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I am a second-year student in the Bachelor of Arts at the University of Melbourne. In the first semester of 2018, I have been fortunate enough to have an internship with the Journal of Artistic and Creative Education (JACE). I walked into this internship thinking that it would be an opportunity for me to put to practice everything I have learnt so far from my media and communications major, but I have gained so much more insight into the world of academia and arts education at the same time. 2017 marked the ten-year anniversary of the beginning of JACE and in 2018, we have transitioned to the Open Journals System. Part of my internship was to help promote the transition of JACE to OJS, so if you're reading this here, then my job has been done!

Before my internship with JACE, I had grown to accept that people did not need to be skilled in all facets. Whether that be science, mathematics, art or music, I had understood that people had their own talents and assets, and it was okay to allow these to flourish and develop *alone*. As an Arts student at the University of Melbourne, people often ask me what the purpose of my degree is and what I will be able to achieve at the end of these three years. I thought that I had played it a bit safer than others by majoring in media and communications, a rapidly growing and changing industry, thanks to the rise of technological developments. However, I have learnt that having a broad and well-rounded understanding of the world around us makes us more valuable for the workplace and can help us to analyse both our personal situations and those of the wider, global community.

As an Arts student, it is clear that I understand the importance of arts education. However, this is not limited to my time at university. I was also deeply involved in my secondary school's music program, playing in multiple bands, and immersing myself in the school's annual music festival. While having an education in culture and humanities is important, I no longer perceive this as the only way to achieve arts education in institutions.

In 2011, UNESCO decided that the fourth week of May would be International Arts Education Week. This year the UNESCO Arts Observatory housed within the Melbourne Graduate School of Education held a series of events from May 21st to 27th which explored the importance of arts education across a range of contexts. This deepened my appreciation and understanding of arts education. Something that really stood out to me over the course of the week was *collaboration*. Collaboration between educators, students and society is crucial in making the most of arts education. As I said earlier, it is great that we each have our own talents and expertise, but it is when we bring these perspectives together that we can have a stronger understanding of and connection to our landscapes.

There may be an understanding that arts education is limited to putting paint on paper, rendering a sphere in grey lead or learning how to play a few notes on a recorder in music class, but the presence of arts education is so much more important when it is looked at in consideration of the entire educational experience. Art gives us the ability to communicate and convey meaning, and for young children, art can give them a voice, a voice which might otherwise not be heard at all. As we grow up, art begins to be pushed aside, while society tells us that Science and Maths are 'smart' subjects and the students hanging around the art rooms are up in the clouds. This mentality continues to shut down the voices of the artists around us when we should be allowing art, as a form

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of expression, to flourish. Not only does art reflect the self but also perceptions of reality. Art can translate a child's innocent view of the world, or it can depict the harsh realities, but importantly, it is a form of communication that children are capable of commanding. Giving students this agency throughout their education should be taken advantage of in educational institutions and further into the world.

When I attended Dr Jan Dean's and Professor Susan Wright's book launch of *Dance-Play and Drawing-Telling as Semiotic Tools for Young Children's Learning* (2018)*,* I was enlightened and realised something that I had never considered before. Not only does dance allow children to express themselves, but it allows them to gain an understanding of what they can experience and have their opportunity to explain what they have learnt. In the past, education has been somewhat passive, with teachers standing at a blackboard while children sat in rows expected to instantly absorb what was being said. Teacher and student relationships are shifting to a more pedagogical approach and arts education enables children to have more of a voice in these relationships. It also gives them the opportunity to grow; grow in understanding, and grow in curiosity, because their perspectives are valued and catered for. At the end of the day, it is more than just an issue of remembering facts for an assessment but also learning for real-world experiences and truly understanding why the world is the way it is.

The reality is that the world is not separated into categories or sections, so we shouldn't be learning in environments that *are* separated. When Dr Kate Coleman first talked to me about integrated learning, I thought that it was something amazing and unique. Fancy learning about cells in science by learning how to draw and paint them with watercolours! After thinking it through though, I realised that art *can* be found in science, as it can also be found in literacy, and literacy in science. Yes, some people want to emphasise intelligence in different areas, saying that they're more 'right-brained' or are more 'logical" learners', but to fully understand and appreciate what we are learning requires aspects from all fields. This is where I come back to the importance of collaboration. Collaboration is not only about working together but allowing each other to contribute valuably to discover the combination that produces flourishing and cohesive results. Integrated learning shouldn't be something that is unique, but something that is seen in all schools!

Arts education also reaches out to wider society in arts institutions such as galleries and cinemas. In facilitating encounters with art, educators are able to spark conversation and discourse about what it represents. With the presence of more arts in schools, we can be having nuanced and in-depth conversations about the structure of the cell, for example, thanks to our new understanding of it. Having informed collisions from all corners can ensure that everyone can understand what is being talked about and learned.

I would like to take this opportunity to thank Dr Coleman and Dr Sallis for giving me the opportunity to work with them on this edition of JACE and the move to OJS. It has been a truly unique and exciting experience and I am so glad to have been able to work on it with you. I also hope that you, the reader, appreciate JACE's new interface, and this 2018 edition of JACE!

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KATHRYN COLEMAN

MELBOURNE GRADUATE SCHOOL OF EDUCATION, UNIVERSITY OF MELBOURNE

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THE LANDSCAPE OF ARTISTIC AND CREATIVE EDUCATION IN 2018.

"To depict the landscape is to relay a perspective of experience and embodied response to atmosphere" Tracey Delphin and Abbey MacDonald, University of Tasmania.

The UNESCO Seoul Agenda (2010) calls for "a concerted effort to realise the full potential of high-quality arts education to positively renew educational systems, to achieve crucial social and cultural objectives, and ultimately to benefit children, youth and life-long learners of all ages" (p.2). With this agenda in mind, we invited contributing authors to consider the resonations and reverberations that emerge from this positioning within the landscape of creative and artistic education in which they were practice/sing. At the Melbourne UNESCO Observatory of Arts Education in the Melbourne Graduate School of Education, we have felt these reverberations in *studioFive* as a "resonating sound, that continues on through memory, flowing and bouncing off space. The sound is constant, it niggles and prods knowing, doing and relating, opening new possibilities with its subtle reminders" (Coleman, 2017, npn). Here in *studioFive* we have spent the year exploring and navigating the landscape we have felt and listened to. We have worked alongside, and with the leaders in arts education, and the future of arts education and arts-based practice in our classes. Through JACE, we have been invited into the feltness of the wider landscape, a landscape imagined through the seven papers in this publication. Each of the contributing authors presenting and locating their shifting, morphing, growing and in some cases regrown landscapes. Each have attended to the invitation to explore the metaphor of the land-scape. This global landscape represented in JACE 12(1) contextually places the many scenes and atmospheres of creative and artistic practice, pedagogies and research in the felt, experiential and body of the land.

For Richard and Kate, our practice, pedagogies and research are located in the *studioFive*-scape, a space designed to sustainably support both arts diversity and cultural expression through an integrated approach to creative practice, creative research and studio practices in and across the arts domains. As an integrated studio in the round, we are positioned to expand the dialogue on current and emerging issues in global artistic and creative education and contribute to the mapping of the landscape. It is here that JACE was developed a decade ago and continues to grow as a journal reflecting the growing interest in integrated and intertwined intra-, cross-, multi- and trans-disciplinary learning, teaching and research. We both practice and practise in creative and artistic education; we perform, make, write, reflect, teach, learn and *do* as creative and artistic educators in *studioFive* - we both inhabit different sites of the landscape, however the paths cross over and

are often entangled. It is through this entanglement that we can support the creative space for JACE as editors, and cultivate the different voices in the environment as we see, hear and do creative and artistic education. This process of reading, copyediting and publishing is not lost on us, that we are creating and making a work that is both the product of creative practice, but also the process of artistic education.

"Creativity comprises methods that constantly offer new possibilities, and, therefore, the creative process matters no less than the final product" Rannveig Björk Thorkelsdóttir, University of Iceland.

studioFive is connected interculturally within the UNESCO UNITWIN network of institutions and arts education faculties from Australia, Canada, Colombia, Germany, Hong Kong, Kazakhstan, Korea, New Zealand, Singapore and Thailand. As arts-based researchers in this network, we have a focus on UNESCO's goals of protecting and supporting intangible cultural heritages, peace building, sustainability and creativity, and in the development of arts education across the globe. This edition includes two UNITWIN partner papers; Richard Sallis, University of Melbourne who invites readers to explore how 'research-based theatre can be a highly effective way to convey research findings to teachers and students in schools', and Ralph Buck who explores the University of Auckland's 'Creative Thinking Project' with colleague Barbara Snook. Ralph and Barbara's insightful paper brings us into arts integration practices in Australian and New Zealand classrooms, positioned within the changing face of education across these two countries. In music education we are located with David O. Akombo and Andrew J. Lewis from Jackson State University & The University of Southern Mississippi, United States of America who examine 'whether improviser-mediated musicality leads to academic achievement in adolescents and also whether it improves the health and well-being of teenagers'. The role of teachers and curriculum in the landscape of creative and artistic education is explored by Rannveig Björk Thorkelsdóttir, University of Iceland who discusses 'the meaning of the concept critical thinking when applied to Icelandic education from Deweyan perspective' in the paper, Can critical thinking be taught?

As the arts in education continue to reposition themselves as a result of educational reform, digital shifts and turns, and debates surrounding intercultural practices, scholarship and policy development Australian's Tracey Delphin and Abbey MacDonald extend an invitation to consider the sanitised landscape. In this paper, the authors interrogate 'colonial representations of landscape in Tasmania from a perspective of practice-based research and reflective action-research'. Moving to a more northern landscape Ulrika von Schantz and Ketil Thorgersen from the University of Sweden initiate a Deleuzian investigation into the 'possibilities and challenges of how best to extend aesthetic bodily communicative and performative spaces in relation to digital technology in drama education'. This paper is extended through another philosophical inquiry by Maurizio Toscano, University of Melbourne who examines questions concerning whether and how the 'domains of science and science education might expand the practical and conceptual landscape available to artistic and creative educators'. Maurizio explores the nature of things and practices in science education and the relationship between the two through Heidegger's (1971/1935-36) seminal work: *On the origin of the work of art*.

This issue reflects the landscape of the precarious position of creative and artistic education in some spaces, and more hopeful and sustainable sites of enrichment in others. This our first issue in Open Journal Systems (OJS), extends the concept and metaphor of the landscape in artistic and creative education through a range of visual, textual and performative spaces and places, and asks you to explore the emerging issues felt, realised and opened as a result of the UNESCO Seoul Agenda with us.

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Landscape View from Reykjavik Harbour, 2018
Emmanuelle Brizuela

SANITISING LANDSCAPES: IMPLICATIONS FOR MEANING MAKING

Tracey Delphin and Abbey MacDonald

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ABSTRACT

This article interrogates colonial representations of landscape in Tasmania from a perspective of practice-based research and reflective action-research. Adopting an entwined process of art-inquiry and critical examination of historical examples of colonial Tasmanian landscape art, the role of the artist in relation to what is included or omitted in depictions of landscape is examined to ascertain implications for meaning making. The choices an artist makes in relation to how they construct a particular aesthetic of the land is likened to a process of sanitisation; a process laden with discreet yet significant decision making to appeal to a particular sensibility or agenda. In exploring the notion of sanitised landscape in Tasmania, an acknowledgment of constructed realities begins to emerge through an evolving experimentation across media. In the context of the formative inquiry underpinning this article, insight into how constructions are reflective of artists' use of media in relation to interaction with and interpretation of history, culture, society and experience at a given time, becomes apparent.

KEYWORDS

artist; landscape; sanitised landscape; practice-based research; art practice; process; practice-based research; action research

'Landscape' is a term laden with European ideological connotations. Landscape artists often work to conjure ideas that result in connection making, in which they might lean into stylised and accessible generalisations of a 'beautiful' idyllic landscape. The manifestation and realisation of such an approach is often simply due to time the artist has taken to contemplate and formulate an understanding that is resolved and culminated in a final work (Cosgrove, 2017). These aspirations to render a particular aesthetic of realism can be traced back to childhood aspirations to draw 'realistically' (Klepsch & Logie, 2014) and is historically (and developmentally) seated in an intrinsic motivation to get better at creating 'realistic' landscape depictions. However, even for those masters of a 'realistic' style, we must consider that the resulting work does not always render a landscape scene the way we want, or a in a way that objectively captures diverse perspectives that underpin and shape place. Often, we have romantic ideas of landscape which in-turn evolve into romantic ideas of wilderness and nature, all of which are seated in constructions of modernity (Bordo, 2002).

As understandings and perceptions evolve and change, so too can our reading of the portrayed landscape, provided we can recognise the limitations of any portrayal as a document of historical perspective as captured in the landscape (Kerby, MacDonald, McDonald & Baguley, 2017). Sanitising the landscape involves a rendering process present in all artists' practice, and there are numerous influences on how and why we do this. The broader context for the inquiry reported on in this article unpacks some of those influences while working within the context of studio practice. The idea of

'cleaning' the landscape to omit or include details in relation to these influences is where the label and ideas surrounding the *sanitised landscape* were formed.

THE FRAME: ENCOUNTERING LANDSCAPE IN PROCESS AND PRACTICE

In March of 2017, Tracey attended an oil-painting workshop run by Australian Landscape painter John Wilson. As with most of these "How to paint…" workshops, Wilson was very generous and shared his ideas and experience of what it is to be a landscape painter, which he has spent countless hours perfecting amongst the rolling hills of the Western Blue Mountains in New South Wales. A stand-out dialogue as part of this workshop piqued Tracey's curiosity,

> '*Landscape painters need to resolve scenes each day. Composition needs good design. If a scene is unresolved the painter's role is to resolve it in their work.*'

> -- John Wilson, (personal correspondence), March 2017.

It is this type of critical reflection on personal art practice that can powerfully shape how artists render the landscape through art to compel audiences both intellectually and aesthetically. In considering Wilson's opinions, Tracey found herself being drawn back to thinking about the role of the artist in the construction of ideas of landscape, and how artistic works contribute to the cultural and social significance of a place's scape for the individuals inhabiting its space. As a recent art teaching and studio-practice graduate, Tracey was acutely aware of the important role art can play in regard to how we connect to, engage with, and learn about landscape, and cultivate a sense of value, respect and appreciation for the natural environment. Art making and appreciation, helps broker dialogue between person and place, and encourages reflection upon how art practice is integral to revealing what and how an artist might elect to 'filter' or emphasise in their response to landscape (Kerby & McDonald, 2018). Tracey's investigation was concerned with wanting to understand more clearly the reasons for choices made in the making process and how artists use their technical skills, experience and knowledge, as a filter in creating a response to landscape.

An important part of understanding the concept of sanitised landscapes and the cleaning process of the artist is to understand what constitutes landscape art, and the limitations framing the initial lines of inquiry explored in this article. Landscape art is subjective and there is no commonly agreed upon definition because the area of landscape encompasses more than that of the meaning (Haynes, 2002). The authors are aware of the diversity of culturally situated notions of landscape, and the scope of interfacing with diverse perspectives continues to unfold across further layers of cyclical inquiry following this publication. The authors acknowledge that the perspectives of sanitised landscape unravelled within this particular article are not inclusive of the breadth and depth of perspectives that comprise the whole genre of Arts and cultural practices that explore the relationship between place and person, country and landscape. Rather, this article, as situated in preliminary inquiry, that interrogates the evolution of Euro-centric colonial depictions of the sanitised landscape to demonstrate how a process of practice and action-based inquiry was enacted to reveal the implications of sanitising portrayals of landscape.

AN EXISTING PICTURE: THE RENDERED LANDSCAPE

Through their art work, artists seek to communicate meaning and envision the landscape they are trying to render. It is something that comes from within the viewer and is described as 'something that is mental as well as physical, as well as subjective and objective' (Howard, Waterton & Thompson, 2013, p.2). It traditionally suggests the artistic presentation of natural inland scenery from a distanced viewing position that involves detachment and separation from the environment. In his book *Landscape and Power* (2002), art Historian W.T.J. Mitchell argues that landscape can be an instrument of cultural power. Although many landscape scenes do not literally depict humans within the scene, it is difficult to consider how our ideas and representations of the landscape can come to be without the presence of humans. This challenge comes to the fore when considering images presented without the depiction of the human figure, or signs of human existence and influence within the work, the human element is that of the viewer (Gadamer, 1975; Bordo, 2002). Mostly, we inform our own way of seeing landscape by making connections based on our own experiences, discoveries and fitting together our perceptions of the land around us (Rose, 2013).

In further understanding sanitised landscapes within the context of this article, it is important to consider historical contexts that envelop around ideas of making landscapes. Some of the basic traditional European elements of landscape paintings, which can be framed when considering styles like Impressionism, are essentially a communicated impression of what the artist is seeing. Generally, it is accepted that such landscape scenes can be aesthetically compelling, with the artist curating the depth of detail and adding in or leaving out objects, producing a final render that culminates in a unified cohesive work. Moreover, these deliberate choices likely see artists working to change understandings or add to our perception of the scene. Significant Impressionist artists, such as Joseph Turner, knew their audience and their aesthetic preferences, adapting, and sanitising compositions accordingly. Schama (1995) brings context to these approaches in his discussion of the types of works that were sought after as art became more accessible, with Turner creating more work specifically for "middle-class customers (who wanted works that) were not faithful representations of industrial-barge traffic and dockyards" (p. 364). This way of working, to appeal to the preferences and tastes of a particular target audience remains topical in recent times where the expectation to digitise, replicate, and edit what we see around us is increasingly facilitated and supported through the technology we use to engage with and capture our surrounds (Rourke & Coleman, 2011).

Early Australian colonial landscape paintings were undertaken with the intention to accurately record what artists were seeing (Splatt & Burton 1980). In Tasmania, images of 'Old Hobart Town', but were also often sanitised to depict a life devoid of the convicts. This emphasised and aligned itself with the romantic notion that was prevalent in the European landscape painting style of the time. Given this historical influence, artists make decisions that govern what will be represented in their work based on their interpretation of the reality before them. By choosing to include dialogues in art works, decisions are simultaneously being made in parallel to leave out other dialogues about landscape, nature and the environment. This is iterative of the idea that 'while nature is tangible and real, its aesthetic properties are culturally embedded and continually evolving as societies change' (Richardson, 2018, p. 1). In this sense, the educative role art plays in the value people assign to land and environment should not be underestimated. These ideals were further reinforced as early European invaders/settlers were encouraged to send images home of the new colonies of Australia. They were depicted as almost utopian places, and those searching for commercial opportunities could

explore and travel the continent, to produce or acquire works containing familiar forms and appealing subjects reminiscent of their European ancestry (Splatt & Burton 1980). According to Sharp (2006), images have the power to rewrite our vision, and the artistic rendering of colonial Australia used the power of fashioned norms of aesthetic beauty in the Euro-centric Romantic tradition to reimagine the Australian landscape (p. 155). Images used to render the landscape as somehow less foreign were engaging in an act of colonial sanitisation to portray the local landscape to the point of Euro-centric familiarity and utopian ideal.

SANITISATION IN, THROUGH AND OF MEDIUMS

The methods and processes adopted for this inquiry involved a blend of Practice-Based Research (Leavy, 2015) and Action Research (Jokela, Hiltunen & Härkönen, 2015). It involved a combination of researching the theoretical underpinnings and specific historical contexts that fed into the topic. Running in parallel to the theoretical inquiry was the generation of art pieces, made in a cycle of relational reflection upon and response to outcomes and making processes that informed the creation of the ensuing works (Barrett & Bolt, 2007; Mills, 2007). The information gleaned from this iterative process provided the comparative data used to choose a final selection of works for discussion in this article.
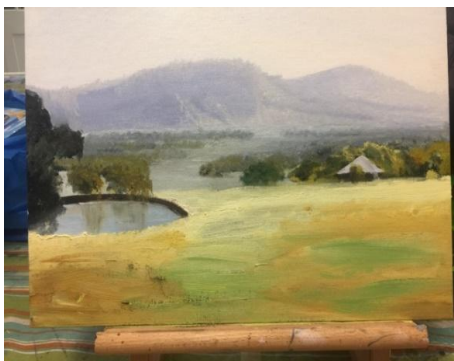

Figure 1 – Tracey Delphin, 2017, *Grazing Country, Western Blue Mountains, New South Wales*, oil on canvas board, 21 cm x 29 cm.

Figure 2 – Tracey Delphin, 2017, *Ghost-Gums in the Snow*, oil on canvas board, 18 cm x 28 cm.

Tracey's early artistic practice as situated in the inquiry underpinning this research, sought to draw upon and interrogate Romantic ideas of landscape and its historical contexts. In doing so, three elements of inquiry were adopted to frame an approach to making. The first was her own experimentation in what it meant to represent the landscape 'accurately' with traditional oil techniques developed in a workshop with the artist John Wilson in March 2017 (*Figure 1* and *Figure 2*). Tracey's artistic output in both instances was influenced by what she described to be an inability to render the essence of what she was trying to portray within the works. The second element that framed some of Tracey's early approaches to making was an image that she first saw on a souvenir tea-towel (*Figure 3*).
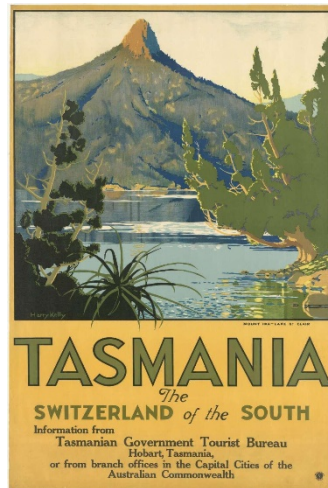
Figure 3 – Henry Kelly, ca. 1945. *Tasmania, the Switzerland of the South*.
Tasmanian Government Tourist Bureau, Hobart.

The image depicts Mount Ida and Lake St Clair, located in central Tasmania, as an enticing alternative to holiday destinations in Europe, specifically Switzerland and the area around the Matterhorn. Tracey found this comparison curious and comical, with the Matterhorn's summit reaching 4478 meters and the Mount Ida summit reaching 1176 meters – just a quarter of Matterhorn's height. Mount Ida also offers no comparable infrastructure to facilitate recreational engagement with place that the Matterhorn does. The disparities between summit and scale and how these were seemingly lost in translation through a process of sanitisation provided a further point of curiosity and investigation.

The Mount Ida form is a very recognisable Tasmanian mountain form and Tracey was thus inspired to connect and work with it. The idea was to use the Mount Ida form, based on a photo taken from Lake St Clair, to see how much it could be sanitised without losing the context of the landscape form and work within an iterative process, experimenting with materials and mediums for a variety of effects that determined the line of inquiry for each making cycle. The production approach Tracey took to this early work drew inspiration from that of Olafur Eliasson's (Icelandic-Danish artist) photographic works in order to relationally explore what it was to sanitise a landscape. In doing so, Tracey 'approached [the process] with a subjective attitude in mind' (Molesworth, 2008, p. 43).

In consideration of an Impressionist European style, the kitsch of the souvenir tea-towel and the iterative process of Eliasson's series, Tracey produced a result in the minimalist, prefabricated style of forms that make up the many studies of Mount Ida and Lake St Clair that comprised the initial phase of her inquiry. *Figure 4* was the first iteration in this series and the experiments were much more successful than expected in respect to how she engaged in a dialogue of making in response to minimalist qualities she admired in the work of others. Moving away from what became an unnecessarily laborious process of working with oil paints, the decision was made to experiment with paper cutting and collage. The shift in medium was reflective of Tracey's desire to experiment with paring back aspects of the landscape in a more tangible and literal way. The cuts made to create the form from the initial collage series were executed quickly, and the materials used were what was at hand – scraps of coloured paper and masking tape to secure the cut forms up on the wall.

Figure 4 – Tracey Delphin, 2017, *Mount Ida and Lake St Clair, Tasmania,*
cut-paper collage - coloured 80gsm copy paper and PVA glue on 600gsm card, nine images in
series, 94.1 x 68 cm.

One of the questions Tracey returned to throughout and within the sanitised landscapes inquiry was concerned with colour choices, and especially how they were incorporated in and extended from the earlier experiments she undertook with paint. Through thinking about the sanitisation of colours and their role in depicting and emphasising detail, Tracey decided to try some colour-sampling from the Impressionist/Romantic landscape experiments she had produced when trying to relay an essence of landscape through her work in oils. She went about this by using a colour-sampling iPhone application, *ChromaTron*, which when hovered over the work picked up the digital colour references in sections of the work. Notes were then made from this data collection in a colour-sample book to flag hexadecimal and RGB values for digital works, which were then matched to paint swatches collected from her local hardware store. These notes and swatches were later used to assist in selecting block colours for mixing, digital work colour choices, and choosing paper colours to use in the Mount Ida experimental works (*Figure 5).* This experimentation led Tracey to consider how her role as artist was concerned with rendering more than just the detailed shapes and forms found in in her local landscape.

Figure 5 – Author 1, 2017, *Mount Ida and Lake St Clair, Tasmania,*
cut paper collage and Traditional style paintings with selected colours drawn on via an
Australian colour palette.

At this stage, the project expanded to consider the sanitising of the landscape from the Minimalism and/or Post Minimalism lens by introducing fundamental concepts from this movement into both the research inquiry process and practice. Tracey had become interested in the further reduction of detail in the works she was creating, and this pointed toward the removal of colour altogether. She considered Minimalism from the hard-line perspective of comments made by Barbra Rose, who talked about art being pared down to the absolute minimum, and how she could do this while still capturing wide vistas and awesome mountain ranges (Atkins, 1997). Tracey came up with the idea of working toward a single mountain form, or horizon, represented with minimal lines. This was planned to build upon the collages she had worked on for the Mount Ida and Lake St. Clair forms, but embraced a shift of aspect through the ratio of paper and moved away from the squareness of the more traditional paper sizes, A5 to A1, used in her previous explorations.

One of the influences in the extension of Tracey's practice in this part of the sanitised landscape inquiry was the work of Jenny Bell. Her simple lines and minimal detail offered in relation to the Australian landscape resonated powerfully for Tracey in an aesthetic sense. Bell's approach drew Tracey into her work in the way that it reflected a sensitivity to minor details of the land she occupies, showing a 'depth of insight unusual for a non-Indigenous painter' regarding the presentation of her Australian Landscapes (Beaumont, Fenner & McDonald 2012, p. 30). Bell's approach to practice informed Tracey's own cycle of inquiry into sanitising the landscape, where a powerful aesthetic could be conveyed through minimal marks on paper and a limited colour palette. These approaches to practice that Tracey perceived in the work of others and sought to engage with as part of her own inquiry, spoke to the implications of how design choices simultaneously gave voice to some ideals around landscape, while denying or omitting other potential narratives. This minimal use of line and shape served to demonstrate how much information can be removed from a landscape when it is given focus in the artist's perspective, which in-turn determines the information that can be sanitised from the landscape to form new dialogues. Such experiments and reflections provided Tracey with a

benchmark for understanding what is essential when depicting a terrain or topography, within the context of her practice. The ensuing experiments used this method to select forms and information from photographs and maps to create a more refined version of her own sanitised landscapes.

Further reduction of detail ensued in exploring the sanitised landscapes through a minimalist lens, drawing from the additional influence of spatial artist Lucio Fontana. From 1959, Fontana started his *Spatial Concept* series for which he cut through monochrome canvases to reveal what was behind. This resulted in the creation of a large body of work that resonated with a three-dimensional sculptural depth, not usually demonstrated by works produced on a traditionally two-dimensional image presentation format. His works conformed to the standard definitions of a painting, but he treated the work more like a sculptural object and created pieces that were neither a painting or a sculpture (White, 2005). It is in the way that Fontana cut the surface of the canvas with a knife to reveal the depth and darkness of shadow through the cuts that inspired Tracey to try this technique in conjunction with the specific lines and forms found in the mountain ranges and horizons of the Tasmanian landscape. The key developments in Tracey's approach, building upon her previous experiments in paint and collage, was characterised by a preference to mark, or cut, which became much more discerning and measured in attempting to create a recognisable form (*Figure 6*). They were made using a fine artist's knife as a tool and Tracey tried various iterations and types of paper to attain the minimalist result she wanted.
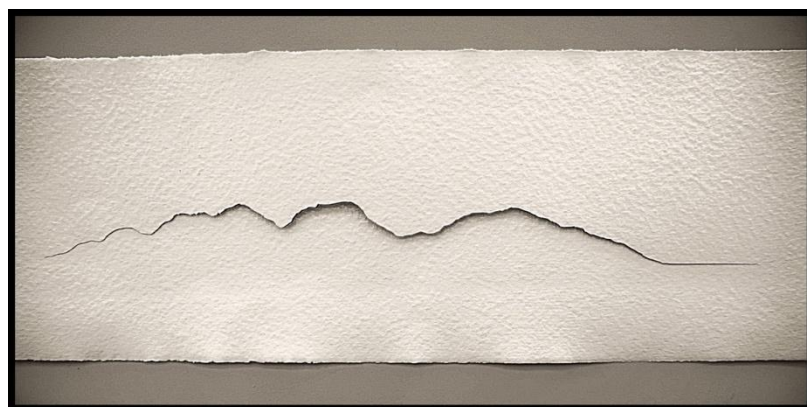

Figure 6 – Tracey Delphin, 2017, *Sanitised Landscapes – The Hazards, Tasmania,*
315gsm cold-pressed handmade cotton paper by Fabriano, 75 x 22.5 cm.

From the perspective of creating a body of work based on the minimalist theory and practice mentioned previously, the ensuing work enabled Tracey to consciously embody the qualities and process of sanitisation, filtering through the mindful choices she made as part of the making process. The work invites the viewer to project their context, understandings and life experience into the work, allowing them to see and take from the 'painting' vision what is meaningful for them.

One result that was surprising was the effect of trying to cut through dense 640 gsm weighted Arches hot-pressed cotton paper (*Figure 7*). It was near impossible to cut all the way though and maintain the precise line required to render an accurate mountain form and profile, so the cuts made ended up just scoring the surface. While initially frustrated with this, Tracey pressed on to explore the outcomes of folding and bending the paper along the scored edge of the landscape form carved into the paper. It took on a subtle shadow, most noticeable when placed under down-lighting, that extended the

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minimalist approach adopted in the previous cutting works with the different types of 300gsm weighted paper.
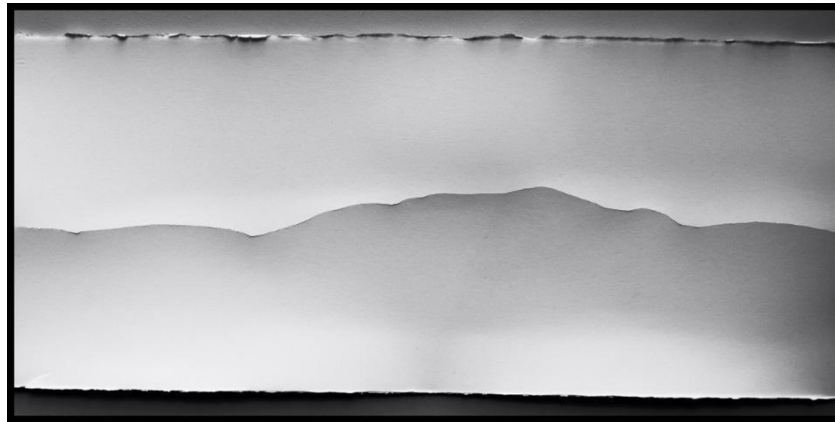

Figure 7 – Tracey Delphin, 2017, *Sanitised Landscapes – Mount Wellington, Tasmania,* 640gsm hot-pressed cotton paper by Arches, 75 x 22.5 cm.

The resulting work had the quality and depth of sanitisation Tracey was aiming for as part of this process and went some of the way to revealing how much we can sanitise a landscape and hold true to place, however the work's scale was something that needed to be experimented with further. Tracey's next approach was to experiment with scale and rather than increase the scale of a single image, she decided to present the images in a substantive series, similar the approach Eliasson adopts in his photographic work. She created a series of these sanitised sandscapes, comprised of thirty different Tasmanian mountain forms, arranging them in a grid-pattern for presentation. It was done with the intention of bringing a feeling of awe to the viewer that may not have been present when viewing fewer smaller images, or a single image in isolation.
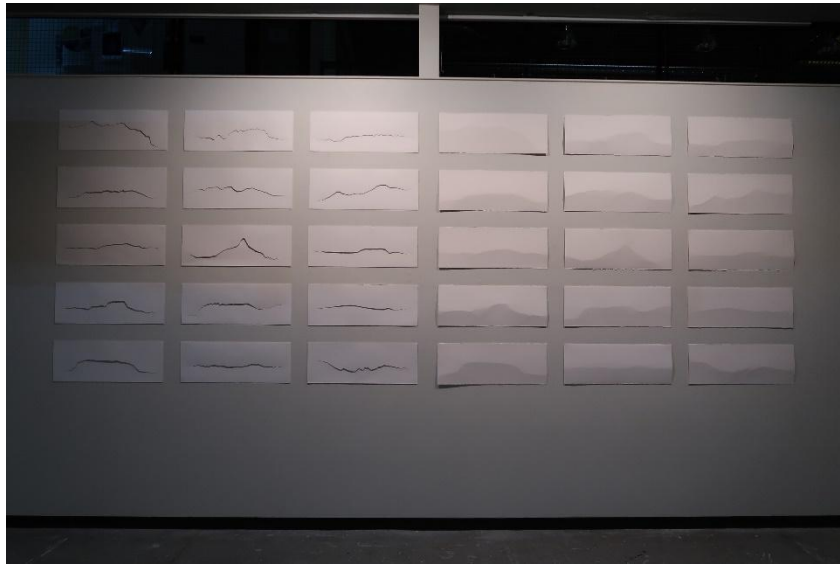
Figure 8 – Tracey Delphin, 2017, *Fifteen Tasmanian Mountain Profiles*. 300gsm an 640gsm hot-pressed cotton paper by Arches, Installation 385 x 190 cm.

Another approach to the making of these sanitised landscapes, still highly painterly in their aesthetic, was the addition of the atmospheric qualities present and inherited from the texture and features of the paper used in the previous making process (*Figure 7*). One inspiration for the exploration for this was Mark Rothko's work, characterised by his simplicity, symmetry and flatness to reflect a unique quality of relating an atmosphere that speaks to the viewer of presence and absence, thus allowing them to interpret the work based on their own perspective (Chave, 1989). Upon viewing Rothko's work in person, Tracey recalls that it is still difficult to describe them accurately as their simplicity defies their deep omnipresence, like witnessing a mountain range or vast plain. It is the use of a minimal palette that provides the vehicle for the atmosphere in his paintings, even though his works were not supposed to represent the landscape, for some people, they provided a relatable form of vista with a defined horizon line.

In studying Rothko's work, Tracey was interested in the creation of awe-inspiring atmospheric qualities as pertinent to this inquiry, as well as exploring how they might simultaneously be used, consciously or unconsciously, to sanitise the landscape. This was something Tracey had often observed being applied to the concept of digital painting and the creative media industries, where recreation and design of three-dimensional worlds requires careful unpacking through reflective observation and the skill to do so on what is essentially a two-dimensional plain.

The experience of the Sublime is something that artists have strived to impart on their viewers, most certainly since the Romantic period. However, it should be considered that our reaction to truly uplifting and awe-inspiring landscapes is often conjured as a result of the sanitisation process, but people do not all have the same reaction to notions and elements of the Romanic Sublime in landscape painting (Adams, 2015; Bordo, 2002; Burke, 1958; Marchant, 2017; Schama, 2004). Not everyone can speak from personal experience to the appeal of a Rothko painting, nor does everyone value place or see a landscape the same way within its frame, or understand why others are awe-inspired after

undertaking a pilgrimage to stand before one. The feeling of awe at landscape art requires care and some understanding of the part of the viewer as to what they are engaging with (Marchant, 2017). For example, Tracey describes an awareness that Rothko's use of technique, brush control and light control contributes to part of the awe she experienced when encountering his work. Subliminal experiences of landscape art require an understanding and appreciation of the mastery of materials used in the creation of the work, which can often be technically complex (Demos, 2015).

To further understand what can be sanitised from the landscape as part of the artistic rendering of a work, the making process was approached with the intention to further extend the possibilities of other media. This involved investigating the idea of creating digital works based on some of the project's less resolved landscape forms and studies. Having removed many of the atmospheric qualities of the landscapes in previous making processes, Tracey had a basic form to work with; that of the Tasmanian mountain kunanyi/Mount Wellington. The iterations of the development are infinite in the digital sphere, so Tracey used time as a constraint for innovation as well as limiting herself to generating one basic image. The result was a short video that depicts her interpretation of the area's changing atmosphere, as well as the transience, endurance and sameness of the Tasmanian landscape (*Figure 9*).

Figure 9 –Tracey Delphin, 2017, Video still, *Sanitised Landscapes – Rolling clouds over Mount Wellington'*, video screenshot, Vimeo.

DISCUSSION

Key to this practice-based research was the unpacking of ways artistic choices might be guided and directed, shaped by a desire to create works that appeal to audiences intellectually and aesthetically. As can be seen in some of the historical examples of practice referred to throughout this article, this historical Euro-centric approach to simultaneously appeal and adhere to a particular colonial aesthetic sensibility has sought to emphasise scenes or elements that are familiar to European viewers, who were often the target audience of the historical artworks examined. People viewing works in a gallery

context who were unfamiliar with the sanitised landscapes depicted were observably (from Tracey's perspective) less inspired, less drawn in and less awed by the work. They were curious, but only appeared to hold a passing interest at best. Contrasting this, those who were familiar with places often stood for extended periods studying in detail the lines and forms, or immersing themselves in a remembered atmosphere, and conversing about details such as aspect or viewpoint. Most of these patrons were curious but also fascinated with the outcomes using the chosen mediums, and how Tracey came to present this perspective and the rendering of the mountain profiles depicted.

The ways in which an artist sanitises the landscape to comply with a particular aesthetic sensibility is an important understanding to have when encountering depictions of landscape and environment. When people bring an awareness of how an artist positions us to encounter a particular landscape aesthetic, they can begin to understand the processes adopted to influence subsequent meaning making. In this way, artists use processes of sanitisation to curate our meaning making experience, and emphasise potential narratives about culture, society and environment. In relation to the UNESCO Seoul Agenda (2010), the process adopted and discussed here speaks powerfully to the implications and possibilities of sanitisation in artistic process that can open up future directions for engagement with, understanding of and care for cultural narratives.

Undoubtedly, those who bring a perspective of familiarity with the landscapes being depicted are better positioned to engage in conversation and make meaning from landscape works. However, further to a familiarity that is grounded in personal experience of interfacing with or encountering the landscape or place depicted, the sanitisation that the artist brings to their depiction further implicates upon the conversations and meaning making that can ensue. Through interrogating the sanitised landscape and practices of artist as actuality filter, we can create opportunities for art educators to better recognize and develop the social and cultural wellbeing dimension of arts education (UNESCO, 2010). This in turn can empower teachers, students and artists to better navigate artistic encounters that might position them to passively accept sanitised representations of culture, place and person. What is excluded through sanitisation can provoke an equally diverse meaning making experience as what is included as a result of the artists' sanitisation process. It is this kind of informed and invested audience (or viewer) response that adds weight to the power of aesthetics to hold the viewer's attention, allowing artists to extend engagement through the work's intellectual appeal, scaffolding on nostalgia, and create an extended dialogue that goes far beyond standing before the artwork itself.

These dialogues construct a social significance and importance that goes past the idea of the artist's making processes, rendering, and perspective, reinforcing the sense of place and our sense of belonging to it as well as within it. The landscape, extending to the environment we inhabit is engaged in dialogue, forming a narrative that depicts in vision in the same way notes can be assembled for all manner of melody. The potential reach of this voice is unbound when considering the application of technology-based mediums and media. Through technology, 'the digital has shifted all things we know as algorithms and filters determine and shift our ways of knowing, being and doing 'online'' (Coleman, 2018, p. 92). There is scope for infinite iterations of the same theme, visual stimuli, subject and imagery that can be shared on social media. The artist, and those who encounter their works, are shouldered with a responsibility to ensure the process of sanitisation does not exclude, oppress or disrespect. The idea that we are so readily able to create or deny awe through the sanitisation of landscape and share it with others, can perform as an act that divides or bonds, unfolding from simultaneously wonderful and disturbing evolutions in technology (Marchant, 2017).

DIRECTIONS

From this iterative creative process, landscape painting emerges as an artistic endeavour about the artist rendering much more than just the actual shapes and forms in a landscape. To depict the landscape is to relay a perspective of experience and embodied response to atmosphere. The act of sanitisation that has been historically practiced, and in turn problematized and unpacked within this article seeks to highlight the implications of purposefully including and omitting certain aspects of the landscape, within and from a Tasmanian context and perspective. The European notion of landscape differs in so many ways from the complex spiritual Aboriginal notion of Country. As Deborah Bird Rose writes in relation to her work with Indigenous communities on Country in *Nourishing Terrains* (1996): 'Country is a place that gives and receives life. Not just imagined or represented, it is lived in and lived with' (p. 7). Yunkaporta and Kirby further emphasise the importance of links to land through the 8 ways of Indigenous knowing (2011), where 'an indication of cultural integrity in storytelling is that land and place are central to the story. There's no story without place, and no place without story' (p. 6)**.**

The research underpinning this formative inquiry into the sanitised landscape unfolds from a position that has sought to interrogate the cultural-historical perspectives of the authors, being non-Indigenous. In doing so, the authors have examined the Euro-centric colonial tradition of landscape painting in Tasmania, and unpacked inherent aspects of sanitisation as documented in a formative practice-based action research inquiry. In the iterations to follow this initial inquiry into sanitised landscape and artist as actuality filter, the authors will extend to cultivate space for engagement in 'together/two-gather' storying, where the authors ascribe to share and connect to cultural stories of the past, to embody them and gift past and present together to give meaning for today (Bunda & Phillips, 2018). This means a commitment to further interrogate sanitisation in conversation and collaboration to examine further implications for meaning making, when artists prioritise a particular narrative (through inclusion and omission) in acts of sanitisation.

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UNDISCIPLINING ARTS EDUCATION: TOWARDS ARTS INTEGRATION

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ABSTRACT

The arts, inclusive of the disciplines of dance, drama, music and visual arts have been included within the formal New Zealand school curriculum for over seventeen years. These disciplines have valuable intrinsic aesthetic and educational value and the rationale for including arts disciplines in formal education is well articulated. (Abbs, 1987; Bamford, 2006; Eisner, 1998). Current research (Buck, 2003; Fraser, Aitken & Whyte, 2013; McDonald & Melchior, 2007; Snook, 2012) reveals however, that the teaching of the arts in New Zealand schools remains sporadic with a government focus on literacy and numeracy. We propose that the arts may be valued for their instrumental roles in enhancing teaching and learning across other disciplines in the New Zealand curriculum. Our research is directed by the question: how can the disciplines of dance, drama, music and visual arts better support teaching and learning in the New Zealand curriculum? This article argues that through an introduction of an arts integration pedagogy into classrooms, teachers and students will achieve learning objectives across the entire curriculum, including the arts.

KEYWORDS

Arts education, students, learning, arts integration, teachers.

INTRODUCTION

While we would like attention to be given to each of the arts disciplines for their own intrinsic value, we believe that a strong argument for the arts in schools, lies in their ability to develop creative learning pathways through students engaging in the doing and making of art. Rather than advocating for more time for the arts, that history reveals is highly unlikely, we advocate for the use of an arts integration model. We argue that when students use the arts as a process to learn about a concept in another subject area, they engage in multiple ways of representing their own knowledge and personal experience. "The arts asks students to value their own experiences and culture" (GoetzZwin & Graham, 2005, p. 271), and through such a personal engagement, knowledge is built.

Our research is situated within the University of Auckland 'Creative Thinking Project'. We are examining the introduction of an Arts Integration pedagogy into primary school classrooms over a three-year period. We are aware that when theory is taken into the classroom, it must be understood in the light of pragmatic classroom decisions, motivations and imperatives from a teacher's perspective. The day to day teaching in classrooms is the priority. We are currently working in a small rural school in the north of New Zealand where we are supporting the teachers in their classroom implementation of arts integration. We have observed teachers implementing arts integration in many other classrooms and by way of illustrating the classroom reality of implementing curriculum change and the introduction of a new pedagogy, this article will describe a week's delivery of arts

integration in a Melbourne classroom. This experience in a Melbourne school has informed the research journey that is currently playing out at Oturu school in Northland.

While arts integration can be viewed in a variety of ways, such as a school-wide interdisciplinary project, our studies, have focused upon "regular use of the arts as a tool for learning and representing knowledge within another subject" (Martin, 2016, p.3). If a generalist teacher is able to adapt her/his teaching pedagogy to include arts integration in the classroom, then such an approach may be sustainable. We acknowledge that there are many different definitions of arts integration, and some concern has been raised regarding arts activities offering only simplistic understandings of difficult concepts (Green-Gilbert & Koff, 2017). This is certainly a concern that needs to be addressed and we are currently working on the development of tasks that lead students to deeper learning.

As in many other western countries, New Zealand education has become aligned with developing students' skills and abilities and has "largely surrendered to a narrow and reductionist instrumentalism" (Codd, 2005, p. 194). Until recently in New Zealand, students were tested to National Standards in literacy and numeracy and this has resulted in teachers spending time in preparing students for the tests, and in turn, narrowing the curriculum. Berliner (2011) states,

> Curriculum narrowing reduces many students' chances of being thought talented in school and results in a restriction in the creative and enjoyable activities engaged in by teachers and students. The tests commonly used with narrower curricula also appear to restrict thinking skills (p. 287).

Where equity for all students was once a focus in New Zealand education, this appears to have been lost through neo-liberal policies that, "promote marketization, school self-management, local governance and strong centralized forms of control and accountability (Codd, 2010, P. 193). Historically New Zealand education has not subscribed to neo-liberal policies,

> on the contrary, it had been previously seen as a laboratory for the welfare state…… In a sense {it was] a model country to act as the bearer of a successful reform model, and as an example to other similarly placed countries as well as to the rich countries of the OECD (Dale, 2001, p. 498).

The changing face of education in New Zealand has seen a move away from arts education in schools, (Snook, 2012) despite a mandated arts curriculum that was introduced in 2000. The pressure of National Standards and the resultant focus on literacy and numeracy has combined with a lack of space and a nervousness to teach the arts, so that arts in schools have generally been relegated to extra-curricular performance activities such as a school musical (Snook, 2012). The arts are often at the margins of school life in terms of products or performances and are often used in school promotion. New Zealand educators, Fraser, Atkin & Whyte (2013) are concerned with the lack of process driven arts in classrooms and warn of the death of progressive education in New Zealand stating, "if we are really serious about improving learning for all students, we need research-based practice on what grows student learning" (p.2). Their publication 'Connecting curriculum, linking learning' cites Beane (2005) who argues,

the work they [students] do should involve more making and doing, more building and creating and less of the deadening drudgery that too many of our curriculum arrangements call for (p.136)

While New Zealand education is currently under revision (2018), Australian education remains fixed in NAPLAN testing and reductionist measures. Similarities in curriculum design exist however, as do fluctuations in delivery of the arts curriculum (Bamford, 2006; Buck, 2003; Fraser, Atkin & Whyte, 2013; Snook, 2012). If New Zealand education is to maximise the delivery of a quality arts education for all learners as set out in UNESCO's Seoul Agenda (2010), then it is important to acknowledge that although arts education appears to be valued in the curriculum, "relatively few teachers, fewer schools and even fewer governments are actually willing to realise the potential of arts education" (Buck & Snook, 2017, p.219).

Teacher accountability to meet pre-determined standards and objectives has seen students missing out on any sense of individualized curriculum of special interests or needs. Quality teaching responds to learning models where "all students have a strong sense of involvement" (Meiers, 2003, p.27). In order to reach all students, we suggest an arts integration pedagogy where students not only learn through actively 'doing', they also have opportunities to work cooperatively, to problem solve and to engage creatively.

WHY ARTS INTEGRATION?

During the late 19th and early 20th century, positivism provided a philosophical ground for behaviourism where every observable effect had a cause, and it was assumed that "science itself was the only way to procure reliable knowledge" (Efland, 2002, p.5). Such philosophies extended into education and with a history dating back to Plato, it is not surprising that there remains a general lack of understanding about the complex role and value of arts education when dominant populalist views of the arts as performative entertainment dominate within education contexts. Furthermore, there is little understanding of "the substantive role the arts can play in cognitive development" (Efland, 2002, p. 7).

It has been some time since Howard Gardner introduced the concept of Multiple Intelligences (1983), and going back even further in time to Dewey (1920), arts educators have long understood the arts as a way of knowing (Dewey, 1920; Eisner, 2002; Gardner, 1999; Greene, 1991). Our study proposes that the process of arts integration is an inclusive method of teaching students that encompasses diverse learning needs. Gardner (1983) originally listed seven different intelligences, but it is important to remember that nobody functions with only one type of intelligence, and to date "we do not have psychometric techniques that directly access an individual's capacity for a particular intelligence" (Davis, Christodoulou, Seider and Gardner, 2011, p. 487). As all teachers are aware, students are far more complex than their intelligence alone. Personality, context, nature, nurture, history and emotion all play an ever-changing role in their development. Arts integration engages different types of intelligence and goes beyond that to encourage students to work cooperatively with others in order to enhance their learning.

Efland, (2002) proposes Vygotskian notions that have implications for learning in the arts. "First, like all learning, the study of art should not be studied in isolation, but seen in relation to its social context"

(p. 49). Arts integration supports Efland's (2002) theory of negotiations between two or more people as a process for learning, and we emphasise that arts integration allows this theory to apply to all learning in every subject. Perkins contends in Mueller (2001) that "we learn from each other, in many instances better and more deeply than from the text" (p.5).

Since Gardner's (1983) theory on multiple intelligences emerged in the eighties, schools have become aware of the need to cater for more than the verbal-linguistic and logical mathematical intelligences in learning. The current focus on these two areas however, has shifted pedagogical approaches in teaching back to more conventional methods.

Sankey, Birch and Gardiner (2010) emphasise that learning modalities do not operate in isolation, but within a continuum that blends and responds to the environment and instructional stimuli. Offering an arts integration approach to teaching and learning opens up opportunities for all students, possibly closing gaps between the high achieving students and the rest of the class. Sankey, Birch & Gardiner (2010) state, "students engaged in learning that incorporates multi-modal designs, on average, outperform students who learn using traditional approaches with single modes" (p. 854). The high achievers are prompted to think beyond text bound curriculum, exploring and critically reflecting upon appropriate solutions. Similarly, students struggling in literacy, numeracy or science may better respond to experiential, open-ended learning tasks that draw upon different means for expressing knowledge.

We theorise that an arts integration pedagogy engages different intelligences in each given task, depending on the subject matter being taught. We would suggest that such an approach should suit all learners equally well. The emphasis is on the process of learning and not bound by limiting rules. It is possible to have a different answer to the next person, yet still be 'right' in an arts integration classroom. General principles of development mean that students develop at different rates which can cause problems for some students in a conventional classroom. Conversely, stimulating environments, such as an arts integration classroom, can offer all students an opportunity to grow and develop (Woolfolk, 2014). The arts are also trans-disciplinary and transferable from one field to another. Root-Bernstein (2003) posits the phenomenon of synosia (To know and feel simultaneously). He explains, "a person experiences a sensation in one of the five senses when another of the senses is stimulated" (p.65).

ENJOYMENT IN LEARNING EQUALS INTELLECTUAL ENGAGEMENT

Back in 1951 Theo Dalton stated that a good classroom is, "characterized by a relaxed atmosphere, by evidences of wholesome and purposeful activities, by displays of children's work and the best use of available facilities" (p. 429). Little has changed for students and teachers. Achieving satisfaction and enjoyment requires a relaxed atmosphere, which in turn encourages student engagement, leading to personal success. Gorard and See's (2011) study on enhancing enjoyment in schools stresses the importance of enjoyment in promoting student engagement for all students. A Canadian study by Martin (2017) that examined the effects of arts integration and socially empowered learning in primary classrooms, discovered that in general classroom situations, only 37% of students were intellectually engaged: "Students are not connecting with their work, and that attendance is not synonymous with intellectual engagement" (p.2). It would appear that curriculum narrowing has taken away the enjoyment factor for many students, and arguably lessened engagement. We believe that this can be turned around through the implementation of an arts integration pedagogy.

As teachers, the present researchers attest to the view that pressure does not result in a relaxed teaching experience, that could result in a less than relaxed learning experience for students. While there has been pressure to focus on literacy and numeracy, teachers are also asked to account for their teaching outcomes, mark and report on student achievement and create individual student profiles, adding to a general feeling of too much to do in too little time. This does not equate with creative teaching, which within a classroom context is necessary for engagement and motivation (Lesser, 2008). Fostering creativity, and by association, having fun in the classroom is too often regarded as something for after the 'important' work has been completed; perhaps as a reward for working hard, or perhaps there is no time at all for fun or flexibility. The fun we are subscribing to is related to enjoyment through learning; which fosters a happiness to be engaged, to be present. It is fun with a serious purpose. DeMoss and Morris (2002) examined the meaning of fun when applied to arts integration experiences. They concluded that amongst students there was, "a common appreciation for active learning, learning in which they could participate. They retained language about learning and understanding, but they readily admitted that they liked this work more than what they experienced in traditional units" (p. 15). As with DeMoss and Morris the present authors posit that fostering a joy for learning and better achievement has strong associations with teachers providing creative or 'fun' learning experiences and a happy classroom. When students in de Souza Fleith's (2000) research were asked for their definitions of creativity in their classroom, they discussed their school work and also emphasized that it was about having 'fun' in the classroom; "arts activities were associated with creativity" (p.151).

Catering for creativity in the classroom through fun and engagement allows each student to find their own voice. GoetzZwirn & Graham (2012) bemoan the fact that schools are obsessed with testing where schools become dull and depressing places:

> Personal exploration and interests are forgotten, craft and artistry are forsaken, as test preparation dominates classrooms. Students who are different become strangers and problems for schools that are designed to teach everyone the same (p.269).

In a closing speech at an invitational meeting for education, Robinson (2000) cites Archbishop Temple, "Our job in education is to teach children to feel together and to think for themselves rather than think together and feel alone" (p.33).

METHODOLOGY

The research question driving this research is 'How does an experienced generalist teacher implement an arts integration pedagogy within her classroom and what meanings do teachers hold of arts integration? For the present authors, a constructivist theory is central to gaining perspectives on learning and therefore it is through a constructivist framework that we have begun to investigate the shaping of a different teaching pedagogy in schools from the conventional approaches of the past. A constructivist approach does not dictate how to teach and learn in classrooms but allows us to look at questions relating to the 'undisciplining' of arts education. Constructivism supports our efforts to examine the pedagogical implications of offering an arts integrated pedagogy in schools. According to Fosnot (2005) constructivism allows the researcher to gain new insights through,

a theory that describes knowledge not as truths to be transmitted or discovered, but as emergent, developmental, non-objective, viable constructed explanations by humans engaged in meaning-making in cultural and social communities of discourse (p.i).

As we gather information on how well arts integration engages student learning, the theoretical perspective stemming from constructivism allows us to interpret meaning from collected data. Constructivism is particularly suited to probing and understanding social phenomena as,

from the interpretive perspective, the serendipitous and intuitive are not liabilities, but opportunities in the effort to understand human phenomena. This perspective assumes that, while producing accurate information, research processes and products can also be artistic (Rodwell, 1998, p.16).

There appear to be similarities between a constructivist theory and the arts integration process of learning. Both are concerned with communication and interpretation of meaning. Our research is concerned with identifying how teachers implemented an arts integration pedagogy into their classroom teaching and by association, what meanings do teachers hold of arts integration?

This research focuses on many different classrooms. All of our endeavours are in the early stages. In the present article we have chosen to document a week's observations in a Melbourne school that may provide "depth, detail and individual meaning" (Patton, p.17). Of great relevance to classroom teachers is the validity of their individual meanings. Again, we as researchers and experienced teachers 100% respect that a classroom is the teachers' place of work, where they are 'the' expert in teaching children. As such, understanding an individual's construction of meaning is paramount. Following our observations of the delivery of an arts integrated pedagogy in Melbourne, Australia, we conducted a series of semi-structured interviews with one primary school teacher and her students. Classroom reflection times followed each practical activity allowing the researchers to gather information regarding student perceptions of the success or otherwise of each activity at a personal level. Students not only related to what they had learned but were able to verbalise how they believed that they had learned through arts integration. This information has been coded and analysed in order to develop an understanding of meaning.

Eisner (2002) supports the arts delivery through a constructivist pedagogy employed in schools where knowledge is built and rebuilt, and through this process learners make sense of the world. He states, "The greater the pressure on schools to standardize, the greater the need for the arts" (p.8). Rather than learn for a test where there is little room for imagination or personal investigation, students engaged in the arts learn through 'doing' and 'making' and not only build on what they already know, but develop confidence and self-esteem through success and enjoyment. "Meaning and understanding are amplified through art, and opportunities for individual expression, make learning personally relevant" (Goetz Zwirn & Graham, 2005, p. 267).

OVERVIEW OF ARTS INTEGRATION

Research provides different arts integration programmes and possibilities (Buck & Snook, 2017; Werner, 2001; Wilkinson, 2010). Buck & Snook (2017) listed the following perceived outcomes from implementing an arts integrated curriculum:

* Success within an 'arts across the curriculum' pedagogy does not rely on performance or product outcomes.

* It emphasizes an experiential pedagogy whereby students learn by 'doing'.

* When engaged in an enjoyable process, students are more likely to retain learning.

* An 'arts across the curriculum' pedagogy accepts strengths and biases in teaching specific arts disciplines, but encourages involvement of all the arts.

* An 'arts across the curriculum' pedagogy offers opportunities to assess learning objectives in all curriculum areas covered in a project (p. 21).

Australian and New Zealand schools have learning objectives in all subject areas including the arts.

One-off projects or artists in the classroom offer stimulating opportunities and experiences but are intermittent. We believe that the most important people in our research are the classroom teachers as they are the key to an ongoing implementation of arts integration.

We fully concur with Haberman (1992) who stated, "Classroom teachers by controlling their teaching behavior, still retain the most powerful influence on students' learning and can serve as curriculum leaders" (p.11). Research (Buck & Snook, 2017) has indicated that teachers are unsure of what and how to teach when using an arts integration model so we sought to observe a teacher who was willing to spend a week teaching through an arts integrated pedagogy. Lesson plans were prepared and adapted though ongoing conversations between the teacher and the researcher.

OBSERVATION OF ARTS INTEGRATION IN A MELBOURNE CLASSROOM

A class of primary school children from an independent, non-sectarian and non-denominational primary school in Melbourne provided a case study for five days of observation and interviews. The 18 children were aged eight, nine and ten years of age, and although this was not a designated 'special needs' school, many of the students in this classroom had varying degrees of learning and behavioral difficulties. The teacher was accustomed to teaching creatively, but had not been specifically using an arts integration pedagogy. She was prepared to adjust her teaching to trial a series of arts integrated lessons with her students. We began by developing a series of arts integrated lesson plans for the teacher to work with. The lessons were sent backwards and forwards (Australia and New Zealand) between the teacher and the researchers adjusting the lessons according to teacher comfort, interest and the students' capabilities.

The lead researcher flew to Melbourne and met with the teacher and fine-tuned lessons. On the first morning, students were asked by their teacher to use a movement sequence to introduce themselves to the researcher. The movement was to describe who they were, what they liked doing and how they might have been feeling. Although the students were given clear instructions with the teacher modelling expectations, and a few minutes to prepare their movement sequence, most students reverted to Auslan sign language, something that they were familiar with. These students were used to moving and using their bodies to communicate, but this exercise was different and therefore they struggled to understand the expectations of the task. Following the lesson, the teacher commented

that the students were over-excited by the fact that a researcher from another country was observing them and the fact that the furniture had been re-arranged had caused more excitement, and in turn, a lack of concentration. As the teacher worked through the different activities during the week, successful outcomes were achieved, but each activity took a great deal longer than the researcher expected.

As within every school many diverse and competing activities were evident. Because this school runs a small farm there are many duties that are the responsibility of the students. Moreover, other people would come into the room to announce "The horses have arrived" as an example. This meant that designated students had to leave to deal with the horses. At the time the research was being undertaken, school musical rehearsals were in full swing, so other teachers would come and take particular students whenever they were required. The musical took priority over everything else. On one occasion, the whole class spent the entire day at a Musical rehearsal. The other reasons that made the arts integration activities so time consuming related to the individual needs of the students. The teacher would intuitively choose which child needed particular attention at any point in time, and deal with each situation accordingly.

Irrespective of the usual daily interruptions, by the end of the week, the students gained experience of learning within an arts integrated activity and the final lesson is documented here to provide an understanding of what the lesson contained and how an arts integrated process was achieved.

A LESSON: WHAT DOES ARTS INTEGRATION LOOK LIKE?

One lesson was about the migration of the Arctic Tern who flies from the north to the south pole and returns each year. Migration was the main theme that incorporated the arts along with aspects of geography and physics. On the first day, the teacher set up the lesson by introducing a globe of the world. She provided contextual information about the Arctic Tern, migration and the south and the north pole with much questioning and discussion from the students. She then set up a flocking activity outside of the classroom. To begin with she attempted to get the students into a 'V' formation and have them walk slowly in formation. This was unsuccessful as several students chose to misbehave. The teacher took the activity back to a point where all students stood still. When she touched someone, they moved their upper body slightly and had to sense where the movement was coming from. This was successful in calming the students and bringing their attention back to the task.

Once again, the flock of students began moving in their 'V' formation. When individual students were being silly, the teacher intuitively introduced the idea of role playing a crow who would catch anyone who left the formation. To begin with, this encouraged a lot of screeching and running. As the group started breaking up, small groups started forming of their own accord. The teacher encouraged this to continue, with herself and the student teacher as the crows monitoring the flocks of birds. The flocks began to understand how to use their peripheral vision to change the direction of the flock while still maintaining a 'V' formation. When some of the students felt threatened by the crows, they began to break away and return to the larger group. This activity went on for some time until everyone was working with an understanding of flocking.

On return to the classroom, a circle reflection was held where the students were asked why birds fly in formations, and how it felt to fly with a flock of other birds. The students made some interesting observations. One student stated,

> I felt best when I was in a big flock and I made a plan [while flying around] to take it easy as I was part of a big flock and I had an army of my own, so it would be harder to find a gap when you were being threatened.
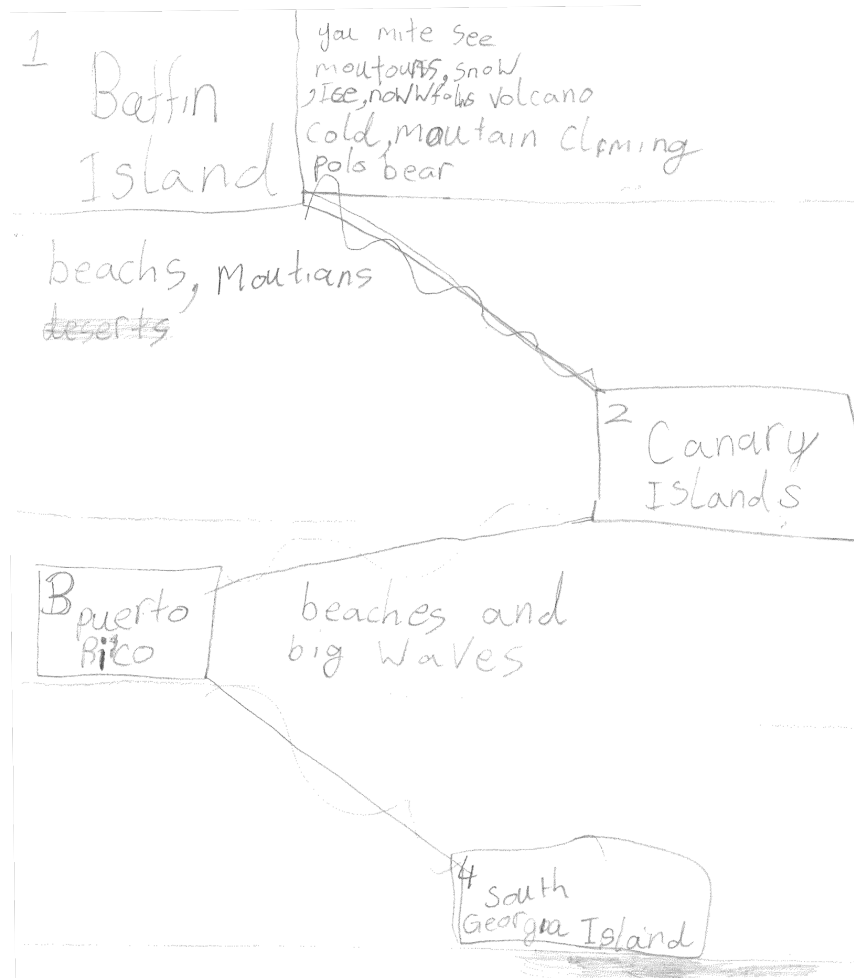
Another student felt safer in a small flock because it was easier to stay in formation, while another girl was scared in a small flock, but started to realise that she just needed to calm down and that way she could just stay with the flock. Everyone wanted to speak. Eventually the conversation turned to the aerodynamics of the slipstream that the formation had created. The students realized that their formation was creating a slip stream that allowed them to fly faster and follow each other's pathway where there was the least air resistance.

The second half of this activity took place the following day. Students were warmed up and the teacher recapped migration routes and the north and south poles. Students were broken into four different flocks, each allocated with a different colour. Pages with numbers and colour-coded names of countries had been placed around the school grounds. Each group needed to fly around the school picking up the country names as they found them. When they arrived back with all four countries, they looked on a globe of the world and traced their migration route. They then used computers to research information about each of the four countries. One of the boys with profound learning difficulties found a country on a computer, and for him, that was a huge success. Once they had found the countries the students were required to draw some features of each country on a piece of paper.

During the reflection time, students spoke of the difficulties they encountered as they found it quite a difficult task to find the countries, as they had thought it would be easy. When they arrived back, the numbers on the pages helped them to trace the migration route and they were able to work out whether they had flown from south to north or north to south. Students documented what they saw. When it came to what they saw on the way, the students were very imaginative.

> I saw candle making in Japan and in Papua New Guinea I saw a monster and ate a vegemite sandwich.

> In Baffin Island, there was a tiny bit of grass. It was cold there and there were some people living there.

1 Baffin Island | you mite See moutouns, snoW, Ice, noWWfoWs volcano cold, moutain clming Pols bear

beachs, Moutians deserts.

2 Canary Islands

B puerto Rico | beaches and big Waves

4 south Georgia Island

Appendix One: Documentation from the Orange Group.

Our first destination was in Kurgastan next to China, lots of forests and elephants. They have lots of snow. Then from there we went to Sri Lanka, to Madagasca and lots of tropic stuff. Then we went to Herd Island which is very tiny.

Appendix 2: Documentation from the Red Group.

Further discussion took place about animals who migrate every year and the question was posed: are there humans who have to migrate every year? A long list of occupations was collated, with pilots, actors, photographers and journalists as examples. The reflection finished with a discussion about ambassadors and doctors without borders.

Overall the students had engaged enthusiastically over the two sessions and in doing so had not only learned about the topics covered, but had worked cooperatively and creatively. The students were interviewed following the activity and one student aged 9 stated,

> I learned how far birds fly and how cool it is that they know where to go without maps and things, and that's pretty cool. I started at Pigeon Island and Arctic Terns fly from the top to the bottom of the world once or twice a year. I think that by finding the places it was like you were going around the world. It was moving around.

The week of observations revealed that although the students had engaged enthusiastically in the activities, the teacher had felt more exhausted than usual at the end of each day. It may seem that the children didn't actually 'dance' as in a conventional understanding of dance. Our research accepts all movement as dance providing there is an aspect of creativity stemming from the students themselves. There may be times when student dance making in response to a task, results in something that could be performed for an audience. This is however, never the focus of arts integration. The flocking, while simple, allowed students to move their bodies and experience learning

in a different manner. The flocking activity allowed students to bring the group with them by changing direction, so that decisions made were group decisions. The enthusiasm that resulted, allowed a stimulated classroom discussion, beyond the teacher's expectations of her students.

Students also engaged in spelling by creating a different movement for each letter of their word and then performing while speaking aloud. Maths activities also engaged the students in movement. Students moved around the room holding onto numbered cards, and according to instructions given the students would join with another person to create a movement sequence accordingly. For example, a simple adding activity required a pair to create the number of movements on partner A's card. They would then make a plus sign, add partner B's number of movements, create an equals sign and then create a movement sequence that contained the correct number of counts. Fractions, division and multiplication, syllables and verbs were all taught through movement with variations according to the requirements of the task. One of the activities required the students to engage in visual art, music and dance. The teacher had asked that a lesson was created regarding introduced animals in Australia. The children were given a card with a picture of an animal or bird with supporting information. Each student summarized what was on their card for the larger group. A general discussion about introduced animal species in Australia followed. The class was then divided into small groups. Each group chose one animal to focus on. They then wrote their own lyrics to a popular tune such as the Australian favourites, 'Kookaburra sits in the old gum tree' or 'Give me a home amongst the gum trees'. Students were asked to ensure that they got their message across. Once the group had learned their song, they then created movements that supported it. Each group presented their song and dance to the larger group, while at the same time learning valuable lessons about introduced animal species.

At the end of the week students happily engaged in short interviews of 10 minutes. After transcribing the interviews, it was clear that each student expressed an understanding of the learning that had emerged from the activities. The analysis of the transcripts revealed an insight into the inclusion of arts activities and how they helped teach and learn ideas about migration and the other topics that had been covered.

The school does engage in a 'learning by doing' philosophy, as evidenced by the farm animals, gardens and focus on the school musical. This may have assisted in their understanding of how the arts activities assisted in teaching and learning, but without exception, all of the students conveyed an understanding and appreciation for the week of learning through arts integration. A one-hour interview with the teacher revealed findings that were surprising to the teacher herself, especially regarding the level of participation and learning outcomes.

> There were children who participated who would not normally participate in that style of lesson, or if they did, they wouldn't appear to get anything out of it, and they definitely did. I also have kids who do not generally learn well in a general classroom, and I could see that they benefitted from something like this. For example, the child who is never very confident with maths and will never put her hand up to answer anything, and barely recognizes numbers, during the activities she gave some really good answers. She really enjoyed it so that was a big surprise for me. Some of the boys who I thought would have a bit of a laugh and not pay attention, they did, and they really enjoyed it, especially those boys doing the really hard spelling words. A couple of those boys are low spellers and I wanted to see

what would happen if I gave them a hard word to test them out. One of those boys skipped only one letter of the word, and normally he wouldn't make connections to get many of those letters at all. He's still learning the first 100 words in English and he's in late year 3 work. He is working at a very basic level and I gave him a hard word, eighty. He got everything but the g I think. In time, he got the g. One of those boys was average and one was an advanced speller. I had tested the advanced speller last week, and he didn't know those words then. They were turned into movement and he quickly and effectively picked up the word subtle. They all participated and they all gave answers, even our kids who don't normally talk. I got them to say things and they did and they did know what was going on and they did respond well. They all seemed to think we were having a week of playing I think. Just playing games but they were getting something out of it. I know that some of the boys talked about wanting extending in some areas mathematically and I guess those things need to be worked on as to how you would extend them, but for the kids who've been the main problems, it was good to try a new approach for them. For those who are used to getting everything at once, straight away, maybe they've worked in a different way and worked a bit harder because it was different for them. They all enjoyed it, that's main thing.

This feedback from the teacher was a valuable reflection on the implementation of an arts integration pedagogy. While a researcher can observe all children happily engaged in an activity, teachers know their individual students and in this case, the special needs within this classroom. The teacher's comments highlighted the importance of the teacher providing the arts integration rather than a visiting artist.

FINDINGS

Several points emerged from our observations. These include:

- Students worked cooperatively to experience individual success.
- Students experiences were different within a group.
- While the lessons were more difficult to deliver and grasp, the teacher and students enjoyed learning and teaching.

Overall however we observed that this was a typical busy classroom full of complex interactions. Not everything works when we teach, and not all activities observed over the week were successful. Yet, there were many examples of individual success where students had clearly extended their learning. A child with a profound learning difficulties found a country on a computer, which was a huge personal achievement. A child who barely recognises numbers, gave some good answers to maths problems, a student with a low spelling ability made connections and was able to recall all but one letter of a difficult word. All activities were conducted within pairs or a group, yet the outcomes for individuals appeared to be considerable, especially considering the short time that the students had been working through arts integration. It appeared that students were prepared to take risks in their learning when working in this arts integration manner, they felt that they were having fun, and engaged wholeheartedly in the process. Siedel (2000) sums up this experience,

> Quality arts programs are designed to guide cognitive development in a loving way that fuses the intellectual with the spiritual – "the combustion of human spirit and cognitive discipline" – and urges the stdents forward in their search for truth (p. 30).

During the reflection periods after each activity, students were enthusiastic to share their thoughts and experiences. The discussion around flocking was a good example of how different students experienced this activity in different ways. Some students attempted to push the boundaries and required the teacher in role as a crow to bring them back to the task. Others felt safe within a large flock and there were those who formed breakaway flocks where they expressed their individuality. There was no requiement for right or wrong answers within the process or the reflection which allowed expressions of individual creativity. A study by Gokhale (1995) examined how collaborative learning enhances critical thinking. The outcomes included a development of understanding through a more relaxed atmosphere that, "makes problem-solving easy. It was fun" (p.5).

Both the teacher and the students conveyed some nervousness to begin with during the week of arts integration lessons. The students' nervousness at the start saw them revert to what they knew when they were asked to express themselves creatively through movement, and they instead provided instead Auslan Sign language. The teacher commented that they had been very excited about a visitor in the room which may have contributed to their nervousness. The teacher herself expressed a nervousness regarding compliance with a lesson plan. She stated,

> I think for me as a teacher, I've never gone very well with other people's lesson plans. I take what I can from them, have a glance over them and go, yep, yep, I see that, that works well, and then just run my own lesson. I was a bit nervous knowing that you were going to be there and would be wondering what you were thinking, what is she doing, that is not exactly as we planned.

This teacher considered herself a creative teacher. She has a background as a dance teacher, is an author, and has engaged in community drama and dance activities for most of her life. Despite this, she was concerned with 'getting it right' in this instance. She could see however, that lesson plans and detail were important to many teachers. She stated,

> I can see that some teachers really do need that, and I'm working with one at the moment. The student teacher really needs a list written out and she'd benefit from absolute detail. I've asked her to be more creative, and she freaks out, so it's good to have lesson plans.

Lesson plans would assist teachers in knowing 'what' to do in an arts integrated lesson and professional development could assist teachers in knowing the 'how' to teach an arts integrated lesson. When developing a professional development programme there are multiple factors to consider, such as the teacher's knowledge, experience, the context of the classroom, of the wider school community and beyond that, the society in which the school is situated. According to Timperley, (2008) "It is important to set up conditions that are responsive to the ways in which teachers learn" (p. 6). This may seem an obvious statement and yet each teacher is different, catering for differences within different contexts is a complex problem.

Another factor that emerged during the week of arts integration activities was the amount of time that it took to set up and deliver each activity. The teacher was more tired than usual at the end of

each day. This was possibly because the approach was new and each step required a deliberate action, rather than allowing an intuitive teaching pedagogical approach to flow. There were often cards to make, or county names to colour code, number and distribute around the school buildings. All of these actions required extra work, but once they had been created, could be used again in another lesson.

DISCUSSION

Observing one teacher in one classroom provided opportunities to gain rich insights concerning classroom realities and teacher concerns. A clear finding from this small case study was that in implementing an arts integration programme, teachers would need professional development. In our Melbourne case study, we found that despite the teacher having arts qualifications and experience, understanding the what and how of arts integration was a challenge. Again, this case study reiterates the importance of fully appreciating the teachers' context and learning journey. Before embarking on a professional development programme, it would seem wise to establish a context in which teachers are ready to embark on a new journey. Shulman and Shulman (2004) discuss the difficulties in establishing a community of learners [teacher development],

> Our particular challenge was to create a teacher education experience that would prepare teachers to create, sustain and educate in a 'community of learners'…the work was quite daunting, and we were reminded constantly of how enormously different from one another were the teachers with whom we worked, and especially how much they varied in the ease or difficulty with which these novel ideas were accepted and applied in their work (p.257).

When providing professional development for teachers in arts integration, the problems of teacher learning are exaggerated, as rather than learn about a new topic, teachers are being asked to change their well-established teaching pedagogies. Shulman and Shulman (2007) established that in order to learn, teachers need to be "ready, willing, able, reflective and communal" (p.259) and beyond that, "the features of accomplished teacher development, and thus of teacher learning are: Vision, Motivation, Understanding, Practice, Reflection and Community" (p.259).

Teaching may sometimes look easy to an outsider, but it is a complex activity that requires moment by moment decisions. Teachers may spend many years building a confident base from where their personal pedagogy is formed. While this article contends that an arts integration pedagogy encourages a high level of student engagement and personal achievement, there may be some resistance from teachers when it comes to implementation. A teacher may assert that what they are already doing is working successfully, so why change it? Why indeed? Perhaps the question to be asked here is, what impact would a change in my pedagogical approach have on student outcomes? "Further, success needs to be defined not in terms of teacher mastery of new strategies but in terms of the impact that changed practice has on valued outcomes" (Timperley, 2008, p. 8). If a teacher then takes the next step in deciding to trial an arts integration pedagogy, then professional development would arguably be essential. Such a large change in a pedagogical approach to teaching would require support, from principals, colleagues, students, parents and above all, teachers would require support from specifically developed, professional development programmes.

Alongside the many examples of arts integrated classrooms that have been documented through qualitative research methods, Martin (2017) has documented the findings of a research study in Canada where data was gathered through a quantitative process that included psychometric testing.

To date there is limited empirical research measuring the effects of arts in education. Martin's (2017) research appears to be a rare academic study that measures the outcomes of arts integration through quantitative research. Her concern for a decline in student engagement in Canadian schools, led to the introduction of "three different pedagogical approaches believed to increase student engagement in the middle years" (p.2). One of these approaches was titled Arts Integrated Collective Creation (AICC). Of the major findings, Martin (2017) states,

> Findings advance the theory of socially empowered learning in identifying an instructional approach that effectively increases intellectual engagement: Educational Arts Integrated Social Enterprise (EASE) (p.3).

It can be assumed that where disengaged students become engaged through arts integration, then those students who are already engaged in learning will achieve at even higher levels than they had in the past. Evidence to date suggests that all students benefit from an arts integrated curriculum (O'Ryan & Tishman, 2017; Fleming, Koff & Warner, 2001; Merrell & Tymms, 2010; Fraser, Aitken & Whyte, 2013).

CONCLUSION

Despite the obvious obstacles involved in undisciplining the arts, and employing an arts integration pedagogy, the advantages of such an approach may be weighted up alongside the difficulties. There is considerable research (Clapp. Ross, Tishman, 2017; Gardner & Boix-Mansilla, 1994; Clapp, Ross, O'Ryan & Tishman, 2017; Fleming, Koff & Warner, 2001; Merrell & Tymms, 2010; Fraser, Aitken & Whyte, 2013; McDonald & Melchoir, 2008; Werner, 2001) that documents the successful integration of the arts in a school curriculum. Koff & Warner (2001) state,

> Integrated teaching deepens education by allowing students to enter each project with their strengths, to build up their learning weaknesses within a safe environment, and to explore ideas in their natural context so that the ideas are connected, thus creating greater possibilities for the retention of the concepts (p.143).

What we are proposing is not intended to completely replace tried and true pedagogical approaches to teaching. Research (Buck & Snook, 2017; Fleming, Merrell & Tymms, 2010; Martin, 2017) suggests however, that an arts integrated pedagogy could assist in developing student confidence and creativity and develop leadership skills through collaboration and problem-solving activities. Where arts integration is employed alongside conventional teaching methods, students will happily engage in their learning, increasing their personal academic outcomes.

The journey ahead however is a difficult one that may be prone to falter at different points along the way. The first step would be to create a sustainable culture where teachers feel "ready, willing, able, reflective and communal" (Shulman and Shulman, 2007, p. 259) to make change. When establishing sustainable change, all parties must share a common understanding of the goals of arts integration and how they might be achieved. It is important to look at the broad objectives of arts integration to establish a shared set of values. Marshall, Coleman and Reason (2011) discuss establishing sustainability in leadership and have created a series of points that relate to their specific projects. Their points however, have relevance to an implementation of an arts pedagogy in schools.

1. Create an enabling environment
2. Define objectives and plan how best to attain them
3. Build alliances
4. Check in with opponents – share concerns and investigate their understandings
5. Begin to deliver (Research, developing products)
6. Publicise products
7. Continuously monitor progress (p. 161)

While an arts integration programme may not have opponents in terms of an organization, there will be those who do not share the enthusiasm of others and for any number of reasons, may be averse to arts integration. It is as important to acknowledge and understand different points of view as it is to encourage and support those on the arts integration journey. Keeping the project in the public eye will assist in developing an understanding and in turn bring support to those of the arts integration journey.

Despite the limits of the size of this study, the findings support other research conducted (Buck & Snook, 2017; Buck & Snook, 2016; Snook & Buck, 2014). This Melbourne school observation provided more evidence of the challenges and benefits of arts integration in classrooms and has provided more detail that is shaping our ongoing research. We have taken our learnings from Melbourne and begun to work with teachers and school administrators in Oturu school in the far north of New Zealand. Here all teachers are learning to implement arts integration within their classrooms. In our research journey we hope to report on further challenges and successes as observed by teachers, Principals, administrative staff and students at Oturu School.

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(AN)AESTHETIC EXPERIENCE AND PERFORMATIVE SPACE

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The rise of information and communication technology goes hand in hand with what might be considered a democratic revolution of the teaching profession. The teacher and the school are no longer defining what can be considered valuable knowledge. Basic didactic issues in teaching (what, how, and why) change fundamentally as students express that they 'just do' and 'find' through social media, online resources and software for creation, reflection and presentation. Learning theories and proven teaching models suddenly become superfluous, so concepts such as truth and values must be considered in a new light.

Drama in education involves processing issues through evocative and emotionally engaging design. This fundamental purpose is often formulated as an intention to stimulate critical thinking. However, despite this explicitly democratic intent, drama activities are always site-specific insofar as issues of portrayal, reflection and discussion are staged within the framework of a pedagogical idea. A thought is never free, leaving us with the question of to what extent thinking through drama can be called 'emancipated'. Additionally, drama is still ruled by contextual and physical laws so much so that bodies and voices are limited, gender specific and spatially located. Therefore, emotions are at play and pedagogical setting are carefully prepared and managed by the teacher.

The aim of this article is to make a Deleuzian investigation of into the possibilities and challenges of how best to extend aesthetic bodily communicative and performative spaces in relation to digital technology in drama education. Hence, we are trying to navigate the rhizomatic experience of believing that we know in which direction we need to go, given that whilst we educate drama students they are also educating us.

Groups of children and youngsters seem to be rhizomatic 'by nature', subversively searching for adventures on their own, finding leaks, exploring 'forbidden' areas, conquering cyber space, creating their own drama, while at the same time playing the game of the machine. Virtual life can in these circumstances be both phantasmagoric and uncontrollable.

KEYWORDS

Drama, body, virtual, theatre, human.

THE MACHINE, THE BODY AND THE BEAST

 (An)aesthetic experiment – anesthetic experience. Transforming transition: becoming Little Red Riding Hood becoming….

(An)aesthetized being leaves aesthetic space: the door is shut, a dramatized moment is enclosed; and the performance site dissolves into performative space. Small feet are climbing up the stairs, and a red riding hood bobs on the top of a little moving body machine. Limbs come to mind in a sense of loss. Something – for a moment composed of Little Red Riding Hood – is dissolving, partly seeking new connections; connections reminiscent of 'an ordinary human being'. Still something is missing: moving feet connecting to steps; steps bringing the bodily machine upstairs; mind drifting around like a kaleidoscope; diverse dimensions of images, sounds, words, movements are momentarily becoming 'her'. Mind is slowly taking shape, becoming convergent, becoming corporeal. Mind becomes a body, becoming something called 'her'; an actualized virtual human being – bones, blood and flesh enclosed by skin – a contingent corporeal being. (Pinching herself, making sure her corporeality isn't an illusion, like the fictive Little Red Riding Hood). Keeping the red riding hood on, the corps which is supposed to be her feels the door handle while touching it. Behind it seems like empty space, but space echoes, shivers, smells, floats, streaming into different directions. The soft, seductive sound of the big, bad wolf is still trying to cheat Little Red Riding Hood, and splits into fragments, transforming the uncanny voices of new creatures, beasts, werewolves, vampires, sirens, cyborgs, replicants, avatars. The former Little Red Riding Hood is moving, shaping her future step by step, connecting, making new figures, creating life, but becoming what? There is still a weird sense of loss…

… on another plane, a little machine is calling from the inside of a suitcase, locked up in a cupboard, calling, screaming, crying out its desire to be connected…

…suddenly the fragments of Little Red Riding Hood are situated in a room, facing a computer, connecting to cyber space. Still something is missing. It feels like amputation, even castration(!). Limbs momentarily assembled, mind confused by the feeling of having lost essential bodily parts – loss of 'phantom limbs' like the voice, an extension, a mediator – being is moving around in cyber space, simultaneously connecting to diverse web sites, hundreds of identities, splitting into lots of dimensions – a thousand plateaus. While searching for whatever is lost, the fragmented being suddenly assembles, draws back from virtuality to actuality by something knocking on the door. A waving hand is holding/connecting the missing limb of LRRH - the iPhone is back! The iPhone is put into/connects the hand of LRRH- iPhone and LRRH melt together, assembled for a moment…

We not only live in a machine (the body, the societal body, the society, the city), but we also constantly constitute one or several machines: not only war machines, but also love machines and machines in general (Deleuze and Guattari, 1984). We work together and against each other in machine-like systems of social construction and destruction (Foucault, 1991). So why do we have such a problem adapting to, adopting and incorporating non-human machines in drama education? And why should we? After all, drama is all about the body, the self and the other(s). One of the purposes of drama is to help liberate us from the burdens and borders of artefacts and technology, to help us construct ourselves and other selves, and to help us to extend the boundaries of our imagination. How can predefined objects possibly help in such processes? Maybe, if not only we were machines but if technology was bodies? What is the border of the body when the physical skin does not enclose it? When and how can the machine be embodied and the body be 'e-machined'?

We believe in the necessity of *gestaltung* and performance, and know that great amounts of pupils will benefit from the revolting pedagogy that is invoked by our fine students. In the comfort zone we do not need to take into account other means of expression than what we know and love. Despite

that, we feel gradually less comfortable in our comfort zone, as we sense that a possible extension of our performative space could be reached by inclusion of other technologies into our methods.

The Deleuzian entry in this paragraph is supposed to work as a transfer between drama, body and technological media, between subject, object and abject, between lived experience, writing and our discussion. It is written in the aftermath of a multimedia experiment among educators in drama, music and visual arts at the University of Stockholm. It tries to grasp a moment of 'rhizomatic' living in a Deleuzian sense, as well as expressing/identifying certain problems concerning the body and the often proposed dichotomy between the real and the virtual. It also stresses the conflict between a Deleuzian flow of associations/connections/assemblages and a more traditional scientific style[1].

INNOCENCE, EXCELLENCE AND IMMANENCE

Since we perform parts of our subject in the form of 'triangulation', framed by certain headlines like the one above, we would like to start with another: subject-object-abject, as is used and found in related discussions. As one of us 'invented' the triad as a tool in her own dissertation (von Schantz, 2007) on body and gender in Actor Education, it was exciting to find the same triad in a new book on theatre and technology by Jennifer Parker-Starbuck (2011). The specific subject-object-abject-triad, while not our main concern in this article, describes well how these terms are being used here. What is particularly interesting to us is how Parker-Starbuck applies it, and the way it can be made use of in the arguments in this article. She points out that the terms 'subject-object-abject' should not be confused by the limiting range these terms often imply, nor should the terms of our own triad. *innocence, excellence and immanence*. Hence, to follow Parker-Starbuck: '[Our] use of the terms themselves is as reiterations, ongoing in their own incompleteness, always shifting and in process/…/ [Our] interest in these terms is predicated on how they function in social and aesthetic settings /…/ as fluid terms, hopefully to renegotiate as they intersect with technologies' (ibid. s.43.).

What is the relationship between the terms 'innocence', 'excellence', and 'immanence' in this context? In what way do they put issues of drama/theatre and technology on the agenda? In fact they have here at least two meanings. Due to their fluid character these terms work against closure, whilst simultaneously, in spite of their fluid character, framing our proposed dilemma.

INNOCENT EXCELLENT DRAMA

To begin we have to trace the notion of 'educational drama and theatre'. In her dissertation, Mia-Marie Sternudd (2000) presents a close link between ancient theatre and the birth of Western

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[1] In fact, in order to become more Deleuzian (perhaps against his own will) we should skip the ordinary commas, periods, 'and' etc., replacing them with a more anarchic use of signs to perform the 'Deleuzian mode', i.e. use the idiosyncratic style of Deleuze himself. Though exciting, it isn't always easy or intelligible. We do not intend to be so much Deleuzian, as rhizomatic, meaning associative, unpredictably connecting, turning in different directions, or assembling.

democracy. She refers to the idea that the individual and critical thinking have emerged out of the common experiences offered by the theatrical event. Important here is the double effect of both drama and theatre, which is to say the interaction between: emotional arousal triggered by performance – feelings of 'blood, sweat and tears'; – 'peace, love and understanding' through acting as well as 'specta(c)ting' (Boal, 2002); and the virtual exploration of reality from a logical, rational point of view. The interchange between acting-feeling-seeing-feeling-observing-thinking in drama and theatre settings is supposed to strengthen the ability to empathize, to analyze, and to formulate possible consequences. (a.a. p. 22)

Following several earlier drama theorists, Sternudd claims that it is possible to educate individuals to act as independent people, who, together with others, take responsibility, make decisions, and are able to gain knowledge about themselves and the world through drama. The possibility to create and recreate a democratic society is thus a basic requirement of educational drama and theatre (Sternudd, 2000, p. 186).

Traditional educational drama and theatre have often set the physical body and the human senses at the centre of their discussions. Specific dilemmas, human relations and bodily experiences are processed and discussed. Educational drama and theatre in Sweden is to some extent inspired by 'the Poor Theatre' – an empty space and a group of people who orchestrate and manipulate human affairs, using nothing more than imagination and their own personalities/ bodies. The extent to which artificial, technological equipment has been used as scenographic elements such as light and sound has often been 'objectified', regarded as stimulus, reinforcements or incentives. Up to now, digital technique and communication has been used to announce, record or account for different dramatic and theatrical events, though the issue of entering technique as an equal, co-acting subject remains undeveloped. This is the case unless we speak of performance art/ theatre, which is still not very frequently mentioned or elaborated in Swedish education, though drama, paradoxically, often uses the dynamic and interdisciplinary concepts of performance art, as for example with collage technique.

From this perspective, the notions of educational drama and theatre that were established in Sweden in the early seventies still rules. It could probably be referred to as a cultural heritage that promotes an idealistic and romantic, 'non-materialist' discourse, characterized by an ideological and innocent distinction between the human and non-human (in this case technology). The real human being could be described as body and soul, intelligent by nature, and an authentic, vulnerable, sexual, and emotional creature that is simultaneously innocent and excellent. Her body is soft and sensitive, while technology, though useful, is hard and non-human, invented, constructed, artificially intelligent, and soul-less, and often intimidating for human beings. Paradoxically, technology is intended to strengthen and improve human life, and as such has to be excellently produced and mastered. Technology serves to repeal human shortcomings, and is thus an excellent extension of innocent human life. One could call this an 'innocent' comprehension of technology in which it is at their service, and objectified', produced and mastered by human beings. In this sense, technology is, and should remain separate from and subordinate to humanity.

It is however ironic that within the ideological distinction between humans and technology, whereby humans are considered to be both innocently and excellently superior to technology, humans emerge as creatures, which themselves produce an 'abject', technological beast, a living monster machine, which is out of control, or perhaps even controlled by external powers of communication and technology.

The romanticism of drama and theatre, as described above, should not be confused by the humane in a religious sense. Rather it arises as a part of a political movement from existentialist and phenomenological debates and from Marxism. However, as orthodox Marxism stresses, humans are victims of a cynical market, whilst existential phenomenology sets human meaning-making before material and economic forces, for in order to change the world we have to change the way we think. Educational drama and theatre is based on the conviction that seemingly natural and immutable processes are decided on by human beings, and are consequently possible to change. Thus, as activities that deconstruct preconceptions and taken for granted truths, one can consider drama and theatre as kinds of excellent post-structuralist activities. However, educational drama and theatre in this context often rely innocently on representation and depiction, and are based on a given structure that we criticize, judge and reflect on from a certain point of view, so that us acteurs in spite of our 'revolutionary' intentions, seem to lock ourselves in. This ironic paradox is an interesting dilemma, that makes Deleuze's thinking important to our discussion. In Deleuze's writings, paradoxes are not only seen as natural features of human action, but even more so as human thinking and interaction. 'Paradoxes […] inhere in language, and the whole problem is to know whether language would be able to function without bringing about the insistence of such entities' (Deleuze, 2004 p. 86). Paradox is defined in opposition to good sense and common sense, whilst, perhaps more surprisingly, it is also compared with contradiction. While contradictions represent incompatible views of reality, paradoxes are surprising and unforeseen twists in reality that are recognized almost in disbelief. Deleuze and Guattari (1994) consequently show the connection in philosophy between art and the construction of meaning and immanence: 'Immanence is necessary, but it must be immanent to something transcendent, to ideality.' (ibid.)

If drama is to be liberating, it needs to free itself from the chains of its corporal history. To be artistically interesting, and to offer possible paths of imagination, nothing should be considered impossible or uninteresting. Drama and theatre needs to connect to the notions of art that are 'neither virtual nor actual; they are possibles, the possible as aesthetic category …, the existence of the possible …, whereas events are the reality of the virtual, forms of a thought-Nature that survey every possible universe" (Deleuze and Guattari, 1994 p. 177). The utopian image by which we imagine education where imagination is trained to meet, encounter and create the innocence, excellence and immanence that the universe of art can open up even though it is soon blurred by reality.

EXCELLENT, INNOCENT DEMOCRACY

Innocence, as well as excellence, could refer to some rather utopian facets of certain goals in the Swedish curricula (Skolverket, 2011). Likewise, the emphasis on human and democratic rights,

whether ethical, ethnic and aesthetic values, and as well as diverse perspectives on equality, are what is at stake in the goals of drama and theatre in education. While the utopian goals described in the curricula coincide with the goals of drama/theatre in education, individual syllabuses are characterized by the prescribed tasks and presumed results that are related to the detailed grading system. Students will be assessed on a range from 'not good enough' to 'excellent', or, as formally expressed 'from A to F' in accordance with Bologna's regulations. How does being assessed as 'not good enough' or 'excellent' when exploring human affairs through drama and theatre, concur with democratic ideals of both the national curricula and the self-image of drama in education? We agree with the idea that, through the potential complexity of dramatic and theatrical activities, democracy in education could be within grasp, but we denounce the currently innocent view of the concept of democracy, as well as the use of it when speaking about drama and theatre in education. There will always be powers at play and capital at stake as all societies are constructed around tensions between hegemonic conservation and possibilities for upheaval or reorganisation. In Deleuzian rhizomatic thinking, these possibilities will exist simultaneously and without clear boundaries between the zones of stability and instability, since they are interdependent phenomena, meaning that one cannot exist without the presence of the other, like peace and war (Deleuze and Guattari, 1994). In a modernist view the democratic potential of drama in education lacks contextualization and a critique of the concept of 'democracy' *per se*, as well as the seemingly innocent doxa that drama is democratic by nature.

The birth of democracy in ancient Greece is historically described as deeply embedded in societal transformation. As a citizen you were expected to engage in different democratic forums, as for example the theatre, and to fulfill the notion of a citizen you had to be a free, grown up man. The ancient democracy of Greece excluded women, children, slaves and immigrants, implying that it is contextually conditioned then as now when children, people with psychiatric diseases and foreigners without permanent residence are denied the right to vote. In her groundbreaking book *Feminism and Theatre* Sue Ellen Case (1988) discusses the intertwining of theatrical and societal issues, claiming that Western ancient theatre was when women became subordinated to men. Men not only wrote the dramatic texts, but they also selected the winners, staged the dramas, performed all the scenic characters and formed the audience. Men had precedence on every level, even when it came to acting as a 'real woman'. From our point of view this looks like a skewed democracy, as might ours from a different perspective. Deleuze and Guattari recognize this when they state rather dryly that 'there is no universal democratic State' (Deleuze and Guattari, 1994 p. 102), and therefore propose a philosophical society of 'brothers' (ibid). The democratic ideal thereby remains an ideal, but under a different name, so it remains something to strive for but impossible to reach (Patton, 2005). A truly democratic society would honour all voices, let any individual have any chances, respect minorities and at the same time make sure the majorities are in charge. Personal opinion and desire, discursive agendas and societal needs would all be transparent and at the same time protective, simultaneously liberating and sheltering everyone at all levels. So how does drama take care of such tensions?

Drama in education means to process issues through evocative and emotionally engaging design, and to explicitly strengthen and develop democratic values through interaction between individual

reflection and group reflection. This purpose often stems from an intention to stimulate critical thinking. However, despite this explicit democratic intent, drama activities are always situated in a context, and guided by more or less conscious laws and regulations. A dramatic situation, whether a particular plot, a specific space or selected characters, are site-specific in nature. Issues of portrayal, reflection and discussion are staged within the framework of a pedagogical idea. A thought is never free, and the question therefore concerns the extent to which thinking through drama can be regarded as emancipated. In what sense? Could it be that drama is actually more like a (clueless) method to control and manipulate? After all, though drama and theatre in education, as well as in 'real life', are to some extent virtual, they are still ruled by recognized structures and contextual and physical laws. Bodies and voices are limited, gender-fixed, and space-located. Emotions are at play and the pedagogic setting is carefully prepared and managed by the teacher.

IMMANENCE

It seems, at least in most educational contexts, as if the principle of a prior object to the subject, like material reality, humans, consciousness and the world, as well as to a subject who is experiencing, interpreting, learning about, and defining what's out there, is part of a Western 'collective unconscious'. We presume a subject, who gets to know a predefined world outside itself (transcendence). To follow Kant and Husserl, we have on the one hand, 'life', and on the other, a 'thinking' that assesses and describes 'life'.

Deleuze' answer to these categories is 'immanence', meaning his distinction between transcendence and the transcendental. Transcendence is that which attempts to go beyond or above a highest grounding principle such as thought or consciousness.

The transcendental is not the transcendental. Were it not for consciousness, the transcendental field would be defined as a pure plane of immanence, because it eludes all transcendence of the subject and of the object. (Deleuze, 2001:26)

What is proposed instead is a transcendental field, a 'plane of immanence', wherein consciousness no longer establishes the essential thinking subject.

What is a transcendental field? It can be distinguished from experience in that it doesn't refer to any object or belong to a subject (empirical representation). It appears therefore as a pure stream of a-subjective consciousness, a pre-reflexive impersonal consciousness, a qualitative duration of consciousness without a self. (Deleuze, 2001:25)

Like Little Red Riding Hood, who, as was proposed at the opening of this text, was consciously in place, out of place, in time and meta-consciously aware of her role, seamlessly drifting in and out of different roles and worlds, between reflection and pre-reflection; and combining a desire for innocence, excellence, and reaching for immanence. Still very much in the physical body, but grasping for the virtual, embodying the virtual whilst at the same time being embodied by it. The virtual provides a key to immanence by offering otherness and liberation from the actual. As such

the virtual is not defined in opposition to the real, but as the flip side of putting the actual into perspective.

It is the virtual that is distinct from the actual, but a virtual that is no longer chaotic, that has become consistent or real on the plane of immanence that wrests it from the chaos – it is a virtual that is real without being actual, ideal without being abstract. (Deleuze and Guattari, 1994: 156)

Of course the virtual does not refer solely to technology here, but rather to an almost Deweyan notion of imagination (Dewey, 1934/2005), or to the notion of possibility proposed by Næss (1999). The combination of virtuality's realness through its connection to visual possibilities, and its bridging of the imaginative past, present and future, makes the virtual, even in technological shape, relevant for drama in education. This is particularly so when we consider the Deleuzian notion of the man as machine controlled by affects, just as a machine is controlled by its controller, but also through the idea of the man-machine assemblage whereby the machine is a part of human being and vice versa. It is, in other words, only one way to avoid working with the virtual and technology in drama, which is to pretend that parts of the body are non-existent or irrelevant. To play with virtual representational bodies goes to the core of what drama in education is about.

Performative space and bodily gaze

The real challenge to Drama education is to deal with the reality that students are entering a new world and, as romantic or practical as our attachments to classical and traditional forms of Drama might be, we must realise that our students will be the ones defining the forms of the future. And in so doing there is bound to be a weaving together of the real and the virtual. While many Drama teachers might be asking how computer technology might be changing Drama, we really should be starting to ask how Drama could help to make computers more human. (www.drama-education.com)

Deleuze' thinking can be seen to build upon the work of Merleau-Ponty's treatment of the (virtual) body (Olkowski, 2002). Since drama is often assumed to be working with the body as a tool for understanding, it is worth looking at what a body is, or could be. Merleau-Ponty treated the body as the centre of the experienced lived world. Simplified, the body could be described as the complete being with intersubjective relations to the other. The body's borders are not defined by the physical body since tools can be embodied to the extent that we would be crippled or surprised if the tool was not there or worked in unpredictable ways – just like if the leg suddenly stopped supporting us, or the vision became blurred. The blind man's white stick is the most common example of such an extension of the body (Ihde & Selinger, 2004). But in our context, the dancer's shoes or the trumpeter's trumpet are closer examples. The virtual body could be seen as both an extension to the real body, and as an alternative to the actual.

In their first book Deleuze and Guattari (1984) coined the expression 'body without organs' (BwO) with reference to the fact that bodies have purpose and act not only mechanically, but also as limits to that capacity. BwO should not be understood as something else than a physical body, but rather as an almost pragmatic view of the body as capacitor and machine for solving actual problems (Buchanan, 1997). This is best understood in relation to the rhizomatic ontology that makes the

interdependency, paradoxes, border(lessness) modularity and flexibility combine with limits, most obviously even for the body. Consequently, when drama uses the physical body, virtual bodies and bodies without organs will be present and evoked whether intended or not. The question is whether drama can cater for the virtual body by including technology and by working with virtual bodies through virtual lives, thereby creating opportunities for extending the body when a virtual world meets the lived world.

Virtual life can be truly phantasmagoric, uncontrollable. Compared to seductive, multifaceted, anarchic cyber space, traditional drama in school seems to be more of a (clueless?) method to control and manipulate when threatened by the unknown. However, as we proposed at the beginning of this essay, groups of children and youngsters seem to be rhizomatic 'by nature', subversively searching for adventures on their own, finding leaks, exploring 'forbidden' areas, conquering cyber space, creating their own drama, while at the same time playing the game of the machine. But while virtual life can be truly phantasmagoric and uncontrollable, it still has borders, and is definitely a machine in itself, with its own agendas and predefined patterns of action.

There is a need for schools to offer performance spaces for pupils (and teachers) wherein alternative realities can be explored, created, conquered and contested. Only through performance in actual and virtual worlds, and through actual and virtual bodies can education that targets democratic ideals develop. To ignore the virtual life is to leave Little Red Riding Hood looking in vain for her grandma, limiting her to her well known trails where grandma once was. She might find the way herself though thereby increasing school's irrelevance for her. Drama surely has the potential to help create rewarding trails between the actual and the virtual, the body with and without organs, the innocent and the excellent. What activity other than drama in education might be up to the task of creating planes of immanence as performance spaces for pupils to look through the limits of rationality? The aesthetic without immanence is nothing but anesthetic: lifeless and without power.

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EXPLORING THE LANDSCAPE OF RESEARCH-BASED THEATRE: RESEARCHER, PLAYWRIGHT, EDUCATOR

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INTRODUCTION

Like some other contemporary proponents in the field of *research-based theatre* (Belliveau and Lea, 2016) I tend to use the following terms interchangeably whilst acknowledging that they have their own particular meanings and nuances: *performed research* (Sajnani, Sallis and Salvatore, 2018, in-press), *ethnodrama* (Saldaña, 2005) and *ethnographic performance* (Wellin, 1996). A common thread which links all of these terms is that they refer to a process whereby research data and research report findings are transformed into a dramatic text and presented as performance.

With its postmodern performance aesthetic research-based theatre can require audiences to both interpret and interact with the work; the performance is a dialogic event, that is the audience becomes a part of the performance, in one way or another. In a Boalian (1979) sense, audience members can be invited to not merely observe a performance but critique it as well and may even be drawn into the action of stage.

With experience as a drama educator, ethnographer and as a theatre industry creative, I am keen to explore the potential of performed research as a form with which to share my qualitative/ethnographic research findings. To date most of my research-based performance pieces have featured teachers (pre-service and in-service) and students as research participants and subsequently they have become the characters in my plays and the primary or initial audience for the subsequent performance.

KEYWORDS

Research, drama, theatre, performance, performance-based theatre.

WHY WRITE RESEARCH-BASED THEATRE?

I concur with Janesick who, almost twenty years ago, asserted that in the field of education, research is often been reported 'without passion or imagination' and so it is 'often forgotten as soon as it is reported' (Janesick, 2000, p. 397). Sadly, I have found that for the most part her words still resonate today. However, there is no doubt that some researchers in the field of education are looking towards more dynamic and interactive ways to present their findings. Encouragingly, the flexibility offered by contemporary ethnographic research has encouraged some researchers to be innovative in the planning and execution of their methodology (Silverman, 2010). As leading ethnodramatist Johnny Saldaña asserts, 'ethnodrama' is one of a number of written forms ethnographers can choose to 'represent a study of people and their culture' (2005, p. 2) especially when the aim is to share findings with their research participants in a form which may be more accessible for them.

Writer of research-based theatre, Kate Donelan asserts that the goals of contemporary ethnography, with its emphasis on embodied engagement in human events in order to gain insights into the lived experiences of participants including oneself, complement the central aims of drama education (2002,

p. 43). However, I contend that this can apply to theatre as well. For my part I have found that research-based theatre is a dynamic method of sharing my findings with the original research participants; research project participants, especially students in schools, may not be accustomed to, or wish to, engage with journal articles or other forms of conventional academic reportage. Research-based theatre can be a highly effective way to convey research findings to teachers and students in schools. As Goldstein asserts, performed research plays have the potential to 'engage teachers in critical analysis and practice' (2001, p. 296).

In mounting his case for the recognition of practice-led research, Haseman reiterates Denzin and Lincoln's (2003) call for the performance turn in qualitative research (Haseman, 2006). When I am writing a research-based theatre piece, like some other writers in this field of endeavour, I refer to myself as being an 'ethnodramatist'. According to Anderson, a distinguishing feature of the work of ethnodramatists (that is a researcher-playwright) is that they look to performance 'rather than paper presentations and publishing as the stage for their research' (2007, p. 82). Informed by the work of Turner & Turner (1997) and Schechner (2006) as an ethnodramatist I appreciate that life can be viewed as a performance and so a dramatic text can be a highly appropriate form in which to retell the real-life stories.

As an ethnodramatist I see it as my task to create a text that gives voice to the participants in the research setting using the conventions of dramatic form to retell their lived experiences. However, like the research on which it is based, a piece of research-based theatre should be viewed cautiously if it is evident that the main purpose of the play is to merely advocate or to promulgate a particular world view. As some critics of research-based theatre rightly caution, this form of reportage should not be just a chance to advocate on behalf of the participants a researcher has come to know – presenting them as the heroes, victims or the oppressed in their culture and downplaying their negative or more contradictory characteristics. This can be potentially all the more problematic in ethnodramas which may be borne of a 'desire to make things better for teachers and learners' (Eisenhart, 2001, p. 19). As ethnodramatist Jim Mienczakowski, rightly says, if emancipation is an aim of an ethnographic performance then the ethnodramatist needs to question whether or not their research participants *need* emancipating and, if so, from *what* (1997).

AUDIENCE – THE ESSENTIAL INGREDIENT

A key consideration when writing a research-based theatre piece is who does the ethnodramatist envisage will view it. With a conventional play or performance text, the playwright or deviser assumes that the play will be viewed by a general public audience, whereas the writer of an ethnodrama often has a *particular* intended audience in mind and fashions the play with that audience in mind. For example, as I have found with my own ethnodramas, it is possible for a single audience to be comprised of both members of the original participant group as well as other stakeholders and members of their community. When I present my research-based theatre piece to an audience I like to find an opportunity to explain the origins of the play to them and to give them a chance to ask questions and to comment on what they have seen. Scrutineers of this genre argue that when selecting material for inclusion in an ethnographic performance, ethnodramatists have not always paid due consideration to *whose truth* it is that they are representing (Ackroyd and O'Toole, 2010) and that they should make the context of their work more 'explicit for an audience' (Nicholson, 1999, p. 101). With many ethnodramatic plays it is not uncommon for the performance to be preceded by an exegesis, explaining the research process or a post-performance question and answer session with the audience. Some plays, for example *Alice Hoy is Not a Building*, embed depictions of the research

process into the play itself (Bird, Donelan, Sinclair, Wales, 2010). I have found that it is also important for the writer and the production team staging an ethnodramatic play to make it clear to the audience what their role is to be; is the audience being asked to sit back and watch the play in a detached manner, or is the performance to be more of an interactive or immersive experience, and if so, how will the audience be involved?

ARTISTIC CHOICES

One of the challenges ethnodramatists face when writing a research-based theatre piece is to aim for a performance which is not only informative but also an artistically satisfying and illuminating experience for all members of the audience. This is even more so for contemporary ethnodramatists because increasingly there is a call for higher aesthetic values in research-based theatre. As Anderson asserts, if ethnodramas are to succeed as a research method that can powerfully connect with audiences, ethnodramatists 'must take account of the aesthetic demands of theatre' (2007, p. 89). Allied to this assertion is Sinclair's contention that the 'aesthetic outcomes [of an ethnodramatic play] cannot be achieved without artistry' (Sinclair, 2006, p. 42).

Many of those who have documented research-based theatre, have called for more artistry in their writing and performance. A criticism sometimes levelled at ethnodramatists, especially those without a performing arts background, is that their plays may lack an aesthetic vision or artistic dexterity when it comes to the use of dialogue, direction or stagecraft. For instance, some ethnodramatic scripts tend to be little more than the staging (or reading aloud) of an interview transcript and such they can be artistically and aesthetically bereft. Conversely, other plays may be so abstract in style and/or intent that audience members find it hard to connect with the content; the meaning of the play gets lost in the aesthetic qualities of its staging.

TRIPARTITE PROCESSES

When creating my research-based theatre I work in a tripartite manner as a dramatist, researcher and [drama/theatre] educator. The roles can often become blurred and worse, at times one role can unnecessarily dominate and supress the others. Playwright and drama educator Penny Bundy also highlight this dilemma when she discusses some of the challenges and tensions that may exist for a researcher who is working in the dual roles of an educational ethnographer and a playwright (Bundy, 2005). Significantly, she questions whether the quality of the aesthetic output suffers when a researcher *simultaneously* works as a playwright. Similar to Bundy's views, at times, as an artist, ethnodramatists may feel that the materials they are working with (that is, research data and findings) may limit their artistic freedom. This can be especially so, if like me, an ethnodramatist tends to fashion dialogue *quoted directly* from research data. In my ethnodramatic work I tend to engage in a process of highly selective dramaturgy – drawing exclusively from the raw material that I have from my research notes, interview transcripts and so on. I concur with Saldaña (1998; 2005; 2008) who stresses that as an ethnodramatist he tends to quote verbatim from the data because this is an effective method for ensuring that, from a **researcher's** standpoint the perspectives of the participants are respected. Similarly, Mienczakowski and Morgan claim that the ethnodramatic process should 'incorporate as much verbatim narrative as possible' (Mienczakowski & Morgan, 2001, p. 220). However, like them I too assert that a slavish adherence to verbatim textual material can result in a potentially boring and stultifying dramatic text.

When writing and staging my research-based theatre, as an **artist** I am aware of how I not only need to concentrate on the content of the play but on my aesthetic choices as well. I am often reminded of the advice other ethnodramatists provide about how to write a play that (hopefully) will succeed as a piece of theatre as well as a piece of research reportage. For example, Saldaña asserts that when watching a piece of 'ethnotheatre', the audience may become 'bored' unless the production offers 'visual variety' and that it is best to avoid 'lengthy monologues' instead interweaving 'the participants' voices frequently for variety' (1998, p. 186). He adds that if an ethnographic performance 'consists of merely people talking, then why bother using the visual medium ...' (Saldaña, 2005, p. 27).

As an ethnodramatist with continued experience as an **educator** I have found that my education background as a drama/theatre teacher has informed my work. Significantly, at times the **teacher** in me has questioned some of the decisions I have made as an **artist** when writing a research-based theatre piece based on my work as a **researcher**. To quote from Saldaña, sometimes I have included some 'juicy stuff' (1998) in an early draft of a play about the teacher and/or student research participants. In other words, I have included an incident that will spark the audience's interest because it reveals something sensational or astounding about the characters or their situation. Dwight Conquergood, himself an ethnodramatist, cautions that the aim of an ethnodrama should not be to 'sensationalise'. He sees this as 'tantamount to appropriation' (2003, p. 403-405). The dilemma of many ethnodramatists, myself included, is perhaps best expressed by Saldaña:

> On the one hand, I am legally and morally bound as a researcher to protect the participants and respect their wishes for how they are represented. On the other hand, I am concerned as a playwright and director with telling and staging an engaging story for an audience (1998, p. 192).

As both an educator and a researcher I have been troubled by my decision to include 'juicy' content but as an artist I know that I have included it because I am sure it will not only appeal to the audience but raise some interesting talking points regarding the themes of the play. In such instances the basis of my concern stems from the 'juicy stuff' not necessarily being indicative of what usually took place in the research setting or how the characters typically behaved. For this reason, its inclusion may not only be unethical but also may have lasting negative repercussions for the teacher/student participants long after the play has been and gone.

IT'S A MATTER OF STYLE

Whilst I concur with Saldaña (2005) that there is more to a performance than just speaking words. In my own work I have found that audience members can find watching or listening to a *monologue* to be a very satisfying experience especially when the character shares a moment of their life in some depth. Monologues after all, have been a staple of theatre since (at least when) the first actor walked on to the stage in ancient Greece.; the English language word 'monologue' comes from the ancient Greek term to 'speak alone'.

According to Richardson, when conducting a writing project such as a piece of performed research, the writer should see beyond their own 'naturalisms of style and attitude' and that '*different forms* of writing are appropriate for *different audiences* and *different occasions*' (2003, p. 384-385). Whilst I concur with the intent behind Richardson's assertion here, I have found that monologues that are *more* naturalistic in style tend to be effective with a *range* of audience types. This may be because due to the naturalistic style, the context of material is more self-evident than it might be in a more abstract piece of work. Subsequently, less explanation is required around the performance of the text – naturalistic dialogue tends to stand on its own two feet. Given that, in recent times, I have often

performed my ethnodramatic monologues in university classes and at conferences I have found that it is often easier for audiences to follow a naturalistic text. This has been particularly so when the audience members have very little experience of theatre as a medium.

ANALYSIS AND CREATION OF PERFORMANCE TEXT

Like many writers of performed research plays, I contend that my creative and artistic processes parallel the analysis that *any* qualitative researcher applies to their work. Similarly, for Conrad the process of devising a performed research play is one of 'analysis and interpretation' (2002, p. 76-77). This view is epitomised by Donmoyer and Yennie-Donmoyer: 'the script construction process is not appreciably different from the data collection and analysis process employed in traditional forms of qualitative research' (2008, p. 214). As Saldaña asserts, 'dialogue is the playwright's way of showing character interaction and interplay, terms found regularly in qualitative research literature' (2005, p. 25). However, whereas the *reader* of a research report or journal article is in a position to judge the veracity of a research process and the findings, with performed-research it is often the theatre *audience* who makes this assessment. According to Saldaña, research-based theatre should not be judged on the printed script alone, but on the ways in which the audience responds to the text when it is *performed*. For him the 'true test' and the 'ultimate merit and success of a play are constructed by the audience in attendance – the final arbiters of a play and its production' (2008, p. 204-205).

When writing my ethnodramatic texts I find an effective way of portraying my research participants to the audience is to adopt aspects of the participant's spoken delivery of language and to incorporate catchphrases they use. As a bridge between the initial data analysis and the writing of the ethnodramatic script I often apply 'in-vivo coding' (Alston & Bowles, 1998). In-vivo codes:

> come directly from the language of the people being studied and are usually vivid in imagery as well as being analytically useful. They are terms of descriptions which explain the basic problems or processes faced by the people being researched and can lead to associated theoretical codes (Alston & Bowles, 1998, p. 200).

Paraphrasing Saldaña, this assists me to determine particular passages from transcripts and field notes which could form part of the script (2005, p. 15-16). I find that the in-vivo codes imply behaviours of the participants and/or added insights into the contexts in which the research was conducted. From the standpoint of the ethnographer it enables me to further document and analyse the culturally-constructed vernacular of my participants. I also find that in-vivo codes reveal potential key words and turns of phrase which I can focus on when developing the dialogue for my play.

To illustrate this, I share below a monologue I wrote a few years back based on a character I called 'Greg', a generalist primary teacher who goes to a professional development session run by drama teachers. The research from which this monologue is derived, was a project I conducted for Drama Victoria, the Victorian drama educators' association. Its main focus was to investigate the responses of primary school teachers to its professional learning program. In the associated research project, the language as used by the person on whom the character of 'Greg' is based, I found to be provocative, ironic and self-deprecating in its tone. In writing Greg's monologue, I did my best to capture these aspects of his language. This is mostly conveyed via the stage directions which are intended to guide an actor as to the tone of voice to use when delivering the lines.

GREG (PSEUDONYM) - A GENERALIST PRIMARY TEACHER IN A GOVERNMENT SCHOOL, VICTORIA, AUSTRALIA

(Middle-aged. Strong Australian accent. Off the cuff) Well, I'm Greg. I'm a Grade 6 teacher and I'm hardly what you'd call a PD junkie. Whenever the boss says, "we have the opportunity to go to this or that in-service", I duck for cover. I'm sure this is not what you want to hear, but until now I've had no time for the Arts and I certainly didn't think it was something I could teach; I thought that's the kind of thing you get a specialist in for. I'll send the kids off to them for an hour while I do my marking.

(Casual tone) I'm at a government school. I think we're a pretty average school. We do some things well and others not so well. We're not really into the performing arts at my school. Sometimes we have a concert, which from my point of view seems to be just like "Australia's Got Talent". You know, trotting the kids out to sing and dance in front of their parents but there's no sense of art about it. In the seven years I've been here there has never once been talk of doing a school play for instance.

(Eyes lighting up) Now as for the Drama Victoria workshop well I have to tell you it's been a real eye-opener. I should have done this, years ago. I've never gone in much for PD in the past. I've sat in on those in-school PD sessions, which are pretty dry, and I can't wait to go home. My Principal was looking for staff to go on an in-service to do with Arts education because we are ramping it up here and I thought well, what's the worst that could happen? The school organised it and only closer to the time did I realise it was by the <u>drama</u> teachers group. I could have pulled out, but I thought, no, sometimes you have to go outside your comfort zone, so I went along.

(He becomes more animated) Funny, but I didn't even know the drama association existed before I went to the workshop. I suppose if I'd thought about it I would have realised that there must be one. Subjects like English and Maths and even History have one and we get information from them all the time especially on Literacy and Numeracy because they're government imperatives and so it is hard not to notice they exist. Before the workshop I was pretty sceptical about the value of the Arts but now I'm having a bit of a rethink.

(More serious in tone) The thing I most took away from the drama workshop was that I can use drama to teach other learning areas. I think a lot of teachers would be surprised you could do that. Before I went, I thought drama was like a fill-in activity. I didn't realise that you could use it to get kids more interested in Science, and History and subjects like that.

(Reflective and somewhat ill-at-ease) I can you tell you something now though … I was very nervous when I arrived. A lot of people seemed to know each other, and they seemed extraverted. I felt like the odd one out. Then it dawned on me – Christ, they're going to get me to get off my chair and act something out. I guess I had two choices, get up on my feet or sit there, and I could tell straight away no one else was just going to sit there.

(As if reliving the experience) The good thing was that we did things in groups and we sort of planned things before we acted them out. I didn't know you did that in drama. I thought we would be put more on the spot. But the group I worked with made me feel at ease because someone said, "let's think what we can do" and we sort of brainstormed out loud and that broke the ice. And when we came to share with the others I felt like I wasn't on my own doing it. We were working as team, which was a novel experience for me.

(Takes on a more reflective tone) The presenters were very knowledgeable and what I most respected was that they were teachers too. They actually made me believe these things could work with our kids. You could take what they were teaching and adapt it. They weren't saying "this is the only way to do

it" or that you had to be as experienced as them to do it. I liked how they said things like, "when I did this with my kids it worked like this …'' or "you could adapt it for your class by doing it like this …" '. It made it more convincing for me.

(Dogmatic) But, it's a shame more primary teachers don't know about how you can use drama or about Drama Victoria. If teachers like me, who have been teaching for ages, don't know much about drama then there must be scores of others who are the same. I think they need to stop preaching to the converted and get their message out more widely. They have got to target teachers like me who would never think of teaching the Arts with their class and show them that it is possible. They need to give people like me the confidence to do it. They need to show why the Arts are important. That was what this workshop did for me. It showed drama's applications across the curriculum.

(A light-bulb moment for him) And another weird thing was that a couple of things that I've been doing for years I now discover are CALLED 'Drama'. Like what Drama Victoria called 'hot-seating'; I've been doing that in English for years, but I call it 'interviews' and I think of it as an English activity not drama. That was a bit of surprise and I told them so.

(Looking directly at the audience) Now, I wouldn't go so far as to say I've become a convert, it's too early for that. But I can see the value of using drama sometimes in my classroom. I've taken a few of things from [the workshop] and tried them out and the kids are responding. It's a bit of a weird experience but now at the end of the class some of the kids come up to me and say "hey Mr. Rogers, that was cool" or 'Can we do that stuff more often?". All this time I have been reluctant to do anything like this because I thought I couldn't teach that way, the kids would hate it and I couldn't see the educational relevance of teaching the arts. But now I am beginning to appreciate the potential of drama to feed into other learning areas. But I don't think most primary teachers get that (Sallis, 2014, 2017)

Since writing this script I have had a chance to perform it at national and international conferences attended by educators and teacher candidates from a range of disciplines. Here is a selection of typical responses to my performance of this research-based monologue.

> *I found the ethnodrama you performed* [to be] *highly engaging and like* (sic) *I have certainly been on staff with a* [teacher] *like Greg.*

> *As a drama teacher, I could see what you were trying to achieve by showing your findings as a script.*

> *… even though Greg was an enjoyable character to watch, and I suspect an enjoyable one for you to perform, how you quoted directly from what the 'real Greg' said was informative and most illuminating.*

> *What drama teacher doesn't like a play to watch? … It was a little didactic at times, but what was said undeniably was relatable* [sic].

> *Greg's monologue was really interesting, but I was left wanting more … is the Drama Vic* [sic] *research report available for me to read?*

> *Being a* [primary] *teacher candidate, your play reminded me of the importance of the arts in the lives of children. I will certainly take this into my teaching in the future.*

CONCLUSION

Given the tripartite manner in which I approach my work as a writer of research-based theatre, it is significant that responses such as those above, comment on its origins in research, its educational significance and the artistry of the performance text. As I have found, when working in a tripartite manner when creating a piece of research-based theatre, it is important to ensure that all three aspects of my work, that is, researcher, playwright and educator, complement each other and help to ensure that the final outcome is indicative of solid research, is artistically/aesthetically satisfying, and is educationally sound.

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CAN CRITICAL THINKING BE TAUGHT? A DEWEYAN PERSPECTIVE ON THE NOTION OF CRITICAL THINKING WHEN APPLIED TO ICELANDIC EDUCATION

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ABSTRACT

In this article I will explore and discuss the meaning of the concept critical thinking when applied to Icelandic education from Deweyan perspective. I will explore the concept of critical thinking by referring to the Icelandic philosopher Páll Skúlason, Emeritus Professor, Robert Ennis at University of Illinois and Jennifer Moon, Associate Professor at Bournemouth University, who have all written about critical thinking from the viewpoint of education. My special question, to be discussed against the background of the central position the concept of critical thinking has acquired in the Icelandic national curriculum framework from 2011, is whether critical thinking is something that can be taught. Thus, the target group for my reflections are primary school students in Iceland, and my question is limited to the space a national curriculum framework provides for teaching critical thinking in a school context. I will discuss this issue mainly on the basis of John Dewey's thought, bringing into the discussion some of the central concepts in Dewey's pragmatic philosophy like inquiry-based learning, experience, and thinking. I base my analysis of Dewey's philosophy mainly on "Experience and Education" (1938), "How we Think" (1933) and "Art as Experience" (1938).

KEYWORDS

Thinking, critical thinking, education, experience, students.

INTRODUCTION

The general section of a new national curriculum guide in Iceland was introduced in the year 2011. The fundamental pillars of education and the points of emphasis of the Compulsory School Act (The Ministry of Education, 2011) are to be the guidelines for general education, as well as the working methods of the compulsory school. The fundamental pillars are: literacy in the widest sense, education towards sustainability, health and welfare, democracy and human rights, equality and creativity. The fundamental pillars are to appear in the content of subjects and subject areas of the National Curriculum Guide (The Ministry of Education, 2011), in the students' competence, study assessment, the school curriculum guide and the internal evaluation of schools. All the fundamental pillars are based on critical thinking, reflection, scientific attitude and democratic values. According to the curriculum the students' reasoning and critical thinking should be encouraged in all education, as well as their creative thinking and problem solving. Precise definitions of critical thinking are, however, lacking in the National Curriculum.

This article explores the concept of critical thinking from the viewpoint of education by asking: Can critical thinking be taught? To shed some light on critical thinking and how it is connected to education

and experience I draw upon John Dewey's (1938) philosophy of the interconnectedness between experience and education, concluding that all education is a process of living and not a preparation for future living. Dewey believes that the school must represent actual life, as real and vital to the student as that which he carries on in the home, in the neighbourhood, or on the playground. For the concept of critical thinking, I use Páll Skúlason's (1990) definitions of critical thinking. According to Skúlason, critical thinking is:

> … the kind of thinking which does not assent to any view or statement without having first examined what it involves and found sufficient ground for it. In other words, critical thinking is a process of searching for new and better reasons for one's ideas and views, and consequently of continually revising them. (Skúlason, 1990, p. 15)

DEWEYAN PERSPECTIVE

In "The Child and the Curriculum", Dewey (1902/1990a) emphasises that students learn by doing and reflecting, talking and interacting with other students and teachers. The connections between education and personal experience are the most important in education. In "Democracy and Education", Dewey (1944), argues that "We do not learn from experience as much as we learn from reflecting on experience"; that is, experience alone does not lead to learning. Students learn from thinking about the experience, what it means, how it felt, and where it may lead to and what to do about that experience (Dewey, 1944). All communication is based on experience and creates experience and therefore needs to be connected to reflection in order to become meaningful to those taking part in it. Knowledge will occur in circumstances where the student can connect it to a meaningful experience (Dewey, 1902/1990a). When education is based upon experience and educative experience is seen to be a social process, the situation changes radically. The teacher loses the position of external boss or dictator, but takes on that of a leader of group activities (Dewey, 1938 p. 59). But not everything experienced is consolidated into a recollected experience. Dewey stresses that there is one permanent frame of reference: namely, the organic connection between education and personal experience; or, that the new philosophy of education is committed to some kind of empirical and experimental philosophy. But experience and experiment are not self-explanatory ideas. The belief that all genuine education comes about through experience does not mean that all experience is genuinely or equally educative. Traditional education can offer a plethora of examples of experience, but often the wrong experience according to Dewey. Hence experience and education cannot be directly equalled to each other. For some experiences are miseducative. Any experience is miseducative if it has the effect of arresting or distorting the growth of further experience (Dewey, 1938 p. 25-26). Dewey stresses that no experience is educative that does not tend both to knowledge of more fact and the stimulation of more ideas, as well as to their better and more orderly arrangement (Dewey 1938 p. 82). Learning will happen by thinking about the experience, what the experience means and whether the experience leads to a new experience. Meaning and experience that carries with it its own individualizing quality and self-sufficiency can be called experience. (Dewey, 1934/2005, p. 36-40).

THE CURRICULUM IN ICELAND

The national curriculum in Iceland sets the foundation for general education appropriate for the 21st century, wherein general education is defined with regard to social and individual needs through creativity and experience. This is formulated in the curriculum text in the following way:

> At any given time, general education advances the capacity of the individual for meeting the challenges of everyday life. General education therefore contributes towards the individuals' understanding of their characteristics and abilities and consequently their capacity to fulfill their role in a complex society. It is at the same time both individually and socially oriented (The Ministry of Education, 2011, p. 13).

In the general section of the Icelandic curriculum, emphasis is placed on creativity, stating that it should constitute one of the central pillars of education. Part of creativity is the skill to reflect critically but it also involves the shaping of subject matters and their mediation, creating something new or in a different way from what the individual knows, or has done before.

THE ROLE OF TEACHERS

I will now explore the teacher's role in implementing the new curriculum and the definitions of what critical thinking is. Dewey (1900/1990b) believes that every student has unused potential and the role of the teacher is to create certain conditions in order for the student's abilities to develop and grow for the good of the student and for the community as a whole. This is in line with education specialist Elliot Eisner (2002). He believes that students' minds are not unploughed acres. On the contrary, he claims that students are susceptive to the seeds sown by their teachers. It is necessary to take into account the students' previous knowledge because new knowledge is adopted and interpreted according to previous knowledge (Dewey, 2000). The French philosopher Paul Ricoeur (1976, p. 71) stresses that to understand the meaning of what is said or written, students have to be able to interpret what is said and written. School projects and tasks need to be in coherence with real-life situations outside school. In my analysis of the importance of critical thinking I sum up the following: For the students to respond to this challenge they need to be interested and see the purpose of learning. The students must be active participants in the process of understanding, knowing, and achieving through creativity and critical thinking.

The Icelandic national curriculum framework created in 2011 stresses that the primary role of teachers is educational and pedagogical work with students. They have to stimulate and maintain the students' interest in their study, guide them in various ways, encourage a good working atmosphere among the students and give them a chance to work in peace (The Ministry of Education, 2011, p. 42). The curriculum also emphasizes that teaching methods should take into account the development, personality, talent, abilities and interests of each individual student and that critical thinking and problem solving should be encouraged. This is in line with Deweyan thinking. He encourages the teachers to use the material according to the students' experience and previous knowledge (Dewey, 2000). Dewey also believes that the teacher is not in the school to impose certain ideas or to inculcate certain habits in the student, but rather as a member of the community who decides which influences

affect the student and assists the student in properly responding to these influences (Dewey, 1897).

THE GENERAL NATURE OF CRITICAL THINKING

Robert H. Ennis, (2011) amongst others, has outlined the nature of critical thinking. He believes that the critical thinking disposition is that critical thinkers take care that their beliefs are true and that their decisions can be justified. They seek alternative hypotheses, explanations, conclusions, plans, sources, etc., and are open to them. They seriously consider other points of view than their own, they try to be well informed and endorse a position, but only to the extent that it is justified by the information available. They try to understand and present a position honestly and clearly, theirs as well as that of others, and they listen to others' views and reasons and seek and offer arguments (Ennis, 2011). Ideal critical thinking avoids intimidating or confusing others with its critical thinking prowess, taking into account other people's feelings and showing a level of understanding and care about every person. By following the guidelines that Ennis provides on critical thinking, this process could be taught. Hence the school system has to teach the students to think about studying and learning in a different way. In primary education in Iceland, students learn to criticize books, music and movies and they learn that the meaning of the world can be negative. According to the present curriculum, students have to learn to think in a critical way about what they are reading, in books or online and learn to question the material they are given. The school and the teachers have to allow the students the freedom of exploring the material they are working with. They have to be able to use all the new technology the students have control over. The students also have to be taught to recognize that whatever they do and whatever they read, they are always, to some extent, controlled by pre-understanding and prejudice. They have to take into account that to know something and to learn what something is, is to know its context in relation to other things (Ricoeur, 1981).

Jennifer Moon (2008) stresses that critical reflection, might include critical thinking, but when students are engaging in critical thinking, they also reflect in order to achieve the kind of thinking that engages prior experience. As the term "critical thinking" implies, thinking clearly has something to do with critical thinking, but, again, it does not involve the entire process. Like reflection, critical thinking implies more detail than the generic term of thinking (Moon, 2008, p. 132-133). But do all teachers have the same perspective of critical thinking? Different teachers must have different frames of reference for critical thinking based on the various activities in which the thinking was employed. Like reflection, it implies more detail than the generic term of "thinking" Dewey makes the following point:

> No one can tell another person how to think, but the person who understands what the better ways of thinking, or different ways of thinking are, can, if they wish, change his or her own personal ways until they become more effective. While we cannot learn or be taught to think, we do have to learn to think well, especially to acquire the general habit of reflection (Dewey, 1933 p. 1).

Dewey continues; engaging in active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends, constitutes reflective thought (Dewey, 1933 p. 6).

THE IMPORTANCE OF CRITICAL THINKING IN THE CONTEXT OF LEARNING

In the beginning the I asked the question: "Can critical thinking be taught?" From the perspective of science and education this is an extremely important question. According to the text in the Icelandic national curriculum, critical thinking in the context of learning is intertwined with creative teaching methods that constantly offer new possibilities, and therefore the creative process matters no less than the final product. Although the general sense of creation is closely connected to art and art studies, creativity, as a fundamental pillar in the national curriculum, is no more limited to art studies than to other subjects or fields of study (The Ministry of Education, Science and Culture, 2014, p. 22).

The Icelandic national curriculum guide stresses new ways of thinking in school activities and places an emphasis on creativity, experience, rationalism and research. This is in line with the definition of critical thinking by Skúlason (1990). He stresses that critical thinking is a process of searching for new and better reasons for one's ideas and views, and consequently revising them (Skúlason, 1990). This definition, on the other hand, says nothing about how one can form an opinion or assertion; it rather describes how to evaluate the opinion and assertion that is available. Critical thinking is "thoughtful thinking", it challenges an idea. Critical thinking is to question everything and not believing just because someone wrote or said something. Dewey points out that reflective thought implies that something is believed in, or disbelieved, not on its own merit, but through something else which stands as witness, evidence, proof, voucher, warrant; that is, as a basis of belief (Dewey, 1933, p. 8). Ennis (1996, p. 165-182) believes that critical thinking is a reasonable and reflective process focused on deciding what to believe or do. Moon (2008, p. 25) stresses that clearly critical thinking has something to do with the processes of learning but it is not all of learning.

When education is based in theory and practice upon experience, it goes without saying, that the organized subject matter contributed by the adult and the specialist cannot provide the starting point. Nevertheless, it represents the goal education should continuously move towards.

CAN CRITICAL THINKING BE TAUGHT?

Now I will come back to the title question of my article: Can critical thinking be taught as applied in Icelandic education? By itself, it is obviously not enough to teach people particular procedures for looking into things on their own. It is also necessary to persuade them to embrace the will to believe nothing other than what is grounded in inquiry, instead of letting their thoughts be controlled by their own wishes or concerns. For this is the meaning of the principle that it is wrong to believe anything on insufficient grounds (Skúlason, 1990). Students' reasoning and critical thinking should be encouraged as well as their creative thinking and problem solving. Students should be trained in reasoning and supporting their views orally and in writing. It is important that students learn to reflect on their ideas and realize what effect feelings have on their thoughts, sound judgment and ability to respond to new circumstances.

Hence, it is part of a teacher's responsibility to see to two things equally: First, to ensure that the

problem facing the students grows out of the conditions of current experience and that this experience is within the capacity range of the students; and, secondly, that its nature is such that it arouses in the learner an active quest for information and for production of new ideas. The new facts and new ideas thus obtained become the ground for further experiences in which new problems are presented (Dewey, 1938 p. 79).

So, what is enough? And how is it possible to teach students to think in a critical way? If the students cannot believe anything without examining it first, or, if they have to question everything, will they ever learn anything? And if it is wrong to believe anything on insufficient grounds what should they believe? Should the students then question everything the teacher tells them just because they have not examined and found sufficient ground for what the teacher is saying? Is it possible to teach critical thinking if the teacher determines what material to teach? How to teach it? How should work be organized? In sum, the entire classroom environment and the development of the students is subject to the professional judgement of the teacher. The task of specifying a critical thinking disposition for the purpose of teaching and assessment is not an easy one. Different teachers have different standards of reference for critical thinking. The national curriculum offers no definitions of what critical thinking involves, although a definition of creativity, has been released in a special publication as a fundamental pillar of education. Therefore, it could be argued that by using creative teaching methods students will learn to think in a critical way. Creativity comprises methods that constantly offer new possibilities, and, therefore, the creative process matters no less than the final product. Part of creativity is the skill to reflect critically. In other words, to be able to reflect critically is a process of searching for new and better reasons for one's ideas and views, and consequently of continually revising them, in accordance with the Skúlason (1990) definition of critical thinking.

CONCLUSION

In this article, I have explored the Deweyan perspective on the notion of critical thinking applied to Icelandic education. The Icelandic national curriculum guide stresses new ways of thinking in school activities, emphasising creativity, experience, rationalism and research. Dewey stresses that students will not learn from experience as much as they learn from reflecting on experience and that the connection between education and personal experience is the most important aspect of education. He also points out the advantages of learning by doing where students are active participants in a quest for knowledge, not only passive recipients.

> Education takes the individual while he is relatively plastic, before he has become so indurated by isolated experience as to be rendered hopelessly empirical in his habit of mind. The attitude of childhood is naïve, wondering, experimental; the world of man and nature is new. Right methods of education preserve and perfect this attitude, and thereby short-circuit for the individual the slow progress of the race, eliminating the waste that comes from inert routine" (Dewey, 1933 p. 156).

He encourages teachers to use material suited to the student experience and previous knowledge because new knowledge is adopted and interpreted according to previous knowledge. For some teachers this is a challenge and calls for a change in their teaching practices. Dewey stresses the uses of creativity and creative teaching methods for the benefit of the students. The essence of creativity

is the skill to reflect critically. For students to respond to this challenge they need to be interested and acknowledge the purpose of learning. The students must be active participants in the process of understanding, knowing, and achieving through creativity and critical thinking. If the school system succeeds in implementing creativity and critical thinking in basic education, the school, the students and the community as a whole will grow as a result.

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EFFECTS OF MUSIC IMPROVISATION ON ACADEMIC PERFORMANCE AND GENERALIZED ANXIETY IN YOUNG ADULTS

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Teenagers experience much anxiety physically and emotionally and these experiences can affect their academic performance. Many children especially in the United States face trouble which can present itself through such acts as school violence and dismal academic performance. While problems facing our teenagers have no single solution, this study aimed at investigating the beneficial effects of improviser-mediated musicality on academic performance and generalized anxiety in teenagers. This study examined whether improviser-mediated musicality leads to academic achievement in adolescents and also whether it improves the health and well-being of teenagers. Methods: A within-subjects method was used. 75 adolescents attending an urban public middle school in central Mississippi participated in this study. Anxiety scores were measured using Spielberger's State-Trait Anxiety Inventory for Children (STAI-C) pre-test and post-test. The mathematics performance scores were measured pre-test and post-test using the fourth edition of the Wide Range Assessment Test (WRAT-4). Results: Repeated-Measures ANOVA results indicated a significant improvement in pre-test and post-test WRAT-4 scores ($F(1,19) = 17.22$, $p=0.001$, eta squared$=0.604$) for the seventh-grade students. The mathematics scores were significantly higher after the improviser-mediated musicality session. The state and trait anxiety scores were significantly lower in post-test attempt. Results of the Pearson's r also suggested that the pre-test and post-test State subscale scores for the entire sample were not correlated ($r(20) = .174$, $p = .561$) suggesting that there might have been a change in the level of situational anxiety over time. There was a significant reduction in post-test State subscale scores compared to the baseline data.

KEYWORDS

Music, test, anxiety, scores, academic performance.

INTRODUCTION

Human beings have used music to decrease anxiety and discomfort for thousands of years (Mattei & Rodriguez, 2013). However, the use of music in practical settings as an adjunct therapeutic treatment only began to take hold in the 18th century (Arveiller, 1980). Music therapy, which involves the controlled use of music, its elements, and its influences to produce changes in physiology, behavior, thoughts, and emotions, is particularly a new adjuvant therapeutic tool in medical practice that began in the middle of the 20th century. This a promising clinical and evidence-based intervention that has been used to alleviate psychological, physiological, and emotional symptomatology during the treatment of many forms of illness and disabilities (see Bradt & Dileo, 2009; Guzetta, 1989; Hamel, 2001; Hanser & Mandel, 2005; Munro & Mount, 1978). If individuals are engaged in a structured receptive (listening or relaxing to music) or active (producing music, singing lyrics, or writing songs) music therapy program with clear aims and specific goals, a positive treatment outcome can be attained and the beneficial effects of music can be realized (Ruud, 1998; Sacks, 2006). In early childhood, there seem to be beneficial effects of music on the development of perceptual skills that affect language learning which subsequently impacts literacy. Opportunities to coordinate rhythmically by playing a musical instrument or listening to musical lyrics appear to be related to academic achievement and literacy skills acquisition. Moreover, learning to play a

musical instrument has been shown to improve fine motor skills. Listening to music also seems to enhance spatial reasoning skills, one aspect of general intelligence that is related to some of the abilities required in mathematics (Rauscher, 2002; Gruhn & Rauscher, 2008; Caterall & Rauscher, 2008; Sacks, 2007; Akombo, 2013). Findings from research with adults have revealed other beneficial music effects. Playing the piano exercises the heart as much as a brisk walk (Parr, 1985) and there are lower mortality rates in those who make music or sing in a choir (Bygren, Konlaan, & Johansson, 1996). In addition, music making has been linked to perceived good health, improved quality of life, and enhanced psychological well-being (Spencer, 1997; Vanderark, Newman, & Bell, 1983; Wise, Hartmann, & Fisher, 1992; Akombo, 2013).

Music-based interventions, as commonly practiced in non-clinical settings and as considered in this research, are secularized forms of music therapy, which may include receptive music listening or active music playing programs (Aldridge, 2000b; Snyder, & Chlan, 1999). Every music session engages the participant in a musical experience such as re-creating or improvising music. In sessions that involve re-creating music, the client sings or plays already composed music. This kind of music experience may include learning how to produce vocal or instrumental sounds, imitating musical phrases, using musical notation, participating in sing-alongs, practicing, taking music lessons, performing a piece from memory, working out the musical interpretation of a composition, or participating in a musical show. In sessions that involve improvising, the participants create their own music extemporaneously while singing or playing whatever arises in the moment. Improvisation offers participants the opportunity to freely experiment with instruments and sounds. Thus, individuals take part in spontaneously creating music with others usually in a secure and supportive environment. In a dynamic sense, the session becomes more personal and intense as it progresses from receptive listening to active improvisation. In improviser-mediated musicality, chords, keys, scales, and rhythmical changes are of great importance throughout the music session. The improvisation is always new and different and expresses the feelings of the participants at the time (Tervo, 2001). Therefore, the purpose of the present study was to examine the effects of improviser-mediated musicality on anxiety and mathematics ability in African American adolescents in a middle school located in the southern region of the United States.

METHODS

A within-subjects method was used. (*N*=75) adolescents attending an urban public middle school in Mississippi participated in this study. Two research questions guided this study:

- What effect does improviser-mediated musicality have on generalized anxiety in adolescents?

- What effect does improviser-mediated musicality have on academic performance?

Following the research question, three hypotheses were established to guide the research as follows:

- If adolescents participate in improviser-mediated musicality, then they will have low levels of state anxiety.

- If adolescents participate in improviser-mediated musicality, then they will have low levels of trait anxiety.

- If adolescents participate in improviser-mediated musicality, then they will perform better on the Wide Range Assessment Test (WRAT-4) standardized test in math.

In order to test these hypotheses, twenty-three (*N*=75) African American (45 males and 30 females in grades 6-8 were enrolled in this study. An explanation of the study was presented to all students, their teachers, and parents. The researcher requested permission from the School Superintendent to announce the research to the parents and students. If the students agreed to participate in the study, a signed consent form was obtained from the parent while assent was obtained from the participants. The study was approved as required by the Institutional Review Board of Jackson State University.

During the data collection sessions, participants were offered the opportunity to engage in one 30-minute session of improviser-mediated musicality in the band classroom setting where they met as a group once a week for 9 weeks. On the first day, the researcher administered a demographic questionnaire which gave salient information about the population studied. This was followed by both subscales (State and Trait) of the State-Trait Anxiety Inventory for Children (STAI-C). Then Wide Range Assessment Test (WRAT-4) standardized test in math was administered by the researcher. Then Wide Range Assessment Test (WRAT-4) has been widely used as a norm-referenced measure of basic academic performance (Wilkinson & Robertson, 2006). Standardized on a representative national sample of over 3,000 individuals ranging in age from 5 to 94 years, the (WRAT-4) has retest reliability coefficients range from .78 to .89 for an age-based sample and from .86 to .90 for a grade-based sample.

On this first day, individuals did not engage in improviser-mediated musicality. Trait subscale of the STAI-C was given at the start and at the end of each improviser-mediated musicality session on Week 1 and week 9. State subscale of the STAI-C was given at the start and at the end of each improviser-mediated musicality session from Week 1 throughout the study. During the 30-minute music sessions, participants improvised melodies based on the Twelve Blues Scales (See Figure 1).
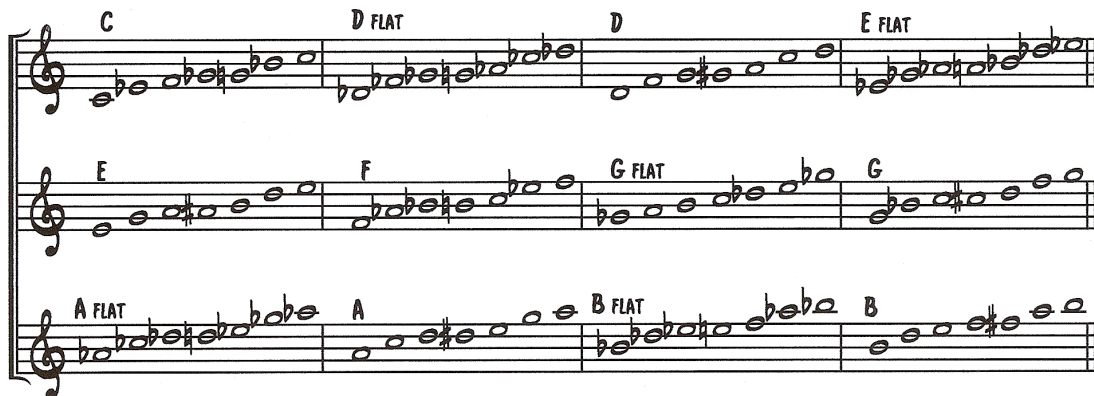
On week 9, the State subscale was administered by the researcher who then gave each participant the Wide Range Assessment Test (WRAT-4) standardized test in math assessment to complete followed by the entire STAI-C to obtain a post-test State subscale score as well as a post-test Trait score. Individuals did not engage in improviser-mediated musicality on week 9. The researcher hypothesized that actively engaging in improviser-mediated musicality would significantly reduce anxiety levels and noticeably

improve mathematics skills as measured by post-test STAI-C and Wide Range Assessment Test (WRAT-4) standardized test in math scores.

This research was conducted across several sessions at an urban middle school in Central Mississippi. Data was based on the number of correct hand signal responses. The participants were then asked to improvise melodies and rhythms based on the 12-bar blues chord progression (See Figure 2).
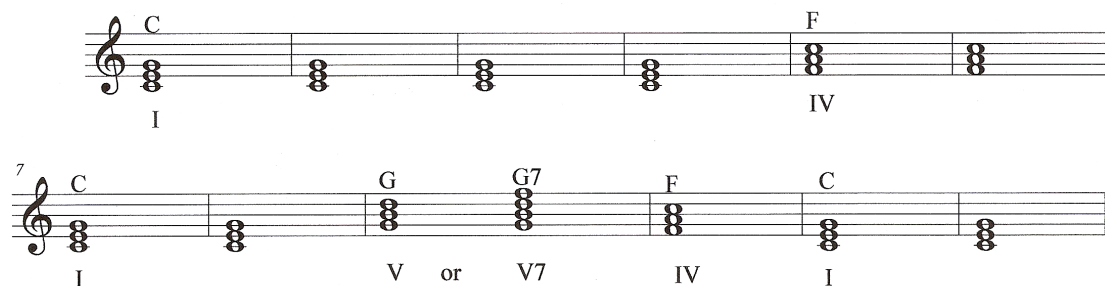
RESULTS

Anxiety scores were measured using Spielberger's State-Trait Anxiety Inventory for Children (STAI-C)pre-test and post-test. The math performance scores were measured pre-test and post-test using the fourth edition of the Wide Range Assessment Test (WRAT-4). Repeated-Measures ANOVA results indicated a significant improvement in pre-test and post-test WRAT-4 scores ($F(1,19) =17.22$, p=0.001, eta squared=0.604) for the seventh-grade students. The mathematics scores were significantly higher after the improviser-mediated musicality session. The state and trait anxiety scores were significantly lower in post-test attempt. Results of the Pearson's r also suggested that the pre-test and post-test State subscale scores for the entire sample were not correlated ($r (20) =.174$, $p = .561$) suggesting that the there might have been a change in the level of situational anxiety over time. There was a significant reduction in post-test State subscale scores compared to the baseline data.

In addition, a Pearson's product-moment correlation coefficient (Pearson's *r*) was calculated for the association between participants' (*N* = 75) State and Trait subscale scores on the STAI-C. No significant correlation was found ($r (21) = .283$, *p* = .199) between the pre-test and post-test State subscale scores obtained on Days 2 and 8, respectively. Results suggested that there was no relationship between participants' State anxiety levels at the start and at the end of our research. Also, a Pearson's *r* was calculated to determine whether there was an association between the pre-and post-test Trait subscale scores obtained on Days 2 and 8, respectively. However, no significant correlation was found ($r (21) = .007$, *p* = .490) between adolescents' Trait anxiety levels obtained at the start and at the end of this study.

DISCUSSION

The objective of this study was to investigate the effects of improviser-mediated musicality on generalized anxiety and academic performance in adolescents. The study supported the hypothesis that there would be higher scores in mathematics after jazz music improvisation. These results are similar to other studies

which have suggested that music interventions in school have increased reading scores (Rauscher, 2002; Southgate & Roscigno 2009; Akombo, 2013). Listening to music also seems to enhance spatial reasoning skills, one aspect of general intelligence that is related to some of the abilities required in mathematics (Rauscher, 2002; Rauscher et al., 1997). Improvisation offers participants the opportunity to freely experiment with instruments and sounds. Thus, individuals take part in spontaneously creating music with others usually in a secure and supportive environment. In a dynamic sense, the session becomes more personal and intense as it progresses from receptive listening to active improvisation. In improviser-mediated musicality, chords, keys, scales, and rhythmical changes are of great importance throughout the music session. The improvisation is always new and different and expresses the feelings of the participants at the time (Tervo, 2001). The state and trait anxiety scores were significantly lower in post-test attempt thereby strongly supporting of the hypothesis that the state and train anxieties would be lower. The results of this study were consistent with Akombo (2013) who reported a decrease in anxiety levels after an African drumming intervention. On the contrary, the results of the Pearson's r suggested that the pre-test and post-test State subscale scores for the entire sample were not correlated which suggests that the there was a change in the level of situational anxiety over time. In addition, no significant correlation was found between adolescents' Trait anxiety levels obtained at the start and at the end of this study. The result also showed that students were able to identify the primary chords in the 12-bar blues form. With each session, the subjects demonstrated greater confidence in their improvisations. In spite of the fact that different methods and measurements were used in this study, these results still indicate that improviser-mediated musicality has the potential to decrease anxiety in adolescents as well as have a significant effect on their cognitive skills in mathematics.

These findings provided evidence to support the hypotheses tested and indicated that adolescents who engaged in an active music-based intervention involving improviser-mediated musicality for 30 minutes per session scored significantly different on pre- and post-test State as well as pre- and post-test Trait anxiety subscale measures. However, there was insufficient evidence to provide support for our hypothesis pertaining to academic performance. Perhaps, directions for future research can include using another type of mathematics skills test and more age-appropriate music. In addition, it may be important for research to establish more consistent results in the effects of improviser-mediated musicality across the curriculum and on the overall quality of life index of adolescents by measuring other variables besides generalized anxieties.

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SCIENCE AND THE LANDSCAPE OF ARTISTIC AND CREATIVE EDUCATION

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This paper examines the questions concerning whether and how the domains of science and science education might expand the practical and conceptual landscape available to artistic and creative educators. It does so through a philosophical inquiry that parallels that of Martin Heidegger's in his seminal work: *On the origin of the work of art*. Following alongside, and in constant dialogue with Heidegger's arguments, this paper explores the nature of things and practices in science education and the relationship between the two. This inquiry allows us to re-imagine the landscape of science education in terms of key pairing between *things*, *works* and *truth*. In doing so, we come to better understand and appreciate the extent of the educational landscape that both art and science educators share.

KEYWORDS

Art, science, work, education, things, practice.

INTRODUCTION

The aim of this paper is to invite the reader to examine the possibility of whether the domain of science education may be a viable expansion of what we may take as the landscape of artistic and creative education. This paper is not an articulation of, nor a defence of the emerging interdisciplinary field known by the acronym STEAM (Science, Technology, Engineering, Arts and Mathematics), which makes its own distinctive contribution to questions and approaches concerning the integration of science with creative and artistic education. This paper instead seeks to examine the deeper ontological and metaphysical foundations of science, scientific practice and science educational practice, with the view to recovering those dimensions of science and science education that bring them more strongly into sympathy or resonance with art, art practice and artistic education. The task of this paper, therefore, is one of revealing a hitherto relatively unexplored artistic landscape hidden beneath longstanding assumptions about the nature of science, art and education. The paper will not attempt to outline in any detail the significant task required to bring the exiting literature on artistic and creative education into a detailed exploration of this novel scientific-artistic territory. As stated earlier, the paper serves as an invitation to the community of practitioners – in science education and artistic and creative education – to imagine and enact ways of engaging with science that do justice to art and science at the metaphysical level at which they are examined in this present paper.

More precisely, the paper concerns itself with a philosophical inquiry into the things and practices of science education with the view to asking whether and how these science-education-things and

science-education-practices may be understood (perhaps even best understood) as also artistic and creative things and practices. If this is the case, then domain of science education becomes available to the conceptual and practical tools and approaches of artistic and creative education. Although it is possible to imagine this project as a critique of the 'dominant' ontological and epistemological claims of science education – as difficult as these may be to define unequivocally – the questions posed in this inquiry are emphatically in the spirit of exploring what science education offers in *addition to*, rather than instead of, conventional renderings of science and science education. This makes it necessarily an open task that would benefit from contributions from artistic and creative educators and practitioners.

With the guiding question in mind (what is an artistic and creative landscape available through science education?); and the targets of that inquiry (the things and practices of science education); this paper draws upon a particular philosophical perspective on art through which to examine where art may be found within science education. That philosophical perspective is derived from Martin Heidegger's seminal essay: *On the Origin of the Work of Art* (1971), hereafter OWA. The reasons for selecting this work are two-fold. Firstly, from across Heidegger's substantial and broad philosophical works, OWA is arguably the clearest exposition of Heidegger's understanding of the relationship between (i) works of art, (ii) the artists that create these works, and (iii) the discipline of art itself. The choice of OWA therefore stems from the possibility that at the conceptual level of this artistic trinity there may be some fruitful correspondence with science, scientists and works of science. Secondly, Heidegger's approach to the question concerning the origin of the work of art acknowledges the circular and reciprocal relationships between these three elements, and hence keeps the question of the origin of the work of art open and alive; and in keeping with the aims of this paper:

> Thus we are compelled to follow the circle. This is neither a makeshift nor a defect. To enter upon this path is the strength of thought, to continue on it is the feast of thought, assuming thinking is a craft. Not only is the main step from work to art a circle like the step from art to work, but every separate step that we attempt circles in this circle. (OWA, p. 18)

In a more formal sense, this paper follows the structure of OWA, in an effort to remain in conversation with it: hence, the duplication of OWA headings: *Thing and Work*, *The Work and Truth*, and *Truth and Art*.

THING AND WORK

Mindful of the intention to examine things and practices, I want to begin my inquiry as Heidegger does by first attending to the *thingly* nature of works (of art). The aim is to see whether there are things in science education – as works of science – that work as works of art and may be approached with the same educational sensibility. Scientific works are the material artefacts of the science classroom for sure, but also the creative works that emerge from scientific practices either by the science teacher, scientists, science students or any combination thereof. The list of entities covered by scientific works so defined is inexhaustible and so addressing each distinctive work comprehensively is beyond this

paper. So, for the sake of illustration, I want to restrict myself to a scientific work that is familiar to scientists and non-scientists alike: the Periodic Table of Elements.

THE CRUCIFIX AND THE PERIODIC TABLE OF ELEMENTS

A poster displaying the Periodic Table of Elements (hereafter PT) has, almost without exception, a ubiquitous position in countless science classrooms across the world. The fundamental features of the PT are always depicted: the staggered 18x6 grid of squares resembling a frozen game of Tetris; the branching rows of the Lanthanides-Actinides added for completeness despite being seldom if ever referred to; the roman alphabet elemental symbols, atomic weights and numbers, bold-face in each box – all of which give the PT the look of a translation table for an extra-terrestrial language. Oftentimes, different sections are colour-coded in bright, gelato hues. Occasionally an attempt is made to include a picture of the element as it is most commonly found in the real world; although this usually reduces to a monotonous serious of generic and indistinguishable lumps or vials of variously coloured liquids, solids or gasses. The table, in poster form, inevitably takes up a central and highly visible place on a wall that is otherwise typically crowded with propaganda posters for careers in science or students' very rushed attempts to translate a Wikipedia entry on some seminal topic into an eye-catching and informative display. For the most part the PT, like everything else on the walls sits there, a mere thing, waiting to be called upon or noticed – an illustration of Heidegger's observation about works of art: that '[a] picture hangs on the wall like a rifle or a hat. Works of art are shipped like coal from the Ruhr and logs from the Black Forest…All works have this thingly character' (OWA, p. 19).

For me, the ubiquitous presence of the PT in the science classroom, has always recalled memories of my education in a Roman Catholic school environment, where analogously, every classroom, office or meeting place (including the gymnasium) prominently featured a crucifix. Like the PT, this abstracted or highly figurative sculptural depiction of human-divine suffering, despite its metaphysical relationship with the transcendental other, also reduced somehow to being a mute and passive object.

Yet, juxtaposing the PT and the crucifix in an educational context raises a dilemma that is well addressed in Heidegger's OWA. It concerns our uneasiness in accepting the PT (or the crucifix) as a *mere things* and nothing else. That these objects sit within complex ecologies of symbolism, meanings and practices suggests that to each adheres something else that confers upon it an ontological status beyond its brute materiality. Perhaps these things are symbolic (*sum-ballein* in Greek); they are literally a sum or tethering of the 'mere thing' and some mysterious aspect that affords the combination a new ontological status. And is this not what education aims at – to inject the extraordinary into the ordinary? This response, however, raises questions about what it is that is appended to the mere thing and what is responsible for such a tethering: what makes the PT poster symbolic of science and is that process or practice sufficient to account for its being a work of science? The latter question is pertinent here in that is raises the possibility that artistic and creative education may bear on the things of science education in different ways depending on whether things in the classroom and elsewhere are taken as symbols of science or works of science.

THING, WORK AND EQUIPMENT

Thus far we have been working with the presupposition that a thing like the PT poster on the science classroom wall is an amalgam of a thingly character – the mere thing; the paper printed with ink – and something else that modifies its ontological status. Heidegger too takes up this presupposition as vehicle for his own inquiry into what makes a work of art not just a thing. However, in doing so, he ends up drawing the conclusions that three long-established theories concerning the nature of things have fundamental limitations that impinge upon our understanding of the ready availability of works.

Of the three, Heidegger begins with the most ancient and enduring characterisation of things. In this view things are combination of *substances* and their *properties*:

> The block of granite, for example, is a mere thing. It is hard, heavy, extended, bulky, shapeless, rough, coloured, partly dull, partly shiny. We can take note of all these features in the stone. Thus we acknowledge its characteristics. But still, the traits signify something proper to the stone itself. They are its properties. (OWA, p. 22)

Heidegger is quick to draw parallels between the substance-properties formulation and its linguistic equivalent in the subject-predicate format of propositional statements. Although he does not pursue the issue to any great length, he does raise the dilemma as to whether the substance-properties formalism gives rise to subject-predicate forms in language, or whether conversely, a privileging of the subject-predicate linguistic structure is projected onto all our encounters with things. In science, and particularly science education, the horns of this dilemma represent respectively the positions of the scientific realist and the social constructivist. If nothing else then, Heidegger's reticence to tackle this world-word paradox in the context of art may be taken as a further invitation to dwell in the space of things rather than prematurely collapsing them into dualistic experiences of subjectivity and objectivity. Indeed, his rejection of the substance-properties formulation of things, even setting aside linguistic considerations, rests on the view that by forcing us to attend to what in the thing's nature is literally accidental (its properties) we are distanced from our experience of the thing to the point where it vanishes. Science educators are familiar with this ontological vanishing act. For instance, they oftentimes go to great lengths to enumerate the properties of atoms, but in doing so end up obscuring the very phenomena that taking atoms as substantively real serves to explain.

The second conceptualisation of things grounds their thingliness in the sensory field: 'The thing as a unity of a manifold of what is given in the sense' (OWA, p. 24). Here the thing becomes the synthetic experience of something within the vast field of what is available to the senses. Heidegger objects to this position on phenomenological grounds, arguing that ordinarily we seldom encounter things as such assemblages of sensory input against a background of inconspicuous, inchoate, noise; and that when we do, it requires a particularly abstract mode of attention. For example, to hear the particular sound that a particular thing makes is already to have lost a grip of the thingly origin of that sound. Heidegger rejects this perspective for having the opposite effect of the first; that is, the purely aesthetic and sensory brings things too close to us for them to be brought clearly into sight.

A third seminal account of things sits more forthrightly into communion with the idea of practice. Accordingly, everything we encounter consists of matter like the substantial part of the substance-properties view, but what is added to the matter instead of properties is *form*. This formulation applies just as well to natural things (a granite boulder) as to things formed by human intervention (the carved granite block). The concept of form-matter can be abstracted to the highest degree and brings within its dominion such ideas as the rational bringing form to the irrational, or the subject providing the form for objects (OWA, p. 27).

As intuitive as the form-matter formalism seems, the potential for an asymmetry in the relationship between form and matter remains a major issue for it. We can think of the distribution and arrangement of matter in natural things (as regular or irregular as they may be) as forms arising from the action of nature or natural processes. Similarly, things that humans have created (as works of art or science) also have this feature of having a form arising out of the action of an agent acting on mere matter. Whilst we may not be willing to extend the same characterisation to natural processes, in the domain of human activity at least, we would readily characterise such form-conferring activities and actions as *practice*: artistic practice, scientific practice, educational practice, or any other type (of form-giving) practice. This account of practice in the context of the form-matter pairing tends to foreground the agentive role of the practitioner as the best candidate for what makes a thing a work of art or science.

At first blush, then, it would appear we have resolved the interim question of what must be added to the mere thing in order to make it a work of art or science, namely: we must undertake some special practice that gives form to matter – whether that form is material, spatial, temporal, conceptual, symbolic, representational, etc. Indeed when we consider how science education research has focussed for decades on the defining role of teachers' and students' practices in the formation of authentic or inauthentic forms of scientific matter, representations, concepts, understandings, competencies, etc.; one gets the impression that practices of certain kinds lead to the reliable production of certain products, outcomes or works (e.g. knowledge and skills). However, we should instead see this prevalent performative approach as a clue to the inadequacy of practice (defined solely in term of per-form-ance) in capturing how practices give rise to artistic and scientific works.

Whilst '[m]atter is the substrate and field for the artist's formative action' (OWA, p. 27), and the 'matter-form structure…readily presents itself as the immediately intelligible constitution of every entity, because here man himself as maker participates in the way in which the piece of equipment came into being' (ibid, p. 29); the formative or performative role of the scientist, or artist, or teacher, or student obscures an important relationship between the nature of a work and the nature of a mere thing that is *at work* within the thing when used as 'equipment' in this way to serve some defined purpose or goal.

Heidegger offers a clue to what is at work in the use of equipment when he refers to van Gogh's painting of peasant shoes:

> A piece of equipment, a pair of shoes for instance, when finished, is also self-
> contained like the mere thing, but it does not have the character of having taken

shape by itself like the granite boulder. On the other hand, equipment displays an affinity with the art work insofar as it is something produced by the human hand. However, by it self-sufficient presence the work art is similar rather to the mere thing which has taken shape by itself and is self-contained. As a rule it is the use-objects around us that are the nearest and authentic things. This the piece of equipment is half thing, because characterised by thingness, and yet it is something more; at the same time it is half art work and yet something less, because lacking the self-sufficiency of the art work. Equipment has a peculiar position intermediate between thing and work, assuming that such a calculated ordering of them is permissible. (OWA, p. 28)

For Heidegger, a thing-as-equipment such as the poster of the PT, has an important characteristic that emerges directly from the equipment's being halfway between thing and work. As we have noted earlier, the ubiquity of poster of the PT makes it almost invisible: it dissolves into the spatial, temporal and agentive field of the classroom; whether or not it is being used. The poster of the PT sits reliably on the wall, and when gazed upon purposefully, it becomes seamlessly entangled with the practice of its interpretation and application. It is precisely its *reliability* that gives to a thing its character as equipment. Moreover, only whilst the thing-as-equipment *remains* reliable does its equipmental nature hold; for the reliability of equipment sets up stable worlds of practice:

The peasant woman wears her shoes in the field. Only here are they what they are. They are all the more genuinely so, the less the peasant woman thinks about the shoes while she is at work, or looks at them at all, or is even aware of them. She stands and walks in them. That is how shoes actually serve. It is in this process of the use of equipment that we must actually encounter the character of equipment. (OWA, p. 33)

The peasant woman is made aware of the world of *practices* and *being* that the shoes are a part of only when they fail or she otherwise becomes aware of them as things outside her practice. Only then does their reliability enter into the realm of conscious reflective awareness: the burden of her labour standing out as such against the backdrop of her previous seamless, skilful coping in the world. It is in this sense that the teacher who put up the poster of the PT in a most prominent place set this thing to work as reliable equipment and therefore to setting up a scientific world in which she and her students may practice. What the reliable nature of equipment entails is that things-as-equipment (whether in the science or art classroom) do carry the quality of mere things in their self-sufficient being-there, but more importantly, they are also at work (like works of art or science) in setting up worlds: the world of science or the world of art. Thus we see immediately that the purposeful use of things-as-equipment reveals one aspect in which the landscape of artistic and creative practice and education coincides with that of science and science education. Whatever their epistemic differences, science and art align insofar as their reliable material practices serve an ontological role in bringing forth scientific and artistic worlds, respectively, into being.

WORK AND TRUTH

So far we have seen how thinking about equipment allows us to understand how even reliable performative, instrumental or technical engagements with things in the classroom permit the teacher to set up worlds for themselves and their students, and more to the point, can achieve the setting up of such worlds because equipment has an aspect to it that brings it close to the nature of works of art. Thus the science teacher's practice shares at least this capacity to set things to work as works-of-art in the science classroom. But are there other ways in which the things and practices of science education come to shape educational landscapes in ways that are readily navigable by, or at least comprehensible to, artistic and creative educators?

Heidegger allows us to progress with this question by pointing to the fact that works of art hold a particular relationship to truth. Indeed, in OWA, Heidegger returns to the very same painting of peasant shoes by van Gough to explicate the work's relationship to truth by describing how the painting itself lead him to understand the essential character of equipment:

> Not by a description or explanation of a pair of shoes actually present; not by a report about the process of making shoes; and also not by the observations of the actual use of shoes occurring here and there; but only by bringing ourselves before van Gogh's painting. This painting spoke. In the vicinity of the work we were suddenly somewhere else than we usually tend to be...The art work let us know what shoes are in truth. (OWA, p. 35)

Van Gogh's work of art functioned to un-conceal the being of the shoes-as-such: that is, their being equipment by virtue of their reliability helping setting up a world. But this revelation did not arise because the painting was a true representation of shoes, a reproduction or symbol of shoes. That would again render the work a mere thing, formed matter, a substance with properties, or another piece of equipment. Instead, Heidegger suggests that the work of art is a work of art because it reveals the truth, not in the sense of a correspondence with reality, but rather in the ancient Greek sense of truth as 'aletheia' (OWA, p. 36).

> This opening up, i.e. this un-concealing, i.e. the truth of beings, happens in the work. In the art work, the truth of what is has set itself to work. Art is truth setting itself to work. What is truth itself, that it sometimes comes to pass as art? What is the setting itself to work? (OWA, p. 39)

What we must attend to in this account of the work of art is the emphasis that Heidegger places on the "truth of what is" setting itself to work. This shifts significantly the role of the artist or scientist practitioner, in making art or science, from simply engaging in a practice that involves forming matter or using equipment. Heidegger is not claiming that there is no role for the artist in making a thing a work of art – quite the contrary, the artist must play a role in which she disappears in the making so that the truth may be set to work and the work is let be:

> To gain access to the work, it would be necessary to remove it from all relations to something other than itself, in order for it to stand on its own for itself alone...It is precisely in great art...that the artist remains inconsequential as compared with

the work, almost like a passageway that destroys itself in the creative process for the work to emerge. (OWA, p. 40)

It is possible to present (and be present to) great works of art in the unmediated way that Heidegger thinks is their due. He offers the Greek temple at Paestum as one example of such a great work of art. The temple was for the historic people of Hellenistic Paestum a work of art because '[b]y means of the temple, the god [was] present in the temple' (OWA, p. 41).

> The temple, in its standing there, first gives to things their look and to men their outlook on themselves. This view remains open as long as the work is a work, as long as the god has not fled from it...It is the same with the sculpture of the god...It is not a portrait whose purpose is to make it easier to realize how the god looks; rather, it is a work that lets the god himself be present and this is the god himself. (OWA, p. 43)

The temple here serves as art because it manifests what Thomson (2011) refers to as the *ontotheology* of the Hellenistic people: which he simplifies to "what is" (ontology) and "what matters" (theology) for the those who built the temple, worshiped in it and conducted their lives around it. This means that the work of art does indeed exceed it materiality and in metaphysical ways that take it beyond the equipmental function discussed earlier.

The work of art is set forth out of its material, but in ways unlike equipment is. For instance, the stonemason who constructed the temple used stone as equipment to ensure the reliability of the temple structural function. The stone is used up as equipment in making the temple. Indeed the stone is used up and disappears into the stones usefulness in the temple's architectural structure. But in the temple-as-work-of-art (a work in stone rather than of stone) the stone of the temple appears to us for the first time. The temple reveals the truth of stone in its revelation of the ontotheology – or truth as aletheia – of those who built and worshipped in it. In this latter sense, and unlike equipment, there is no limit to the truth that is un-concealed through the set up of a work in this way, and so the stone in the work is never used up. The work of art – in a way that is quite distinct from those that characterize mere things and equipment – remains open in so far as one can return to it again and again and have it reveal the truth inexhaustibly in different ways; and at the same time works of art, in their self-sufficiency also conceal something of their being from us by 'refusing themselves to us down to that one and seemingly least feature which we touch upon most readily when we can say no more of beings that they are' (OWA, p. 53).

TRUTH AND ART

The artist (or scientist) is not peripheral or incidental to making works of art (or science) in this Heideggerian, dual sense: that is, making things that (i) un-conceal the truth as aletheia, and (ii) resist our attempts to describe or explain them away by concealing from us their unmediated being. This two-fold process of un-concealment and concealment is the 'happening of the truth' that Heidegger sees as at work in works of art. Moreover, we must not mistake this two-folded-ness of truth in the

work for some kind of contradiction. Instead, following Heidegger, we ought to take this as *the* conflict or strife that is inherent in and constitutive of works of art:

> Truth wills to be established in the work as this conflict of world and earth. The conflict is not to be resolved in a being brought forth for the purpose, nor is it merely to be housed there; the conflict, on the contrary, is started by it. (OWA, p. 62)

So very often we are likely to miss the presence of this conflict in works of science and thereby fail to encounter them as the works of art that they are. There is much of this workly quality in the poster of the PT when one takes it not as a representation of the world, not as a series of symbols, but rather as what passes as truth in our age: the poster of the PT at once offers us an iconic grasp of all of science, and simultaneously vanished from sight the nearer we approach the unmediated encounter with the ontology of science it brings into contact with.

If the poster of the PT is indeed a work of art in the Heideggerian sense, then it calls on the science teacher, and the art teacher too, to do more than re-produce it; refer to it; use it as equipment; or treat it as mere object, a prop or a scientific artifact. Rather as a work of art it invites us to preserve its truth – not as a conservator would – but as a witness would. This requires a kind of reverential type of knowing that lets the work reveal, self-sufficiently, 'what is' and 'what matter' in so far as we (individually and collectively) are capable of authentically being present to such mattering.

CONCLUSION

This paper began in the spirit of trying to discover whether and how the things and practices of science education might constitute a new landscape within which artistic and creative educators could venture and apply and refine their own valuable and unique approaches. Yet, in the course of following Heidegger's careful inquiry into the nature of works of art in relation to science education, it appears less likely that art educators can find within the domain of science education a truly novel ontological terrain. Instead – and notwithstanding epistemic and phenomenological distinctions – it may be more proper to claim that both the science and art educator look upon the same broad features in the educational landscape; albeit from slightly different vantage points.

Heidegger's seminal work on the origin of the work of art allows us to see more clearly three prominent landmarks that are available to both kinds of educational practitioners and researchers.

The first landmark is characterised by the relationship between things and works and underscores the importance of equipment in both art and science. This relationship suggests that even within the kind of utilitarian use of materials in the service of formative and performative modes of education, there remains something in their disciplinary reliability that helps set up worlds of art and science for teachers and their students.

The second landmark directs us away from a merely functional approach to education that centres on representation, and towards an understanding of and appreciation for 'what is' and 'what matters'.

Finally, the central feature in the common landscape described here is the *truth*. But this *truth* is neither circumscribed by the ever-shifting sands of a relativist account of truth, nor fixed prematurely by the monolithic account of truth-as-correspondence. Instead Heiddeger asks us to see truth as that eternal and abundant conflict that is readily available to all of us in works of art and science alike. It is the kind of truth that invites us to dwell a little longer in the landscape.

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