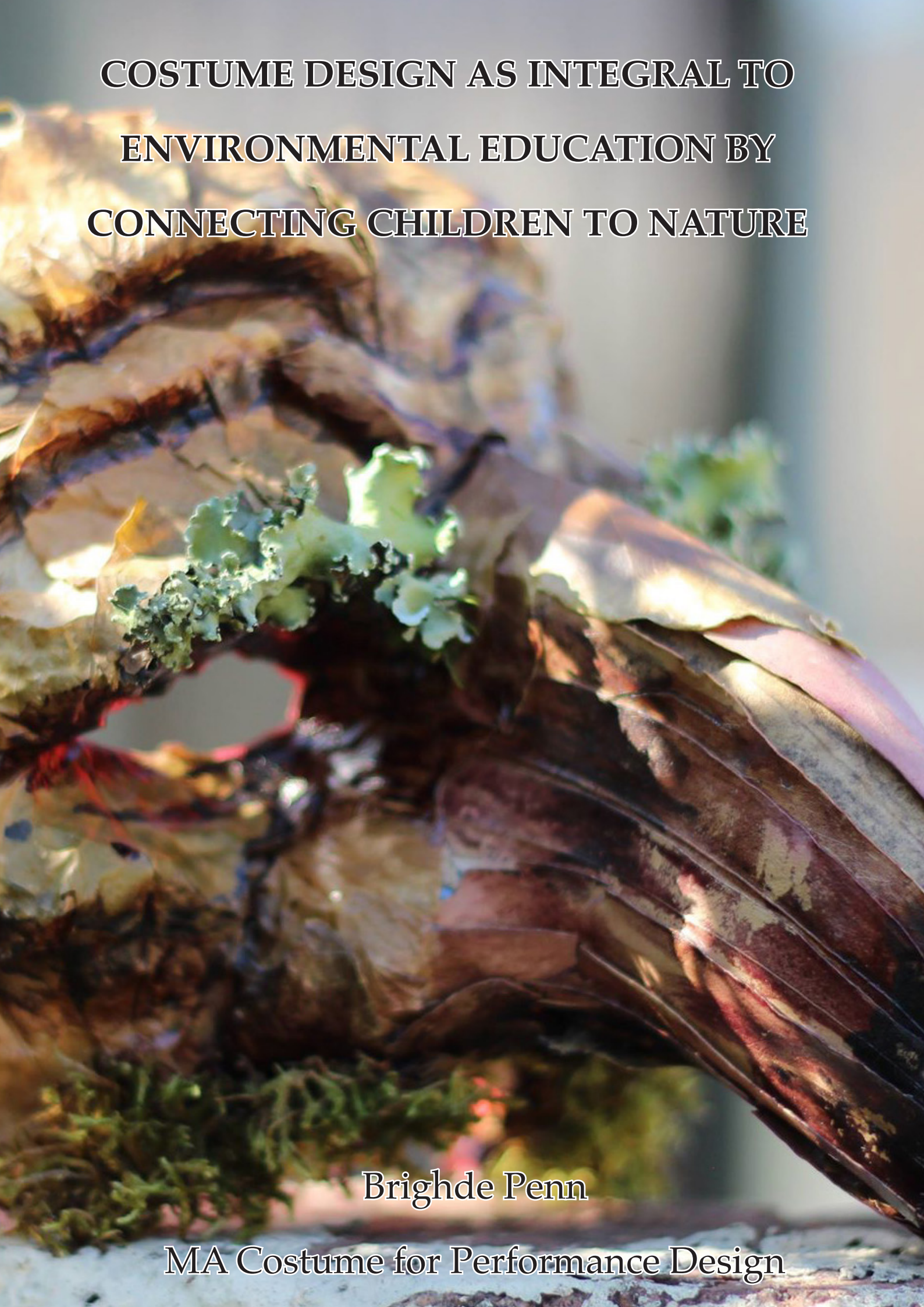
COSTUME DESIGN AS INTEGRAL TO ENVIRONMENTAL EDUCATION BY CONNECTING CHILDREN TO NATURE



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MA Costume for Performance Design

This dissertation is written as part of the completion of the Masters in Performance design at the Royal Welsh College of Music and drama

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Chapter 1

INTRODUCTION

Connection to nature improves confidence in artistic self-expression, a necessary pre-requisite for good mental health (Stuckey H, Nobel J. (2010).

Waikereru Ecosanctuary

I'm sitting in the shade of the Welcome Shelter with the group of youngsters who have just completed my 3 day Mask Making workshop. I ask them:

"What will you tell your friends about this experience when you get back to school?"

10-year-old participant:

"You don't have to tell them, you can just show them." [As he looks down and puts on the mask he has just finished making.]

For this dissertation, I set out to explore an interdisciplinary approach to environmental education, blending my experience in theatre and costume design with ecological education. My central objective was for the children to participate in a costume and character design process using the New Zealand native forest as inspiration. Ecological processes were reinforced through the making of masks and the creation of a short film.

The question I asked was:

"Can you build a connection to the environment through character design?"

Throughout the thesis, I use the word 'design' to encompass the making of costumes, the creation of characters and impromptu performance. Fitzgerald (2016) describes environmental connectedness as "the phenomenon where people feel more concern for their environment when they feel a connection to nature and incorporate nature as part of their identity." I understand environmental connectedness as having a sense of belonging within nature, rather than being separate or above nature. I want to explore whether the creation of a mask using natural materials can link a child's identity to the natural world and create a sense of belonging within nature.

The reason for my dissertation comes from a growing concern that young people today are increasingly disconnected from the natural world. Academics and health professionals draw parallels between mental/physical health conditions and the lack of exposure to the outdoors, a condition now known as Nature Deficit Disorder. There is also evidence to suggest that the "connection to nature improves confidence in artistic self-expression, which is a necessary pre-requisite for good mental health" Stuckey H, Nobel J. (2010).

These ideas are consistent with my own feelings towards the environment, which were shaped by my childhood experiences growing up in Canada and New Zealand. I was exposed to two indigenous cultures which seamlessly integrate their craft, oral traditions and the natural world on which they depend. My base line experience of where I was most happy as a child was outside making something, within a social setting, led by elders, i.e., my mum, aunties or parents' friends. My sisters and I developed an appreciation of the natural world around us by making up stories and designing films in our backyard.

Whilst I'm not of Maori or Canadian First Nation descent, I have benefited from exposure to these cultures growing up. In my early school years, I went on field trips to West Coast Canadian coastal rainforests that were guided by first nations elders. Words that 'stuck with me' as a child were that 'we needed to ask the forest permission before taking from her.' If you wanted to snap a fern frond off, you had to ask permission and be grateful for the fern which you had taken. The language used personified the forest as a thinking, breathing, being, which meant that as a child the forest called for the same respect as any living creature.

In my hunt to discover whether there were programs that shared views that science and art are 'different branches of the same tree', I was fortunate to find that there was an education program that was happening only a stone's throw from the land I grew up on.

Waikereru Ecosanctuary - figure 2:

Wai kereru Ecosanctuary logo
figure: 3

Waikereru Ecosanctuary is an ecological regeneration project started by Jeremy and Dame Anne Salmond in 2000. The ecosanctuary has three key areas in its regeneration plan. First, it contains a small predator proof fence around one small hilltop to assist in the breeding of endangered indigenous birds. It has been fundamental to the reintroduction of the Oi (grey faced petrel), a sea bird once prevalent on the East Coast. Second, twelve hectares of rare remnant riverside forest has been restored, after years of weeds being dumped and understorey grazed by goats and cattle. Third, one hundred hectares of hilly land has been restored to an early regenerative state. Manuka, Kanuka, and other podocarp trees are now creating the conditions necessary to protect other native seedlings from invasive ground covers. Finally, a creative education program highlighting these restoration efforts was formed to engage the community, structured around the kaitiakitanga principles of guardianship and preservation.

Ellen and Pete Jarrat were approached to be partners in facilitating these "Wild Lab Tiaki Taiao" workshops. As creative educators, they set out to use 'interactive experiential challenges' as alternatives to the more conventional 'classroom based' education formula. Their ethos is centred around supplementing institutional learning with opportunities for creative and practical projects, a sentiment shared by Dennison,K. (2017) in her writings on the 'recalibrating of teaching approaches.'

"Many students face isolation and meaningless experiences in their day-to-day routine in schools. The increasing focus on standardized tests and academic performance reinforces competition and extrinsic rewards for learning. This diminishes opportunities for creative thought, development of communities, and genuine meaningful connection to content, leaving students feeling disconnected to learning and their peers" (Dennison,K. 2017).

The Jarrats run their own extra-curricular education business outside the Wild Lab program called "Jarrat's Create and Educate" which offers apprenticeship-style learning, where students are given creative responsibilities in real life projects. I asked them why they gravitated to this philosophy. Pete answered, saying,

"You really can't learn something by just reading and writing about it. You must experience it. An experience changes us in some way. It gives us a new perspective and allows new ways of thinking. Connecting the head and the heart in the learning experience is the goal. We try and accomplish this by design. We also want to create an environment that allows you to 'be yourself' and demonstrate your strengths." Jarrat. P personal communication (2020)

This philosophy resonated with my own beliefs, which are that, typically, western biological sciences don't communicate findings in a visual, three-dimensional, artistic or material form, thus limiting their accessibility to those with an academic training. An understanding of climate change, the loss of biodiversity and environmental damage is essential for all of us, not just those with academic training. I see the role of designers, therefore, as critical to communicate those scientific findings through engaging in the process of design. In encouraging children to combine the process of design, the eye of the natural scientist and the skill of the craftsman, you are enabling a child to
1.) Form the question, 2.) Research the answers and 3.) Abstract their findings into an artistic representation. Albert Einstein wrote in 1923, "After a certain high level of technical skill is achieved, science and art tend to coalesce in aesthetics, plasticity, and form. The greatest scientists are always artists as well."

The Jarrats agreed with my ideas and were excited to help with my experiment in costume-led environmental education. They thought that this concept fitted well with their current programs and offered to support this pilot workshop.

Utilising Waikereru's land, facilities and the Jarrat's pool of local students, I had an opportunity to trial my hypothesis. I designed an experimental three-day workshop which took place at the Waikereru Ecosanctuary in the summer of 2019 and included: mask making, character development, story structure, film making and impromptu performance using existing costumes that I had made. The children devised a story; built their own character by creating a 'Commedia dell'arte style' mask, which was rendered using leaves and materials found on the forest floor; and dressed up in costumes provided. The final product was a short film which we made on the last day of the workshop.

This dissertation reviews the literature on environmental education, indigenous pedagogy, art and play therapy and masks. The research in these fields formed my methodology, which included interviews and the three-day workshop; my results are presented in the form of a journal kept throughout the week-long preparation plus facilitation of and follow up of the workshop.

Figure: 4

"After a certain high level of technical skill is achieved, science and art tend to coalesce in esthetics, plasticity, and form. The greatest scientists are always artists as well."
Albert Einstein (1923)

Figure:5

Chapter 2.
LITERATURE REVIEW

"The worst scientist is he who is not an artist; the worst artist is he who is not a scientist."

A. Trousseau (1869)

Introduction

My dissertation draws from various inter-related disciplines, including: environmental education theory (specifically the research into what has recently been coined "nature deficit disorder"Louv, R (2008); indigenous pedagogies that deepen relationships with nature; art therapy; and of course the broad range of theoretical work concerning design and the benefits of the design process on human development. There is a large body of research from these disciplines so what I did was to look for the commonalities in these disciplines as well as draw from a rich European tradition of integrating western arts and sciences. The richness of the Renaissance was characterized as "the marriage of the mandolin to the microscope." A. Trousseau (1869) wrote "The worst scientist is he who is not an artist; the worst artist is he who is not a scientist."

2.1 - Environmental Education

Environmental education is predicated on the assumptions that we are increasingly disconnected from nature and because of that our health and educational potential suffer. A study by Khajezadeh and Vale (2017), designed to examine how New Zealanders spend their time between indoors and outdoors, found the citizens now spend 60-70% of the day indoors yet New Zealanders are thought of internationally as being an outdoor, adventurous nation. The government broadcast the image of "100% pure New Zealand," implying it is a nation that cares about the environment and spend ample time enjoying it. The reality is that New Zealanders spend 68.5% of their time indoors, compared to other countries such as Germany, averaging 65%, and Korea 59%. The average amount of time spent outside during summer in Aotearoa is a 0.55 hours a day. We have a temperate climate and 81.1% of our dwellings are detached with open private space, yet we are not making as much use of them as other countries that have less space and more challenging climates. These statistics are an average and they do vary depending on age, gender and occupation; nevertheless, New Zealanders are now spending more time indoors than many other people in many countries around the world.

The implications of spending so little time outside has been well documented in Richard Louv's landmark book, 'Last Child in the Woods', which consolidated much of the recent research on the impacts of children's disconnection from the natural world. It is in this book that he introduced the term "nature deficit disorder," defined as

"Not a medical diagnosis, but a useful term—a metaphor—to describe what many of us believe are the human costs of alienation from nature: diminished use of the senses, attention difficulties, higher rates of physical and emotional illnesses, a rising rate of myopia, child and adult obesity, Vitamin D deficiency, and other maladies. "

He explains the reason why this deficit has come about and the consequences this has on society. Among the reasons: "the proliferation of electronic communications; poor urban planning and disappearing open space; increased street traffic; diminished importance of the natural world in public and private education; and parental fear magnified by news and entertainment media." Louve, R (2008)

Research also suggests that nature-deficit disorder weakens ecological literacy and stewardship of the natural world. These problems are linked more broadly to what health care experts call the "epidemic of inactivity," and the devaluing of independent play.

Given that modern day parents find it difficult to create time for their children in natural settings and in quality ways, Mathew P. White et al. (2019), asked the question: What is the minimum amount of time spent outdoors needed to feel the mental and physical health benefits of nature? His findings showed that it was a minimum of two hours per week with it peaking at five hours. Positive associations peaked between 200–300 minutes per week with no further gain. The pattern was consistent across key groups including older adults and those with long-term health issues. It did not matter how 120 minutes of contact a week was achieved (e.g. one long vs. several shorter visits / week).

Children themselves seem to intuitively know this. A study by Ward K.L. (2018) in Sydney, Australia asked youngsters aged 3-5 yrs to design their dream playground. There was no instruction given that this space needed to be outside or had to resemble anything that could logistically be built. Their findings where that, "All of the drawings depicted the outdoor play space and featured natural and 'other-than-human' elements." Ward K.L. (2018 p34-41) Richard Louv was asked the question in an interview: "How does play in nature differ from play in other settings?" His answer was: "Play in nature differs mainly in respect to freedom and independence. Without independent play, the critical cognitive skill called executive function is at risk." He goes on to explain that executive function is the ability to exert self-control and evaluate risk. The fact that all the children drew out-door play spaces as opposed to indoor, reinforces their innate understanding that they need and want to be outside playing; testing their bodies in challenging imaginative play spaces and also developing their own sense of independence. The research validates Richard Louv's insight into the essential need to build executive function at a young age.

These insights beg the question as to what the best practices are for engaging children in outdoor play. A study conducted by C. Green, (2017) looked into engaging young children in the environment using four different methods: role play, art, model building and book making. The philosophy behind this experiment was to 'let the child be the researcher' and not to let the desired outcomes for the adult researchers steer the course of the child's interest. The children were invited to participate in the research activities, but were given the option to choose what, if, and for how long they wanted to engage in each particular activity. Rather than leading the inquiry, the researcher would take on a supportive role, stepping away from their own notions of how the study should be done in order to allow children's questions and ideas to emerge and guide the inquiry.

The benefit of self-directed enquiry learning is that the child has a lot more investment in the activity. Their interests and questions about their surrounding are being answered and therefore they are more engaged. The value of this research is not measured in the quality of the scientific knowledge gathered but rather the building of a positive experience associated with the environment.

The four methods C. Green, (2017) used to develop self directed enquiry were:

1) Role play- This allows children to test out their own research and build empathy as they embody the life of another person or creature. Social skills are developed as it subliminally forces children to think about how this character would react to different scenarios and people. This process allows them to reflect upon their own relationships and experiences, drawing conclusions about their beliefs, morals and perspectives. When this experience is placed in a natural setting the content is more likely to include environmental themes

2) Art - Enhances observation and awareness. It can be created through many different media such as drawing, painting, photography, poetry, etc. It requires critical thinking on composition, colour, texture and sound. Green (2017) expresses art as a "meaning making process; through the creation of art, children represent and interpret their own experiences." He cites Isenberg & Jalongo (2014), who write, "Like language, art is a symbol system that can be used to generate meaning."

3) Building a model- This develops three-dimensional thinking and spatial awareness. It enhances problem solving and fine motor skills. When challenges with construction and materials occur, children learn through trial and error. Social skills are developed in asking for help and opinions from peers and adults on how to achieve what they have in mind . "The primary advantage of the 'Building a Model' method is that models constructed by children represent their particular interests in their environment. For instance, Green (2017) reflects that, "Sergo built his home in the forest. This, in turn, validated his interest in claiming a place in the forest."

4) **Book making-** This allows a child to document their experiences. In the experiment run by Green (2017) they filmed the children during the process of testing the four methods in the environment. Led by the footage of the children's memories, he generated a discussion that rekindled the stories about their experiences.

These oral reminiscences were written down by researchers. The children would add their own drawings and choose from photographs to build their page of memories. This is an exercise in story-telling and reflective analysis of shared experiences.

Green concludes,

"Creating art in the forest provides a backdrop for children to reflect on the beauty and awe of nature; it also provides an opportunity for children to interact with and incorporate aspects of nature into their paintings or drawings. While artistic representations have been used quite extensively in early childhood research, inviting children to use materials from nature to build models and to engage in role-play encourages children to create and recreate representations and scripts of their experiences. As well, book making as a data analysis and interpretation tool, provides children with the opportunity to reflect on and further share salient aspects of their experiences. "

Of course, the masters in pedagogy of the outdoors are Indigenous nations. They have developed educational techniques to ensure generations maintain a sustainable relationship with their environment for millennia. The use of craft and mask making to reinforce world views and stewardship is pivotal to the two cultures to which I was exposed to as a child.

"Play in nature differs mainly in respect to freedom and independence. Without independent play, the critical cognitive skill called executive function is at risk." Louve, R (2008)

Figure: 6

2.2 Indigenous Pedagogy

I grew up influenced by two different coastal first nation cultures, Te Maori from the east coast of New Zealand and also the Saanich people from the west coast of Canada. Both are oral cultures and intrinsically tied to the natural features of their landscape— for example the masks, made in Canada from the local trees, which depict the animals who are their teachers, or the use of canoes as a metaphor for conducting ourselves throughout our lives—paddling together towards a common destination. There are many parallels between these cultures in the way that knowledge is passed down through generations.

The Saanich First Nation people do not have a word for art. Everything they make has a practical/spiritual/aesthetic purpose within the community. Teaching stories are triggered through masks and designs on everyday items. For example, baskets, blankets, totem poles and masks which seem simply beautiful works of art to a western eye, are actually intrinsic aspects of culture, used for passing on knowledge of lineages, ownership of land, ways to harvest and environmental stewardship, through the stories they evoke. Aesthetic beauty, ancestry, and the understanding of their place in the natural world is represented in these objects. Singleton (2015) cites Taylor (2007)

"Indigenous epistemologies are grounded in the meaningful context of inter-relationships and nature experience. These ways of thinking are considered transformative because they reinforce the shaping factors of transformative learning which are critical reflection, emotional engagement and relational knowing."

When looking at indigenous pedagogy, it is in the language of the people that we begin to see some of the subliminal core values of the society that are being taught. The Saanich First Nation people speak SENĆOŦEN *, which is the language of the people from where I was born in Canada. From Montler's (2018 p176-178, 413) SENĆOŦEN dictionary the word that is the closest to our modern western idea of health is "Helit." In the SENĆOŦEN language this means to 'save someone else's life.'

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* The SENĆOŦEN language is written in capital letters

There is no word that describes our western idea of individual wellbeing. There are, however, fifteen different words to describe variations of bringing happiness to a group. Each word reflects a nuance of feeling happy as part of that group; e.g. HELHI,ELEƛ̓NEW̲ - to manage to be making someone glad, happy (of a group) ; or a different relationship to someone in the community, e.g., HEHI,ELEƛ̓NEN̲ the children make each other happy' or HEHILEƛ̓NEN̲ she/he/it made a little one happy' or HEHILƛ̓TW̲ to make or let someone be glad or happy (of a little one). There is even HELÁSEN̲TEN̲, which means 'to be in a sneezing spell as a group.' All the words derive from the same root which is "HELI" which means to be alive, the idea being that there cannot be life (and health) without the group. What indigenous languages show is that individual health is intrinsically related to the health and well-being of the community. In other words, there is less importance placed on individual happiness and more value placed on the collective happiness.

When one looks at the definition of health, you find in the language words like QEC'ÁSET, which means 'becoming spiritually strong' and it implies a form of training. This word could be used to describe the journey one took to become a doctor or "train one's self for advanced skill." The SENĆOŦEN dictionary gives examples of this word being used in a sentence and the references suggests that this training and gaining of knowledge was done in the mountains, higher education being reached on higher ground: "They would train up in the hills" Montler (2018 p413). The definition of health therefore implies a type of training within the landscape, where skills are gained recognizing an interconnection between health and education. The landscape is the teacher.

This is reflected in what I experienced as a child, in that the language can embody nature in other concepts such as health and happiness. These coastal languages also define community as all plants and animals as well as humans. In the Cowichan First Nation of Hul'q'umi'num' speakers (next door to the Saanich First Nation) the term Maakw'ste, 'uw slhilhukw'tul means "Everything is interconnected." Another expression, Maakw'ste, 'uw huliitun tst, means "everything is what sustains us. " "All our relatives" means not only all humans but the other plants and animals; therefore, the relationship you have with members of your family is equal to the relationship you have with the environment because they are all teachers.

There are similar pedagogical philosophies in Maori culture. Paul Stucki (2010) wrote his doctorate on the beliefs and practises of Maori pedagogy and describes the idea of 'Ako'which is reciprocal learning. He quotes Bishop et al (2003) saying "The teacher does not have to be the fountain of knowledge but rather the 'partner' in the conversation of learning" These concepts are often taught through stories. Stucki, P. (2010) uses the Maori mythology character Papatuanuku [Mother Earth] to describe this reciprocal relationship. 'Tane' is the forest and son of Papatuanuku. "The trees with in the forest are fundamentally affected by the ground in which they grow" Stucki, P. (2010) which implies that equally the trees provide for the earth and soil. This metaphor links ecological relationships with a parent/child relationship and demonstrates their reciprocal nature, in being both vital to each other.

These stories with their natural metaphors grow the concept of Kaitiakitanga, which is, the understanding of the complexities between the social, economic, spiritual, and cultural factors that are taken into consideration when managing natural resources. Kawharu, M (2000) says "Kaitiakitanga continues to find centrality in Maori kin-based communities because it weaves together ancestral, environmental and social threads of identity, purpose and practise." The root of the word Tiaki means 'to guard' but when used in context it can also mean 'to preserve, keep, conserve, nurture, protect and watch over.' Every generation cultivates this knowledge further, and ensures its survival. The continuation of cultural practises and collective identity all hinged around shared connection to land and sea.

These two cultures reflect their connection to the landscape in the metaphors and stories found in their language. Because there was no written language, art, carving and weaving took the place of the written word. Witehira, J (2013) quotes Paama-Pengelly (2010) in his thesis on Maori Design Language saying "Art was the way Maori communicated knowledge, ideas and values rather than by written language, and together the art constituted a vital communication system" this shows the significant value art has in culture. With out the objects, histories, genealogies and their stories would be lost.

Art and stories has always been used as tools to instil a sense of kaitiakitanga in children. I choose to take a closer look at masks, as it may be, our human instinct to read art and faces is more effective than the written word. Mask making takes us a step further to linking our identity to the natural world.

2.3 Masks

As babies we are a-tuned to read facial expressions. Our survival as human beings has relied upon the ability to read emotions and understand social cues in order to live in a 'group.'

Masks are present in just about all human cultures, from the western Italian commedia del arte to Canadian Saanich first nations. They often reflect the relationships between members of the community and nature. "As an object, the mask takes on human projections in play, ritual, magic and theatre. As a projection of the self, it can assume an infinite variety of forms--human, divine, animal, inanimate object." Landy, R (1985) Masks are tools for enhancing common archetypes of personalities. They provide a physical transformation that aids both the audience and the actor to suspend their disbelief. R. David (2016) cites Pollock (1995, p584):

Figure: 7

"Masks work by concealing or modifying signs of identity. Although every culture may recognize numerous media through which identity may be presented, masks achieve their special effect by modifying those limited number of conventionalized signs of identity."

Masks enable the audience to interpret movement of the body. By hiding certain facial features and accentuating others, the audience is forced to read all other movements as significant. For example, the slightest head turn or drawn out breath becomes more integral to the audience's understanding of the character's journey. Certain static features such a long hooked nose, can show an archetype of personality such as in the character Pantalone. Pantalone is a Commedia dell'Arte character from classical Italian theatre. The iconic hooked nose is associated with being the wealthy 'scroogelike' character.

Archetypes are storytelling and literary devices defined as " a typical character, an action, or a situation that seems to represent universal patterns of human nature." (Online literarydevicenet. 2013) They are repeating characters and themes that are present throughout all human cultures. Campbell, J (1949) asks the question "Why is mythology everywhere the same, beneath its varieties of costume?" Human development and the experience of living within a community is universal. It is the ecosystems that cultures inhabit, that provide the nuance /diversity of imagery and costume. Each landscape dresses these archetypes to reflect the culture's unique perspective of the world.

In other words, the local plants and animals shape the diversity of costume and masks in both providing the materials, and the inspiration for, portraying these human archetypes. For example, Saanich First Nations make their masks and costumes of origin stories with Raven and Killer Whale out of Western Red cedar wood and Abalone shell, while Maori depicted their ancestry and heritage stories such as Paikea by carving Totara, Kauri wood, and Paua shells. The ink for facial tattoos called 'Moko' by Maori, is made from charcoal produced by burning resinous native trees, Higgins (2013), while Saanich use burnt devil's club wood for their facial paint. In these oral traditions, with nothing written down, these masks trigger important stories that inform and are then carried down through the generations.

In any oral culture, stories are attached to material objects or landscape features or celestial patterns so that people remember a story when they see them. In this way patterns, designs, costume and masks are the tangible links between characters and their audience in oral traditions

Stories are tools and their purpose is to teach and pass knowledge on to their audience. They might contain warnings for physical hazards such as tsunamis, plants that are poisonous, or navigational hazards. They also contain critiques of poor leadership styles or social behaviours not welcomed by the group. Archetypes such as love-struck heroes, jealous step mothers and greedy children will all have their poor behaviours enacted out in a safe way. Masks provide that safety so the performer is able to speak freely and the listener is able to absorb information with a degree of separation from the source.

"The mask also shields the performer and spectator from direct identification with any political ramifications from performances, as it did with Commedia dell'Arte, allowing the performer and spectator to feel safe and immune from the performance" David, R. (2016) cites Fava, (2004) pg25

This sense of safety is what makes masks such a common tool in art therapy. "The mask in theatre and therapy is a projective device."Landy, R. (1985). It allows people to express different aspect of their personality. Mitchell, D (2013) talks about the benefits of mask making and says that the process "invites the creator to explore various aspects of his or her own persona. The activity can be revealing because it takes the mask maker out of the realm of words and employs imagination and non verbal action." Masks enable us to express our feelings through movement rather than words. Art therapists have recognised the power of masks and use them in creating a dialogue of gesture which is a much safer form of expression than facial expression and words, but equally as valuable.

2.4 - Occupational, Art and Play therapy

It is a universal quality that all cultures create art. This form of occupation has been seen from the neolithic cave paintings to contemporary modern art. Humans have used creative expression to communicate emotion, ideas, concepts, genealogies, and tell stories from the beginning of time. Paint brushes, charcoal, and inks have been human companions through out history.

The process of creating is rewarding and fulfilling and recognised by the health sector as a valid form of treatment for both physical and mental health conditions. Zaidel (2014,) notes:

"Art in all of its manifestations (visual art, music, literature, dance, theatre, and more) is an important feature of human societies because it serves as a cohesive symbolic communicative system conveying cultural norms, history, ideas, emotions, aesthetics, and so on. Here, a dual perspective of brain and creativity is adopted, namely the biological ancestry and the neurological underpinnings in the human brain."

Occupational, Art and Play therapy explore some of the scientific reasoning into the natural instincts to create, play and be active. These therapeutic practices provide case studies of people who have returned to health through creative activities. These studies are measurable examples of the benefit of art on a persons wellbeing.

- **Occupational therapy**, utilises craft and everyday activities that rehabilitate physical dysfunctions and is defined as " The art and science of directing man's occupation in selected tasks to restore, reinforce and enhance performance, facilitate learning of those skills functions essential for adaptation and productivity, diminish or correct pathology, and to promote and maintain health" Pedretti,L. (1985)

- **Art therapy ,** is defined as "a form of expressive therapy that uses the creative process of making art to improve a person's physical, mental, and emotional well-being." Arbor counselling. (2020)

- **Play therapy**, is a psychotherapeutic approach using art and free play rather than verbal communication to help children express emotion and build a stronger sense of self. "the goal is to help children learn to express themselves in healthier ways, become more respectful and empathetic, and discover new and more positive ways to solve problems." Psychology Today (2020)

Art and play therapy feeds the whole "hauroa" of a person and literally translates to 'breath of life'. Hauroa is the Maori word for well-being and is defined by the New Zealand ministry of education (1999) as a concept which encompasses "The physical, mental and emotional, social, and spiritual dimensions of health. This concept is recognised by the world health organisation." In western literature, this could also be called holistic health, "a state of complete physical, mental, and social well-being rather than merely the absence of disease or infirmity." Stuckey, h & Nobel, j. (2010 p263)

While being holistic in approach these therapies are still strong examples of art and science being used in unison. These therapies on the surface address issues such as communication and the repairing of mobility but underneath examine the chemistry and biology of the human body. The scientific research behind why these therapies are effective is extensive. One such example is: When we create visual art, our brains produce high levels of endorphins which engage our reward centres and has also been found to reduce cortisol levels. Cortisol is a hormone that regulates the immune system and metabolism (online yourhormonesinfo 2019). This study shows that through the process of making art our brains balances energy levels, fuels our natural reward system and the risk of infection or disease is greatly reduced. These scientific explanations provide the necessary evidence that creative occupation is beneficial to physical and mental health.

Such therapy can be seen as a toolbox of techniques that can break patterns of behaviour and uplift emotional health. A research paper conducted by Voluntary Arts England written by Paul Devlin (2012) looked at a vast number of case studies of people suffering from mental health who have used art as a way of maintaining well-being and, when experiencing an "episode" of low mental health, have used creative occupation as a means to recovery. One patient from this study expressed that "The arts were essential to me. They turned what was a really difficult time into something really positive. They helped more than the antidepressants."

In his summary Devlin, P (2012) says "The trouble with purely evidence based points of view are that they are looking at only assessing the efficacy of the arts as a form of treatment. They are blind to a wider range of benefits." Research in these therapies is often focused on specific conditions with tasks designed to change a certain behaviour or alleviate a symptom. What is not always discussed are the wider interweaving benefits of art and occupation in our everyday lives.

It is well recognised that art and the need to be doing is one of the unique quality's of being human. The benefit of creating art over a life time is, the constant feeding of the mind and hand of new skill and concepts. The accumulation of skills grows confidence and self worth. Kielhofner (1985) quotes Foreley (1969) saying " Humans are unique in the extent to which they have evolved a pervasive and complex array of things to do. Moreover, human doing is often for the doings sake" humans were designed for learning.

As children we learn through play. Research suggests that play is a child's most effective form of communication Ray, D (2011). Playing is a universal characteristic amongst not only humans but also most juvenile mammals. A paper written by Ageliki Nicolopoulou (1997) explores how play-acting forms children's view of the world. She says that "narrative is a cognitively crucial activity because it is a mode not only of representing but of constituting reality and of conferring meaning from experience" Play builds many of the skills necessary for adulthood such as social skills, spatial awareness and is also key to how we form our cultural identities. She continues saying " One of the most striking aspects of this process is the extent to which the construction of reality and of identity are closely intertwined." Nicolopoulou, A (1997)

There is extensive research to support the benefit of creative occupation on wellbeing. The central theme throughout these therapeutic practises is, being creative is part of the human condition. From the moment we are born we have a pervasive need to learn, play and create.

Figure: 8

Chapter 3

DESIGN PROCESS APPLIED TO ENVIROMENTAL EDUCATION

"Design creates culture. Culture shapes values.
Values determine the future."
Robert. L Peters

Figure: 9

Singleton, J (2015) asks the question "how do you engage people in the environment and what do you need in order for them to feel like their time has been of value?

He "identified four goals and related needs that motivate engagement which are: success and need for mastery; curiosity and need for understanding; originality and need for self-expression; relationship and need for involvement with others." Singleton uses The head, heart, hand model as a way of simplifying what is key for creating an emotional connection with out heavey accademic jargon. With this approach tasks are designed with the question in mind; does the participant use their head, hand and heart in the process of this task?

Singleton's Model is rooted in ocupational therapy philosophies. Pedretti, L.(1985) States that "Occupational therapy has been founded on the idea that being engaged in activity (1) restores health in individuals suffering from either mental or physical dysfunction and (2) maintains the well-being of the healthy individual." This second point is what sets Occupational therapy apart from other therapies as its practises are not just for treatment but also for maintaining the health of an individual.

The benefit of using the head heart, hand, model in the creation of craft exercises, for an outdoor workshop, is it enables a multi-sensory approach and allows children to learn through play. Singletons model has the ability to blend these two seemingly unrelated fields of environmental education and artist design.

The Head refers to engaging the cognitive domain through academic study, inquiry and understanding of ecological and sustainability concepts. Hands refer to the enactment of the psychomotor domain for learning practical skill development and physical work such as building, planting, painting etc. Heart refers to enablement of the affective domain in forming values and attitudes that are translated into behaviours

When using your "Head" in a creative design process, you follow a logical order of steps that require a multitude of decisions. Jung Soo Lee and Charlotte Jirousek (2015) summarised the apparel design process as "three steps: [1] problem definition and research, [2] creative exploration, and [3] implementation." The process for making involves first having an idea or image in your head, second solving the artistic and logistical problems with research, i.e., How do I create a physical representation of my idea? What materials do I use? Where do I find/gather them? Finally, implementing those decisions and realising the idea. The role of the designer is to process information and come up with a concept that fits the parameters of the brief.

"Whether derived from a conscious intention or driven by subconscious sequential doodling, design concepts are developed through a process in which the designer perceptually and conceptually proceeds by processing information.". Lee,J and Jirousek,C (2015)

The costume design process could be boiled down to, how you navigate decisions, to arrive at the best outcome for the production. Looking at the parallels between engaging people in pro-environment behaviour and a design/making process we see that both are fraught with endless amounts of choices and research. Designing is problem solving and helps build the understanding "that problems and questions can have multiple possibilities." Baker, D (2013).

Canadian researcher, N. Stanger, talks about how the paralysis of choice is affecting our connection with the natural world. "Choice is ubiquitous in the western world, yet in contemporary times we often find ourselves choosing easy paths, unsustainable solutions, and escapist experiences." Some of the reasons why a design process in any discipline is so valuable an experience for children, is it; teaches how to visualise an end out come; creates the impetus for self directed research and lets children test their decision making ability. The skill in being a good designer is in being able to see the whole process, foresee the difficulties that may arise, and put in place strategies to overcome those issues. What governs our decisions are our memories of past experiences and relationships. Each of us has a moral code and history which our behaviour reflects and, therefore, influences the decisions we make. Our emotional reaction is at the core of our decision making processes.

Figure:10

The “Heart” in Singletons model refers to emotional intelligence. He reiterates in his work that “It is community relationships that transform pointless lives into directed, meaningful experiences.” Relationships with materials and co-creators are of equal value. My own experience of theatre work is that micro-cultures develop quickly. The united purpose of getting the show up brings the “group” together, and a kind of language is formed through shared experience. Communication between technicians and directors begin to sound like code as colloquial shortening of concepts, ideas, and construction jargon are mixed together. I’ve found that often these conversations can only be understood by those who have started at the beginning of the project. This new ‘language’ can help create a sense of belonging to the project.

The design process has many skill cross overs that can be applied to everyday life. One of the skills that is beneficial to both designers and scientists (and, therefore, environmental education) is the ability. To commit to a. project when there is a feeling of constant ambiguity, which could also be described as not knowing how you are going to achieve something but still having the instinct that it is possible. Learning to deal with this state of uncertainty is essential in articulating new concepts and constructing metaphors that enrich and simplify ideas, which is what designers, scientists and environmentalists wrestle with on a daily basis, thinking beyond the realms of possibility.

Tyler and Ilkova (2012) state: “The ability to tolerate ambiguity and uncertainty during the creative process is an important mental trait.” This concept of dealing with the unknown is also useful for mental health. By dealing with ambiguity in a safe artistic platform it aids in the development of coping strategies for dealing with the complexities of unforeseen situations. There is nothing more uncertain to us now than the future health of our planet and climate patterns. These opportunities to wrestle with concepts and ideas is the essential training ground for children to adapt to the upcoming challenges in the future. Training our hand to be tools so that we can build a better future is also essential. If our minds can design new possibilities then it will be our hands that will make it.

The “Hand” refers to the practical, tangible elements of design. Without a skilled hand to make the proposed ideas, they will always stay imaginary. The hand is what connects the ideas to the body and therefore nature. The hand feels for textures and quality of material to achieve an idea. Every costume maker will tell you how important it is to walk through a fabric shop and lay your hand on the material to feel for its nap, weight, drape and pile. The same is true when your materials are found in nature. Your eye and hand work together to seek out the right texture, colour and pattern of natural materials. Because of this engagement and observation of the fabric of nature a more complex understanding of the world is formed.

In order for your hands to know that they have found what they are looking for when they have felt it, there must have been someone who shared knowledge beforehand. Craft skills cannot be learnt unless a child has exposure to ‘the making process’. They will not know what is possible unless they have observed from others the potential they hold in their hands. This again reiterates the importance of community and intergenerational learning. To train a child’s hand, there must also be teachers with the skills to learn from, which raises the question, ‘What could that training look like?’ Could it be in the form of a mask making workshop?

Figure: 11

Chapter 4

METHODOLOGY and JOURNAL

"Things won are done; joy's soul lies in the doing."

Cressida in Troilus and Cressida
William Shakespeare

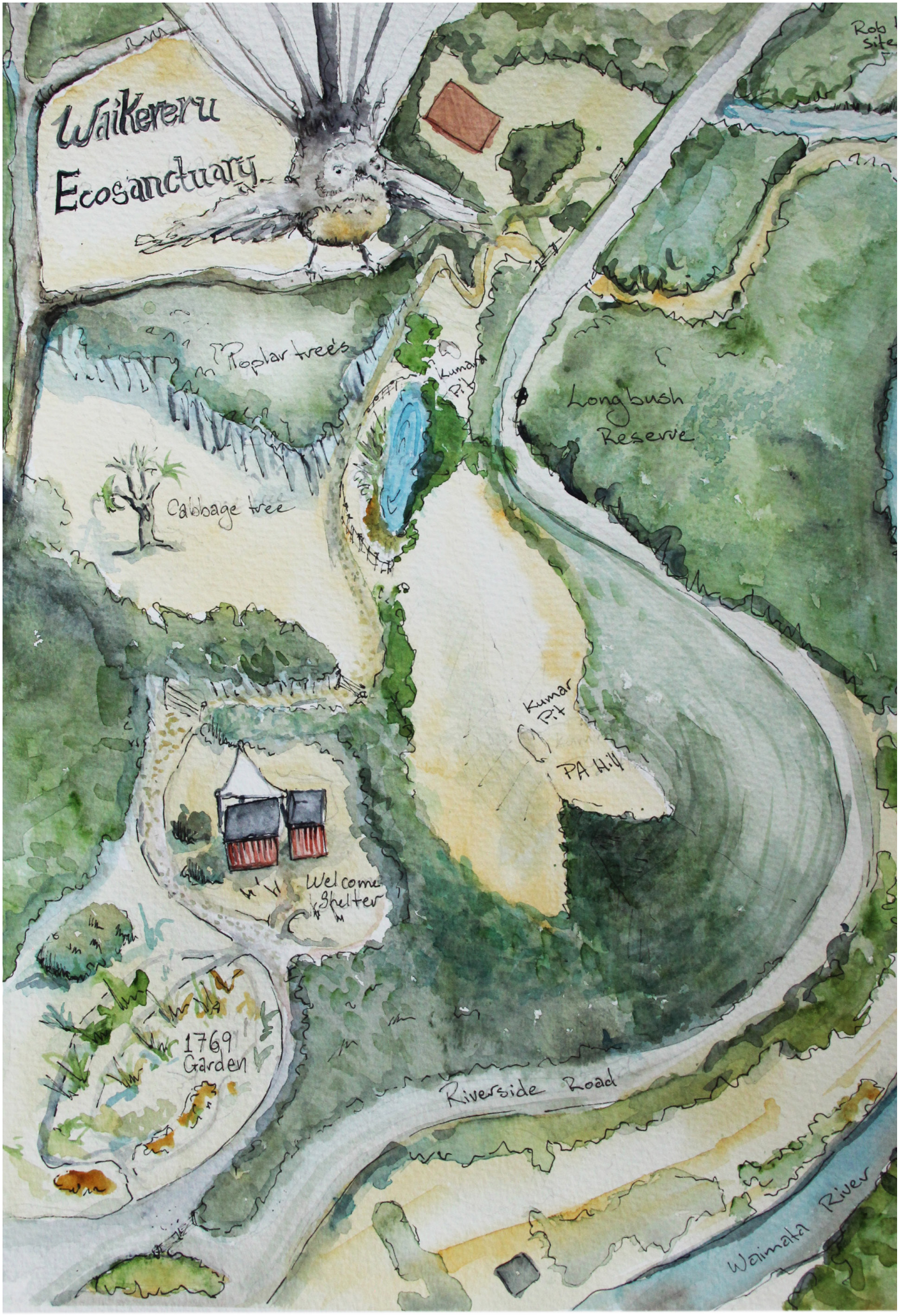

Waikereru
Ecosanctuary
Poplar trees
Kumar Pit
Longbush
Reserve
Cabbage tree
Kumar Pit
PA Hill
Welcome
Shelter
1769
Garden
Riverside Road
Waimata River

Figure: 12

The methodology through which I tested my hypothesis came about because of a fortuitous meeting with two key practitioners in environmental education; Waikereru Ecosanctuary and the Jarrat's.

Waikereru is very close to my heart as it is one of the neighbouring farms next to where I grew up as a child. I am familiar with the landscape and species. The creation of a workshop gave me an opportunity to test my ideas and if successful, the potential to share my craft and connection to the land with students so that they might feel a spark of connection with this place too. Three outcomes were advertised for the workshop, which was offered to a maximum twelve children between the ages of 8 and 11:

- To create a mask and character
- To collaboratively create a story that will be performed and turned into a short film.
- To have fun and enjoy the outdoors.

The workshop was run by myself, Bo Jarratt (daughter to Pete and Ellen) and my mum, Virginia Penn. In the following journal-style recount of the events, I explain my decision-making process, the outcomes and analysis of each day. This journal provides the evidence for my observations. My evaluation was through oral feedback given by the children, which I filmed at the end of day three. I also asked for feedback from the organizers of the ecosanctuary.

My plan for the three days was:

- Day 1 – introduction; orientation with the landscape and species; design and draw mask; build base of mask; games to increase familiarity and comfort with the landscape and each other.
- Day 2 – decorate mask using natural found objects, e.g., leaves and feathers; drama games and dance routines to build up skills in character/archetype development and storylines; games again with ecological principles embedded; water fight to cool down!
- Day 3 –costume creation and dress up; selection of one assistant to wear prepared costume; development of the story line; film movie; evaluation with the children at the end of the day.
- Follow-up. Children and staff were sent the final edited movie.

Day One - Design and Dream

Figure: 13

A gentle cloud of dust was billowing over the tops of the trees as the parents drove up the gravel road to deliver their children to the three day mask making workshop at Waikereru Ecosanctuary. No one knew what to expect and I was a little bit nervous. I had planned a great deal for the 3 day workshop and didn't know how this group of youngsters were going to react to the challenge I was about to set them. I had spent the past 10 days prepping: making each student a face form out of plaster of paris and gathering a range of materials that could be needed.

The children arrived and after a few name games and a round of Pony up/Pony down, we were off. We went to the Longbush Reserve, which was about a 10-minute walk from our base at the Waikereru welcome shelter. Along this walk, I set up a system so that when we were in the bush if they heard my bird call, they were to repeat the call and come back to me. I didn't want to get down to the bush and lose everyone. This allowed for both some self-exploration as the participants could wander ahead and also a sense of collective responsibility for one another in the bush.

The light changes as we enter the reserve. It's midsummer on the east coast of New Zealand so the mornings start off fresh, but the heat kicks in about an hour after sunrise. By 9am as everyone arrives it's already baking. Entering the closed canopy of the Longbush Reserve is like entering a cave of trees. The air is cool and damp. The light was mottled and we pushed our way through the thriving Kawa kawa. We were enclosed and safe from the sun. To begin with, we sat down in the leaf litter and had a chat. I explained what was happening over the three days: that we were going to design a mask which was to be their character in a movie. I asked them to draw their inspiration from the forest.

I had brought with me the Spiderwick Chronicles Field Guide by illustrator Tony Diterlizzi and Holly Black which has drawings of imaginary creatures that inhabit the story and whose costumes are drawn from plants and animals. I told the participants that they didn't have to be a creature they had seen, but could also be one they imagined they might find in the bush.

I set up a game where I played a piece of music and then shouted an animal and they had to move like that creature. The music really helped to loosen up the children's movements and gave them some clues as to how they could move. I noticed that to begin with, their movements were quite small and I could tell that some children were still feeling a little awkward so I got involved and started to really exaggerate my movements which gave them confidence. Seeing their tutor making a complete fool of herself meant that it was then safe for them to do the same and they began to get into it. I switched songs to trigger a change in character. For example, I played an ethereal piece, Howl's Moving Castle theme song and said: "Now you're a moth and floating around the forest to lay your eggs." Switch- The Black Keys drumbeats starts up. "Now your a rat! with twitching wiskers and long scally tail." Switch- the tranquil melody of Claire de Lune floats though the trees. The children become Puriri catapillars and curl into a chrysalis on the forest floor. The music stopped and they spent a minute in silence in their own thoughts, taking in their surroundings. It was a nice moment. This group of strangers had relaxed into each other's company and had time to dream about their character.

They dusted the leaf litter off each other's backs and came and sat with me. Their next challenge was to design their mask. We had brought boards and paper with us. They all picked up a pencil and started drawing. Some participants instantly knew who they wanted to be while others struggled and felt a little inhibited about not being able to draw very well. I talked about masks and developing characters from creatures they had seen in the forest and how we were going to be finishing our masks. The final designs would be covered in leaves, lichens and feathers we collected off the forest floor and part of the challenge would be finding these materials that fitted with the creature they wanted to create. I showed them a rubbing technique of placing a leaf underneath a piece of paper and pencilling over the top. This meant they were able to get lots of detail into their drawing without having to spend hours sketching it in by hand.

I observed that it was the older children who seemed to be having the most trouble deciding what they wanted to make. The oldest in the group was eleven and she seemed to be the most conscientious about how this decision was going to reflect her. She wanted to make an elf after having looked at the Spiderwick book. Her stumbling block seemed to be that she wanted to make something that looked beautiful but didn't feel she had the skill to capture it. The younger ones who were 8-9yrs were much more relaxed in picking their character and looser in drawing style to render their idea.

Leaving the Reserve now armed with visions of characters in our heads, we set off back to the base for morning tea.

Mask Making

Refuelled, we started the next session —making the masks. The process involves building the features of the face out of tin foil. For example, two of the children wanted to be wolves so they were going to need snouts. Tin foil is an excellent material to work with as it can be molded and will hold its shape and at the same time is very light. It is not, however, what they had expected and sculpting it requires a lot of ability to think three dimensionally. Starting with a flat piece of tin foil that is roughly the right volume, you scrunch the foil so that it starts to form the shape you want to create. With the wolf snouts, we pressed the scrunched snout over the nose on the mask base and smoothed the tin foil so that there was a seamless join between the base and snout. This was then temporarily attached with a piece of masking tape. Once all the features were built and secured with small pieces of masking tape we used a papier-mache style technique. Instead of using paper, I like to work with a product called 'chux cloth' which is a brand of dish cloth that is porous and inexpensive. The dish clothes are cut into small narrow strips and soaked in watered down PVA glue. The strips are then laid over the top of the tin foil and mask base and left in the sun to dry. Some children were really keen and able to visualize what they wanted to achieve and had the confidence to just start ripping tin foil and scrunching features. Others felt daunted and inhibited to start. Once I said "go for it" they all started talking at once asking questions out loud about what they were going to do. Already friendships where starting to form so if they weren't able to ask me questions because I was talking to someone else, I could hear conversations going on between them as to how they thought the other person should achieve what they wanted to.

It was interesting observing the different behaviours in those that were feeling inhibited. One girl decided her mask base was all that she wanted. She didn't want to change her face at all. There was a total lack of engagement in the process. I think she didn't like the messy quality of it. She didn't want to get her fingers in the glue and the chaos of the tin foil process was not her style.

I had to manage the vulnerability of these few students, who began playing up as if to deflect from what they deemed unsuccessful making attempts; resisting guidance and insisting that I help or do the majority of the sculpture of the tin foil. For these students, I had to adapt my approach and suggested they begin choreographing routines they wanted to include in the film. They excelled in this area, and were confident in teaching these routines to the group.

This task would not have been very successful without the help of my mum and Bo. The children needed a lot of support and time management in order to get their features made in an hour and a half. A 1 to 4 ratio of adults to student would be the maximum number of students you could successfully assist and have every one progressing at a similar rate. They all had a steady stream of questions and challenges they wanted to overcome to create the vision they had in their head. I did enjoy listening to these conversations. The character development started to happen as they described what their creature was capable of. One of the boys decided he was going to be a platypus postman and deliver all the news to the other forest creatures.

By lunch time we had done it. Everyone had a mask with features drying in the sun. They had all designed a character and made their face with features that interpreted the personality they had imagined their character to possess. We were leaving plot discussions to after lunch because from my own experience as a child. I remember finding it easier to make a story up when I knew who I was, in order to decide how the story would unfold.

As we finished off our lunch, I began to ask them questions about what movies they watched and what kind of plot structures they noticed in the movies they liked. We established that you needed a beginning which introduced your characters and the setting. Then a problem that arises, which built to a moment of tension or conflict, which could be resolved. We talked about what problems or obstacles could be facing the forest we had been in this morning. Their suggestions were things such as logging and invasive species.

We looked at what characters we had created in the group and we had two boys who had made wolf masks and they wanted to be the "bad guys." so our story began to form at that point and I left them with just that— a brief introduction to story structure— then took them off to play Go Home Stay Home in the long grass. This game would gel relationships, create a landmark and set that represents home/safety in the natural world and allow for some for real play at the end of the day.

The object of this game is to get back to base without getting caught. The game was made more challenging by the length of the grass as it made running near impossible. You could also sneak up undetected very carefully stalking home base like a pack of lions. The home base we had to get to was a cabbage tree in the centre of the field. This tree became an important landmark in the area as it was 'the safe place' you had to get to. On the 3rd day when discussing where the setting for the climax of the film should take place it was agreed that this tree should be the setting. This tree which had started off as insignificant had begun to gather a story and became more meaningful to the children.

The day was nearly over but we had been sitting at the base of the hill and looking up at its shimmering peak, and the children decided they wanted to get to the top. The base of Pã hill was where a small unfortified Maori settlement was. All that remains as evidence of this settlement are the kumara pits. Galbreath. R (2008) describes kumara pits as underground storage of tubers such as potatoes and kumara. The pits were enclosed either with a roof or earth to keep the tubers fresh over winter and store seed for spring planting. The pits now look like a deep impression in the ground.

Getting to the top of the hill stinking and sweating, we all collapsed in the kumara pit. The view from the top of Pã hill is spectacular and really gives you a sense of scale to the valley. It created a perfect opportunity to talk about geology and the history of the landscape and how rain falls and rivers form. The kumara pits inspired discussions on the settlement of the land and the different waves of colonisation. There was also a deep feeling of beauty and companionship.

We decided to slide back down the hillside. It is incredibly steep and covered in dry grass which makes an excellent slippery surface. The giggles suddenly turn to shrieks as one of the girls had slid through a bumble bee nest and gets stung on her eyelid. The shrieks escalate as the pain kicks in and she realizes what's happened. She was really brave and by the time we get to the bottom of the hill the sobs have subsided and she stoically walks back to base with one hand over her eye but with no tears. The parents rolled back up the road. Exhausted, over heated and hungry the children collapsed into their cars. Home time.

Day Two – Getting into Character

The second day started in a change of plan. The generator to run the hot glue guns had not made it into the car to be brought out so plan B took over to cover the time it would take to go back and get it. I had picked a load of plums the night before and designed a version of the game Rob the Nest. The students were bouncy and fizzing. All grievances from the day before were forgotten. The bumble bee sting hadn't swollen up, everyone seemed to be ready to take on whatever challenge I had to throw at them.

We walked back down to the Reserve. This walk back and forth was really important. I found it was then that the children would spot things and ask questions. For example, they noticed the gravel had shell prints in it. Some of them knew about fossils and some of them didn't. We had a conversation as a group about how fossils are formed. If I was to do this workshop again it would be great to be paired up with a scientist or someone who can explain these concepts better than I could. I felt I didn't have the scientific background to be able to give them the detail that they could have absorbed in that moment.

The walk between the sites also provided unstructured times so they were able to talk to me more as an equal and not as 'student to tutor.' I let them have free rein except with a few rules about crossing roads (they were to wait for the group). I felt like in giving them that trust in these times they were more receptive to me when I did give them instructions.

Figure: 14

Rob the Nest

We slipped back into the Longbush Reserve, a basket of plums balanced on my hip. I had picked the game Rob the Nest as a way to introduce bird characters, claim space and make it their own and teach adaptive behaviour. I broke them into teams of two and gave them six plums each. "Go and hide your eggs – you are a young couple of ground nesting birds and your other team mates are the predators… You need to hide them so that your eggs stay safe but also so you can access them when you need to cache the eggs you find from the others… the team at the end with the most eggs wins. The site we had chosen to play in had a dug out stream bed with a bridge running over the top. It was an excellent site as it required a lot of balance to negotiate the uneven terrain. It was the perfect natural jungle gym. I brought my speaker out. "When you hear the music, that is when you can rob each other's nest. When the music stops you have to bring your eggs back to me for counting." Muse's Revolution drumbeat kicks in and the children are off.

The music heightened the drama and excitement of everything. Running around they hunted for each others' eggs. All sorts of different strategies started to emerge. One of the groups decided that hiding the eggs is the most important, while another put all their effort into finding other peoples'. Another group divided, one person stayed to guard while the other hunted. This game builds experience in strategies for survival and exposure to the process of evolution.

I stop the music and everyone brought their plums in. There was an audible groan from some groups and a glowing sense of achievement from others. They were all busting to do it again. I could see the plans formulating in their minds. They were hooked on the adrenaline of the game. A winner was announced, the plums re-divided, and the game started again. This time there was definitely a more determined sneakiness about their plans. Their eggs were hidden better. They are making sure someone had an eye on where their competitors are rummaging. Round two took on a new level of competitiveness. The music started and they were off.

It was time to head back to base for morning tea. The generator had arrived and it was now time to divide the group in two. Five stayed with my mum to apply the leaves and render their masks; the other six came with me to do some drama games and character development.

Character development

We sat at the base of the cabbage tree and began to discuss what our characters could be like. Since masks hide facial expressions, movements become more important, words are less necessary, so the movie was not going to have any dialogue. I turned on some music and we started to discuss what song they thought fitted their characters. The wolf boys liked Pink Floyd and the song Money, so we came up with some moves that suited the music. There was much strutting and foot tapping. I worked with them to synchronize their movements so that they could feel the difference between what the wolves character felt like compared to the movements of some of the bird characters the girls had designed. The girls had chosen a classical piece and choreographed a synchronized dance routine that they had observed in a bird mating ritual. They performed their small routine to the group without any hesitation or nerves. This meant they then had a sequence of movement we could film for the movie.

Figure: 15

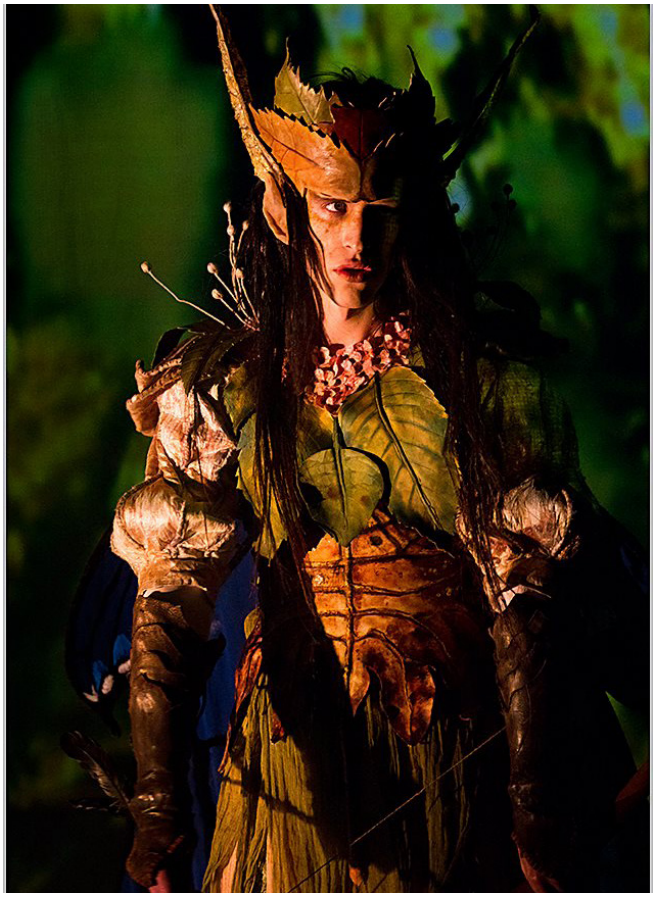
Rendering

Switch over time. The mask rendering table was a scene of happy and content creativity. We had gathered dry leaves from our walks back and forth from the reserve. The ideal leaf is one that has dried out but still has a suppleness. The leaves that just crumble aren't as effective. The children had gathered colours that they liked. There was a spectrum of yellow, reds and browns with highlights of green lichen. Part of this challenge was to find materials that suited the texture of their chosen creatures. I had also brought a bag of feathers I'd collected over the years so the girls making birds had latched onto those. Leather scraps from old projects were also used to cover bills and the inside of ears.

We had a good system going where the children had to play around with the contours of their mask and figure out what shapes and angle of the leaves best suited their mask, and then they would come to my mum or Bow and have it glued on. My mum made little leather pressing pads on sticks. Often you need to hold your leaf in place for a moment while the glue sets and this is when you are most likely to be burnt. With the pressing pads the children were able to do that without getting hurt. This was also a nice moment to be talking to them about plant species as they were looking at the different leaf shapes and textures. But it wasn't just for identification purpose but as an artistic expression. We spent most of the afternoon adding the final touches to our masks. Those that had got all of their leaves on could add highlights and shadows with a little paint. We had two stations set up 1.) for the gluing and 2.) for the paint. I had told them that they should go easy on the paint as the beauty of their masks was the way they had placed their leaves and feathers. Some listened while others didn't and ended up painting a considerable portion of their mask. The sun was beating down on us and the paint was drying before you could get it from pallet to mask. The children were all getting hot and had been promised a water fight the day before. They had come prepared. I told them they could get their togs on. With the left over plums from rob the nest, I set up a plum bobbing relay. The afternoon descended into water warfare. Every vessel became a water throwing weapon. The parents rolled up the drive and were ambushed by their feral children. That day everyone went home soaking wet and covered in paint.

Day Three - Movie Making

I lugged the trunks of costumes out of the truck and set up a costume dressing station. The trunks were filled with the costumes I had made for all our own home movies and puppet shows. I helped guide the resolution of the story by proposing that the saviour in our story was going to be an elf called forth from the cabbage tree. I set Lorengorm (my major work costume piece from my diploma in costume construction at Toi Whakaari) up on a mannequin so that as the children arrived there was a display of vintage trunks belching costumes and Lorengorm blowing in the wind. This costume came from the Spiderwick Field Guide, written and illustrated by Tony DeTerlizzi and Holly Black. The children instantly recognized the costume from the book they had been looking at for their own inspiration. I hope that it inspired them to see the possibility to take an image and turn it into real life.



The dress up frenzy began. Taffeta and fur came flying out. Pieces of my own childhood took on new life as the kids found creative ways to portray their character, wearing things upside down, back to front and side ways. I had expected the boys to be the harder kids to dress but they were really easy and not inhibited to wear costumes. The girls were much more fussy. A couple of them were less comfortable and needed more positive reinforcement to get into a costume.

All frocked up, we set off. I knew the challenge was going to be the waiting around for the group while one or two of them were being filmed. In order for everyone to get an equal amount of screen time I broke the group up into two. Half went with Bo and rehearsed some of the end scenes around the cabbage tree while I took the characters who had decided their home was going to be at the top of the Pa up the hill. The secret to the filming was in being able to read the children and figuring out the best way to get a performance out of them. For example, with the two boys who were the wolves. They had developed a good friendship in the two days. One of the boys was far more bold than the other and I found the best way to get them to work at the same energy level was to direct by doing the action myself and really over exaggerate it. They felt comfortable doing something that could be perceived as foolish after I had done it first. The bolder boy was good at making suggestions and I would leap on those as great ideas. Slowly the other boy found his voice and started making suggestions as well. The girls were also challenging to direct. Their best performances were when they made the suggestion and I went with it. If they had imagined what they were going to do they had a lot more energy behind their own ideas than verbal direction from me.

Figure: 18

I had to keep the verbal direction going to spark ideas, but their own suggestions always had more impact and energy.

We moved from Pa hill to the Reserve and filmed the chase scene. This got everyone's energy up. The direction was just 'run past me screaming and waving your arms.' The first time they did it there was no energy behind it, and they ran the wrong way.

I gathered them back and told them that was pathetic! "You weren't scared for your life, your homes weren't being ravaged by beasts" I also explained they needed to run right past the cameras as I was focusing on their feet as they passed me. We did it again and the possums nearly fell out of their trees. They shrieked and charged like a heard of wilderbeasts. This really lifted everyone's energy.

After this we shot a bunch of dance scenes. The energy and enthusiasm for these scenes was amazing. I brought the music over and this added another level to the performance as it kept the kids in time with each other and helped inspire them to dance and be silly. We were back at the site where we had played rob the nest the day before, so the children were really familiar with the location and also had their favourite places found the day before. They had stories that were inspired by the layout of the land. The boy who made the platypus mask wanted to be the postman but had also found a little pool in the creek where he had hidden his eggs the day before. He fashioned himself a fishing rod and wanted to be filmed fishing in the pool then hearing a disturbance in the distance and dashing off with his postman bag. The girls had found a tree they could climb, which was perfect for them to be birds in – there was a shaft of light, which made a circle like a nest.

The afternoon was spent in the shade of the poplar trees. We were reaching the climax of our film when beast and creatures of the forest where going to come together and offer the friendship cookie. The afternoon shots were great as they included everyone as a group. They could all be wacky in their own way, calling forth the ancient cabbage tree elf. While those that wanted the spotlight could come to the front and give us some fancy footwork, others could blend in and still have fun and be included.

The main purpose for this whole three days was to have fun in the forest. The most important thing to achieve was that these children had an experience that would resonate with a happy memory: the feeling of being linked to the natural world and the creative project they had made with their hands. They each had their own strengths. Those that were less happy with performing were given other jobs such as chief grips who had responsibility for carrying props and keeping track of the time, so we knew when to go back for lunch. Each child was integral to the outcome of the story and finished product of the film.

Feedback from the Kids

I'm sitting on a rug with the eleven children wearing animal masks. They are all talking at once, putting their masks on and then taking them off to show the person beside them some feature or detail that they think captures their best effort in the past three days. I try to gain their attention, but they are far more focused on their own conversations and sharing what they have made with their friends. Eventually I'm heard and ask them if they enjoyed the last three days? There is a resounding, "yes!" as all heads nod in agreement.

I ask them: "Which part was your favourite?" The suggestions came flying out: "I liked the movie making"; "I liked Rob the Nest!"; "I liked the mask making!"; "I liked the water fight." Then one of the shyer boys raises his hand and says he liked walking up the hill! I had found out during the three days that this child usually hated going out for walks and had not spent much time in the NZ bush. His achievement was getting to the top of this incredibly steep hill and looking out across the landscape. We went up to the top on our first day and throughout the three days he kept asking if he could go back up the mountain. It was a huge success for me to have found a connection with the kumara pit at the top of the hill. It was gratifying to see his growth from being reluctant and a little nervous to claiming it as his spot and deciding that is where his character was going to be filmed. I then asked them: "What part would you tell your friends about when you go back to school?" One of the boys with the wolf mask said, "you don't have to tell your friends because you can show them" and he looked down at his mask and then put it on and gave me a wolf's stare.

Since I had first met these children, we had gone from shy and unable to say our names in front of each other to a cohesive group who weren't afraid to perform, dance and become another character. The mask was the link and physical trigger of memory, which they could use to recount their experience. I then asked: "What would make it better?" The responses included, "I want to make a longer movie, a whole Netflix series!" to which there was a murmur of agreement: "yeah, a full feature length movie." Then a boy in a platypus mask said, "yeah, it was too short," which for me was the best feedback. These children unanimously wanted to keep going. They would have been happy to spend the whole week out at the Waikereru Ecosanctuary playing in the bush, making movies and masks.

Figure: 19

Chapter 5

DISCUSSION

"What we bloodlessly call 'place' is to young children a wild compound of dream, spell and substance: place is somewhere they are always 'in', never 'on'."

Robert Macfarlane, Landmarks (2015)

My research has suggested that play, fun and time are the most essential ingredients for engaging and motivating children. The advantage of a costume and theatrical design led environmental education program is that it centres the program around play and allows an interdisciplinary blending of science and art.

Through play and the development of characters the children were able to explore their own personalities by adopting a different persona. By doing so, I observed, they discovered some of the universal archetypes, for example, the trickster. The trickster is a classic archetype of someone who is neither bad nor good but has seemingly gone down the wrong path. This character typically shows where there is an opportunity for correcting their behaviour or inserting doubt as to what the correct behaviour should be. Trickster allows for rethinking of seemingly fixed concepts. In the discussion about how the story was going to resolve, the children did not want the wolves to be "bad." They understood that wolves in western literature are often portrayed as "evil" characters instead of simply predators in a food chain. They wanted to involve a form of transformation in order to resolve the story. With the simplicity of feeding someone, they used the magical cranberry cookie as a theatrical device to show that the wolves had another side. Transformed they joined the rest of the forest creatures in keeping the forest as a functioning ecosystem where all creatures could continue to survive, including the wolves

These concepts of universal character archetypes were not openly discussed in the film planning session, yet the children still had a subconscious understanding of their influence in our culture and society. This is an example of how costume in the form of a mask has triggered an opportunity to explore this idea and delivered in a way that the children understood. Applying the metaphor of the trickster in environmental education, it is possible to discuss how changes in the environment require that we change our behaviour. While still remembering that those who haven't adapted aren't bad. They shouldn't be demonized for not having had the opportunity to connect to nature. The trickster reminds us that there is hope of change and to keep our humour.

Figure: 20

Singleton (2015) discusses what is driving our behaviour and identified four key principles for engaging children; the first being "Success and need for mastery". To ensure that the children succeeded in the mask making project, time management was key. The children all progressed at the same speed while making individual masks that retained the child's style and character. I feel that this workshop would not have had the same response if the tasks given were not at the right developmental skill level for the children or if there was inadequate tutor support to guide the children to success.

The ratio of 4:1 child to adult felt like the maximum number that we could have supported, and all progressed through the process at the same rate. This workshop would not have succeeded without the skilled support of my Mum Virginia Penn (occupational therapist) and Bo Jarrat(drama student).

Singleton's (2015) second and third points was "curiosity and need for understanding; originality and need for self- expression" The mask process gave the children artistic freedom and was practically challenging but ensured success due to the preparation of the Plaster Paris head form. These forms allowed the mask to be held in a comfortable position when adding facial features and ensured the masks would fit and be comfortable to wear. By rendering the masks with leaves and lichen found on the Longbush forest floor, the children's chosen archetype characters became endemic to Waikereru. Joseph Campbell (1949) remarks that "all cultures have universal characters dressed in different clothes." The children had to make their own observations on texture, colour and nuances in plant material to make decisions as to how to portray their character, which also builds upon their knowledge of different plant species and where to find them.

I endeavoured to make each task roughly an hour with some of the creating sessions extending to an hour and a half. The day was punctuated with games. These games instilled a sense of achievement whether it be getting to the home tree without being caught or being the most successful nest robber.

The locations where the children had felt this achievement became places of significance. These natural features were given roles in the film that was created. Their curiosity was heightened around the settings we played in. The experience of climbing the hill to the kumara pit stimulated conversations on geology, water courses and the history of the different waves of colonization.

This workshop provided the opportunity to form new "relationship and involvement with others." Which was Singleton's final point for igniting children's engagement. However, the workshop was only three days so these new formed friendships were fleeting.

This workshop may have been enough to spark an interest in returning to the outdoors and empowered some kids to walk up hills, but without constant exposure (my research indicated that this kind of contact needed to be around 200-300 min per week) it will only stay a small seed and a strong connection will not take root. The masks and the film are very useful in rekindling the memories of the experience, but they alone are also not enough to develop a long-term connection.

An organisation that is establishing a model for long term connection with students who have participated in environmental workshops is' Action for Conservation'. I have been involved, volunteering on some of their summer camps, running a smaller version of the mask making workshop with their young adult participants. AFC share similar philosophies with Waikereru ecosanctuary and their education programs are centred around experience based learning.

Action For Conservation are a UK based charity, their mission is to empower the coming generation to make a positive difference in reversing some of the ecological damage and climate breakdown and connect young people back to nature. They provide a range of workshops which are hosted in school through out the UK and are undertaking a major project that aims to restore 322 acres of farmland to forested habitat on the Penpont estate, Brecon Beacons, Wales. The hope is to create an ecosystem that has a much higher biodiversity and in the long term is still able to produce food. The Youth Ambassadors have gone through the AFC's holiday program and have shown enthusiasm to be a part of the restoration project. The point of difference in this project is that the students will be involved in the research, planning and implementation of a course of action. The Ambassadors are supported by a team of conservationists, farmers, and locals. At present the Ambassadors meet every couple of months for workshops and discussions at Penpont estate. ACF are looking at the long term picture, both in staying connected to the children that have been part of their workshops and also the environment they are conserving.

Figure: 21

In reflecting on how I could improve the workshop in future, I would start by looking at running a program over a longer period of time with the same children returning to the site. I would look at asking questions around quality versus quantity, is it beneficial to both environment and the community; to offer access to a large groups of students; or smaller groups with closer contact time with tutors.

To provoke this level of engagement however, it is essential to have people who have the time and skill set to facilitate this learning and regular contact with the natural environment that is both structured and free play (Schlembach, S. et al. (2018 pg82-101). Educating children in an environment where there is an instant practical application of this knowledge reinforces its relevancy. This ties back into the intergenerational teaching techniques in keeping with the Maori concept of Ako, reciprocal learning that affirms the value of shared experiences and relationships. Further research could focus on whether having an arts lead environmental education program could be linked to school curriculum. By being part of the weekly school routine could this offer the experience to a wider range of students, who would not otherwise have access to nature? Waikereru Ecosanctuary have begun relationships with some of the local primary schools in the Gisborne district. Wainui Beach school have recognised that the need for 'creative play' in their school curriculum and been involved since 2019.

A hypothetical project that has always seemed appealing to me is creating an outdoor theatrical puppet show. I could see the potential to weave in school curriculum with performance design, in an outdoor environment. The creation of a theatre performance would provide a great opportunity to experience a real life application of both science and art.

Chapter 6

FOLLOW UP OF THE WORKSHOP

Sometimes you will never know the value of something,
until it becomes a memory."

Dr Suess

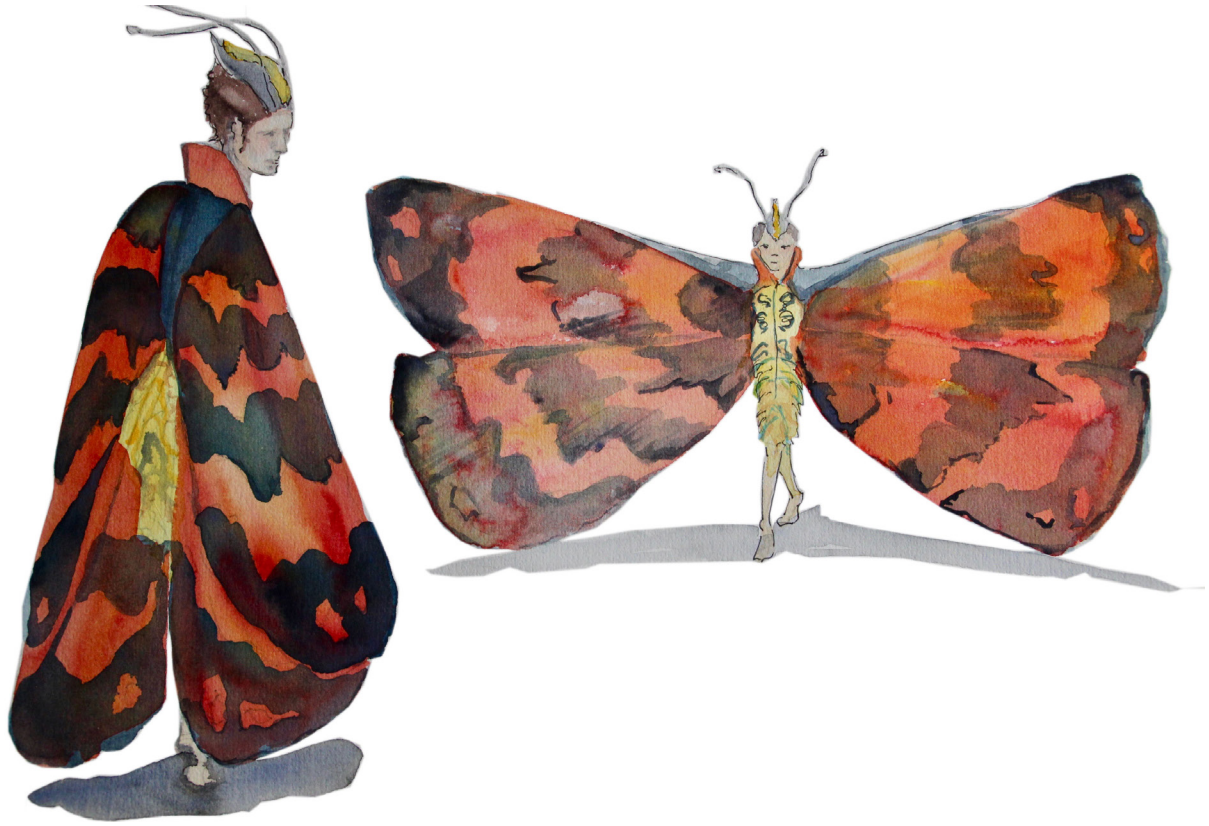


Figure: 22

As an extension of the workshop and to further my ongoing collaboration with Waikereru Ecosanctuary, I was commissioned to create three new costumes for the wild lab Tiaki Taiao programs. Waikereru Wild lab Tiaki Taio had already been using costumes as a teaching aid. The Jarrat's observation was that the children were more engaged when they could see, touch and talk to the creatures they were learning about. Waikereru Ecosanctuary secured funding from Air New Zealand Environment Trust to fully implement the program during 2019 to 2021 to create five more individual character costumes each relating to a different workshop theme. I was commissioned to create a Moth, Kereru (Wood Pigeon) and Mayfly. I invited Ruby Gibben who is a puppet maker and friend to be part of the Kereru and Mayfly creation. Ruby created the Mayfly puppet and kereru head piece. My mum, Virginia Penn was also instrumental in the completion of these costumes.

In order of creation:

Notoreas isomera Moth – This costume was designed and made for the 1769 Garden education workshop theme. This pilot workshop theme discusses the history of European settlement and the impacts on the environment that have occurred in the 250 years since that first interaction between Maori and the early arrival of those on the Endeavour, captained by James Cook, in 1769 offshore from the mouth of the river that boarders Waikereru Ecosanctuary. The garden which features endangered and now rare native plants, was designed by Philip Smith. Its layout captures the impression of the local bush and biodiversity Joseph Banks and Daniel Solander would have experienced when they first came to Tairawhiti (Gisborne) on the Endeavour. Featuring species of plants collected by Banks and Solander on Cook's maiden voyage to Aotearoa, complete with seeds returned from Kew Gardens in London (online Govtnz, 2019)

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Motoreaus moth costume - front. Figure: 23

Motoreaus moth costume - Back. Figure: 24

Kereru (wood pigeon) – The costume will be used in the "pesky Predator" workshop theme which is designed to engage school children in creative challenges to trigger curiosity to learn about invasive species and their impact on the native bird population. It also will be used as a generic ambassador character given that the ecosanctuary is named after the Kereru (Wai -meaning water and Kereru meaning - Wood pigeon). This costume will act as a mascot of the ecosanctuary.

wood pigeon costume drawing – Front Figure: 25

wood pigeon costume drawing – Back Figure: 26

close up detail of wood pigeon mask made by Ruby Gibbons
Figure: 27

Figure: 28

Figure: 29

Figure: 30

Figure: 30

Mayfly – This costume will be linked with the "River in tears" workshop theme which engages children in creative challenges to explore the importance and plight of water sheds, wetlands and rivers, specifically the Waimata River. The Waimata runs along the edge of the sanctuary. Its water catchment includes Waikereru ecosanctuary and neighbouring farms. The ecosanctuary trust is part of a collective that has just received funding from the Ministry of Primary Industry for the Waimata River restoration project. The funding will go towards implementing erosion control plans and replanting riparian zones.

May fly costume drawing. Pencil on paper Figure: 31

Finished may fly costume Figure: 32

Close up detail of puppet, head piece and bodice motif

Puppet close up made by Ruby Gibbens Figure: 33

Chapter 7
CONCLUSION

"No one will protect what they don't care about; and no one will care about what they have never experienced."

David Attenborough.

Figure: 34

In conclusion, I have found through my research and the experience of designing and running a workshop which used masks and film making in the Waikereru Ecosanctuary that costume and character design can be a beneficial tool in connecting children to the environment.

Furthermore, The Waikereru Wild Lab Tiaki Taiao leaders, Pete and Ellen Jarrat, have observed that they had found that the costumes created an "empathy bridge" between students and subject. Positive feedback from the Waikereru Wild lab's initial pilot of two theatrically presented programs encouraged the Air New Zealand grant to provide a grant to the Ecosanctuary Trust to develop its full program of eight workshop themes, and a further five costumes to be used as an integral part of Wild Lab Tiaki Taiao creative education processes. Securing this funding is what enabled the Trust to commission the moth, kereru and mayfly and thus further develop the Waikereru Ecosanctuary Wild Lab Tiaki Taiao programme, an integral part of which is to use costumes as a tool to create connections between children and nature.

Wild Lab Tiaki Taiao produced a report (https://www.waikereru.org/news/wild-lab-repot/) analysing the feed back they had received from students and teachers who had taken part in workshops during 2019.

An experienced teacher expressed that "The moth costume was very well received." and added "Wow factor."

The report states that the tutors " Observed that the students really wanted to save the bird once they met her for real. Very interesting that this could be the difference in getting students to care for something."

A parent remarked that it was hard to get their two children up and ready for the first day of the workshop but after day one they were really excited and eager to come back. Getting them out of bed for the second and third day was easy.

The recurring negative feedback was "Time constraints. Having a limited time frame hindered the fun - students wanted to stay longer!" – Jono: experienced teacher

This feedback came from students and teachers who had experience costumes being used as an integral part of creative workshop processes. My research, however, would suggest that there is potential for a stronger connection to be made between students and the natural world if they create, wear and perform in their own costumes.

Costume design and construction is different from other art practises in creating a connection with nature because of the personal connection that is made between the subject and the maker. From my observation, the children in the mask and film making workshop became completely absorbed and transformed into their chosen character.

When they wore their masks, they imitated the behaviour of their creature, howling, flapping and swimming. The mask provided the opportunity for the children to recall their knowledge on the mannerisms, habitat and diet of their chosen creature. On top of which they layered human archetypal characteristics, personifying and creating dynamic characters for the film. An example of this is the Boy who created the platypus who decided his creature would be filmed by the river, with a fishing rod. He designed his character to be the busy body postman who eavesdropped on the forester and the wolf's secret plan. Returning to the forest to warn the creatures who lived there.

Costumes offer the experience of stepping into another person's shoes and allows the exploration of personality and exaggeration of archetypal characters. This is important for the development of a sense of identity (Kielhofner 2017). With other art forms such as drawing, pottery, photography there is still a layer of removal from the subject matter. Ones painting remains on the page. With costume, we become the canvas.

Robert Landy describes the mask in therapy as "an image of the self". (Landy 1985). By creating and performing in their own masks, the children made the links between their own identity, the character they created, and nature. The materials the children found such as leaves, lichen and feathers reflect the materials endemic to Waikereru ecosanctuary. These materials stimulated curiosity and conversation about the native flora and fauna found at ecosanctuary. The children's choice of creature was triggered by both the environment they were in but also the persona they themselves wanted to embody. I gave no direction or examples of possible character archetypes. The children's choice of creature and persona was purely their own. This choice gave the children the reason to adopt and think about both the creature's perspective and their own. This freedom of expression is part of what links their own identity to the creature they are portraying. Influencing this choice is the natural context and material at their disposal, thus linking the natural environment to their own identity through the character they have designed.

Indigenous pedagogy shows how important the use of language and natural metaphors are in creating a connection to the environment. Costumes have the ability to spark narrative and generate stories which these metaphors can inhabit. Through performance; cultural philosophy and relationships can be explored. “Narratives, with their plots and metaphors, shape how we perceive ongoing life.” (Kielhofner 2017) I observed during the workshop that the children were less inhibited when wearing their masks. My research supports that costume can create a sense of freedom from the constraints of normal behaviour. A sense of safety and separation from self is possible when wearing a mask because you are not playing yourself, you are pretending to be someone else. This allowed the children to exaggerate and project their emotions through their chosen character. This freedom of inhibition and heightened play is what elevated the children’s experience of the three day workshop. The connections they made to the landscape was evident in the sites they chose to portray their character.

The beauty of Waikereru Ecosanctuary is that the lay of the land changes dramatically in a relatively small space. Each site has its own feeling and the children naturally gravitated to the site they enjoyed being in the most and their chosen character reflected this. For example, the boy who walked up Pa hill for the first time wanted to be the eagle. His character reflected his sense of achievement and he chose the hill top as his character’s habitat. The girls who wanted to be birds and fairies made a connection with the Longbush native forest. This connection had blossomed during the rob the nest game when they had time to explore and find special little nooks and hiding places. The mask the children made invited them to claim a space in the landscape and link there new persona with that place.

Had this workshop taken place in a school field or city park I don’t believe it would have had the same impact as Waikereru Ecosanctuary. From observing the children, I saw that a lot of their excitement and energy came from exploring a new untamed landscape. This in turn, fuelled their engagement in the making process as they were eager to take on the task of becoming part of the landscape. I think this workshop would still work in a school field or park but some of the magic and mystery would be missing.

Costumes are magic. They transform us into who ever we want to be and allow us to express our internal voice, while still being cloaked in safety. Costumes stimulate our imaginations and ask us to be playful. My research has suggested that having fun outdoors may be the most important factor in connecting children to nature. The grass rash, occasional tumble and bee stings could not dampen the children's spirits during the three day workshop. They were having so much fun and nothing was going to stop them coming back for another day. The costume and design process had taken hold of their imagination and they were all determined to finish their masks and be in the film no matter what. The mutual feedback of the three day workshop, from all the kids was:

"It was too short!"

Figure: 35

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