroom and the playground. We felt that this was due not only because of the way our investigation had evolved but also in part to our focus on the curriculum area Resilience, Rights, and Respectful Relationships – Teaching for Social and Emotional Learning and Respectful Relationships. (The Department of Education and training State of Victoria)³

For us, as well, it appears that the transformation of spaces, materials and emotions link together and in turn all have an impact on how the children change/transform. These changes seem to play a pivotal role in the interactions children have with each other, the choices they make, the games they play and the relationships they have.

References

1. Lester, S and Russell, C (2008). Why play-based learning? Available at <http://www.earlychildhoodaustralia.org.au/our-publications/every-child-magazine/every-child-index/every-child-vol-16-3-2010/play-based-learning-free-article>, p 9
2. Warden, C (2010). Nature kindergartens. Perthshire, Scotland: Mind Stretchers LTD, p 93
3. Department of Education and Training State of Victoria (2016). Resilience, Rights and Respectful Relationships. Melbourne, Victoria: Department of Education and Training, p 8 – 17

3 Year Old Kinder

Kinder 3E

I like us when we sit together

Maya ALDWORTH, Juliet AUSTER, Grace BRODER, Maya DABSCHECK, Max GOLDBLOOM, Tommy HUNTER, Louie ISRAEL, Alon LALL, Harper LEAL, Mackenzie MATTHEWS, Reuben SHER, Raphy SILVERMAN, Alphy ZHANG

with

Elise Rotstayn, Miri Sheffer-Watson, Julia Rogers, Chris Georgalas

Kinder 3M

We will protect it from the humans...

Summer BLASHKI, Zion CAO, Olive FISCHL, Indiana FRID, Gemma FRYDENBERG, James HELFENBAUM, , Ryder JANOVER, Georgia JOLSON, Elsie LEW, Jesse MAC, Vinnie MARKS, James RYAN, Isabel SUSMAN, Amalya TAVORY

with

Megan Miller, Danielle Cohen, Rosemary Barry

Kinder 3R

I am in a planet: It's called dinosaur house

Thomas ALPERSTEIN, Jacob DEGEN, Guy DORIN, Reuben EYDLISH, Barnaby GAUVIN, Abby GROSSMAN, Aria GURKAN, Eve HARRIS, Ari LANDAU, Jordan MACKIN, Ira MARKS, Revan TANG, Victoria TEVELSON, Jed TREPPER

with

Ranjna Najat, Tamar Herman, Chris Georgalas, Julia Rogers, Shira David

4 Year Old Kinder

Kinder 4 Cross Class

The world changes, people change it, the world...

Kinder 4G, Kinder 4J, Kinder 4L

with

Helene Oberman and Kinder teachers

Kinder 4G

Light and colour are friends because they play with each other...

Suri ALON, Dylan BERKOVITCH, Noah EYDLISH, Mika FELDMAN, Milla FRIED, Noa FUCHS, Zac GOLDBERG, Sunday GROSSMAN, , Evie HAWORTH, Alma HECHTMAN, Noah KIRSZBAUM, Adelaide KLEPFISZ, Sasha KUZMICICH, Jack LEW, Leo REID, Ruben SABLE, Isaiah SEEMAN, Adam SKALICKY, Abbey SOMERVILLE, Blake SWART, Harry ZIMMET

with

Gali Sommer, Pazit Landau, Megan Jay, Sandy Sher, Aliza Deutsch, Deb Nirens, Robyn Winograd

Kinder 4J

'Your heart gets bigger'

Jude BEGGS, Lani BLECHER, Scarlett BRAM, Chloe CHERNY, Ashley COCKS, Ethan DODGE, Joseph DUNNE, Ruby FINK, Aerin GOLDBERG, Nathan GOLDBERG, Chloe ISRAELSOHN, Ilan KAMIEN, Amber KAMIL, Ilai KAPPER, Jasper MOSZKOWICZ, Max NAPHTALI, Charlie NUSSBAUM, Allie PURA, Aiden ROSENBAUM, Elliot SEGAL, Mayan SZTRAJT, Ayala TAL, Leah TEPERSON, Asher VOSKOBOYNIK

with

Judy Blumenthal, Ayana Shavit, Di Thornton, Gail Bousi, Rosemary Barry, Robyn Winograd

Kinder 4L

The life cycle of transformation...a story of ideas

Libi BEN ARTZI, Jethro BLECHER, Zac BURNS, Eden FUCHS, Lexi FURMAN, Mai GOLAN, Oscar HERZEL, Rebecca KOTLER, , Toby LEVY, Guy PERETZ, Ella RODENSKI, Eliza ROITMAN, Harvey ROZENCWAJG, Zara SHER, Angela SHTERN, Ben SHULMAN, Ness SHURMAN, Sunshine STIMSON, Shahar TUTSCH, Aaron VAINBERG, Maayan WOLKENBERG, Noam ZIV

with

Lindsay Miller, Adi Barzilay, Zia Freeman, Aliza Deutsch, Shira David, Ortal Erez, Mandie Teperman, Robyn Winograd

Prep

Prep Jewish Studies Cross Class

Let's start at the very beginning...

Prep A, Prep J, Prep R

with

Naama Dadon, Desre Kaye, Ariela Rushiniak

Prep A

Korus change, and I change

Daniel APTER, Leo BLASHKI, Stella FINK, Emily FIRESTEIN, Rocklan FISCHL, Adele FISHER, Sonny GELBAK, Miller JANOVER, Matia KRASNOSTEIN, Olivia LURIE, Ava MARKS, Ted MARKS, Noah MELTZER-BURNS, Charlie MOOSEEK, Alice ROM, Sasha SOUTHWICK, Olivia SUSMAN, Nate ZUKERMAN

with

Amy Brown, Desre Kaye, Shira David, Mandie Teperman

Prep J

Transformations over time

Luca DAHAN, Coco DVIR, Ethan GOLDBERG, Marc GOLDBERG, Amalya KALBSTEIN, Gabe MAC, Max POHL, Coby PURA, Liora REIDER, Jackson ROSE, Alon RUSHINIAK, Yasmin SAMUEL, Alexia SCHER, Aiden SERRY, Charlotte SHAM, Jay WEISKOP, Lexi WHINE, Ella YAHALOM

with

Jacinta Murray, Naama Dadon, Zia Freeman, Nikki Kausman

Prep R

Learning how to learn

Gia ALTMAN, Gaia BENNETT, Noah BURMAN, Wilbur GAUVIN, Kai GLAZER, Yoav HANUKA, William HOLZER, Eve ISRAELSOHN, Ash LANDAU, Noam LIFSZYC, Sara MAZER, Maybelle RAZBASH, Alexandra SAMUEL, Hannah SEIDNER, Ben SHEEZEL, Nadav SZTRAJT, Nathan TIAN, Zadie WODAK

with

Rachel Machlin, Ariella Rushiniak, Aliza Deutsch, Robyn Winograd

Year 1

Year 1 Cross Class

Helping the object, reimagining the known...

Year 1L, Year 1NZ, Year 1R

with

Helene Oberman and Year 1 teachers

Year 1L

Identifying and communicating emotions that promote positive actions and transformation

Remy ASSERAF, Idan BEN-ELIEZER, Chloe BERKOVITCH, Stella CRITICOS, Michael DAVIDOFF, Hila GOLAN, Mason GOLDSTAT-JOFFE, Liel HERMAN, Phillip KLEINE, Jonathan KOTLER, Chloe LEVY, Louis ROM, Eli SEGAL, Jordan SHAPIRO, Ariel TAL, Tiffany YERUSALIMSKY

with

Linda Baise, Naama Dadon, Deb Nirens

Year 1NZ

When I go to the park I sit in the forest with the wind blowing and that calms my mind...

Miles AUSTER, Idan BEN ARTZI, Mia BIRNBAUM, Dalia BLECHER, Ashton BURNS, Phoebe CHERNY, Pia DABSCHECK, Jasper FINK, Sidney GAUVIN, Hadar GOLAN, Amy JIN, Finn JOACHIM, Jacob KIRSZBAUM, Rose LEIGHTON, Eden PERETZ, Milan PERRY, Arki RETTIG, Zoe ROBIN, Levi ROITMAN, Camilla RYAN, Milla SERRY

with

Natalie Kluska and Zoe Winograd, Arielle Rushiniak, Anne Budlender, Liran Ben Shoshan

Year 1R

Does the transformation of spaces and tangible equipment change/transform how the children play, what they play and their interactions with each other?

Jacob ALDWORTH, Nadav FUCHS, Natalie GROSSMAN, Sam HELD, Matiya ISRAEL, Ezra JANOVER, Mia KALLENBACH, Sienna KAMIL, Shiraz KAPPER, Zahava LALL, Jake LICHTENSTEIN, Poppy LUST, Alicia MACKIN, Carmel ROM, Aurora SHAPIRO, Joel SKALICKY, Angus SOMERVILLE, Eliana TAVORY

with

Roz Marks, Desre Kaye, Sandy Sher





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