CREATIVE CONSTRUCTIONS

Notions of creativity, and their place in “high-stakes” assessment

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Declaration

I declare that I have composed this thesis myself and that it embodies the results of my own research. Where appropriate, I have acknowledged the nature and extent of work carried out in collaboration with others included in the thesis.

Barbara Ann Schuler

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I would like to thank everyone who contributed to this project, especially the teachers and other education professionals who took part in the research, since without them, there would be no thesis! I am extremely grateful for the support, advice and infinite patience of my supervisors Professor Mark Priestley and Dr Maureen K Michael. Special mention also to all those who listened, sympathised, and helped in various ways, particularly Dianne Millen, Mary Njoki and Sarah Paterson (I owe you all coffee/wine/a holiday).

I am not going to pretend that completing this project was easy. It was not. At times the task seemed impossible. However, as Deleuze comments, “A creator that isn’t grabbed around the throat by a set of impossibilities is no creator” (Deleuze 1995, p.133).

I dedicate this thesis to Joe, Zach and Marc, and to the memory of my father Robert Murphy and my grandmother Anna Donnachie McNaughton.

Abstract

This thesis articulates the case for assessment *for* creativity, rather than assessment *of* creativity. It proposes a nomadic creative pedagogy to resist the construction of creativity as perpetual commercial training (Deleuze and Guattari 1994). These proposals are constructed from an empirical study into creativity and summative assessment in the context of Scottish secondary education.

Scotland's school education system has traditionally been presented as innovative and successful. However, there are moves to reform the curriculum and National Qualifications to better reflect contemporary globalised policy imperatives regarding creativity. In these desiring-productions (Deleuze and Guattari 1983), driven by bodies such as the Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (WEF), creativity is a "21st-century skill" that is essential for social and economic progress. The OECD's new "creativity test" for the Programme for International Student Assessment (PISA) regime attests to the strength of these desires.

Despite this policy activity, there is little evidence from Scotland on the role of creativity and approaches to assessing it. As such, this study contributes important empirical evidence about the nature of the creativity-assessment relationship in Scottish schools. A nomadic schizo-methodology was assembled to undertake a qualitative exploration with teachers from six secondary schools. Local authority officers were also interviewed, and two focus groups were held with a diverse range of education practitioners from across a local authority area. Using the concept of the war-machine (Deleuze and Guattari 1987), the research also maps the manoeuvrings of the "creativity movement" across the territory of public education.

The findings are presented as tangled tales that are woven together to form the principles of desire, guide, pickaxe/torch, caesura, provocation, continuance, and map/trace. The thesis concludes with a discussion of how a transversal creativity which "becomes" through the teacher-student war-machine can offer a potential way out of entrapment.

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Chapter 1: Introductions

Significance and context

Creativity is the key to solving the problems of the future, according to intra-national policy-influencing organisations such as the Organisation for Economic Cooperation and Development (OECD) and the World Economic Forum (WEF). In this narrative, education plays a crucial role in promoting creativity, as schools must equip children with the "21st-century" or transferrable skills demanded by networked, multinational corporations (Schleicher 2018), creativity being foremost among these skills. Thus, creativity is constructed as an essential tool for survival in the unpredictable world of tomorrow. To achieve these aims, however, state education must be transformed from the current moribund, old-fashioned, inflexible model which constrains students' creative potential.

These insistences on the desirability and necessity of increasing creativity within and through education (Loveless and Williamson 2003) provide the immediate context for this project. Recently, there has been a policy drive towards developing high-stakes assessment of creativity. The most significant of these developments is the creative thinking test devised for the (postponed) 2021 round of the OECD's Programme for International Student Assessment (PISA) (Lucas et al. 2013). Given the importance attached to PISA and the widespread influence of the OECD's views about education (Sellar and Lingard 2014), the new test is likely to have a considerable impact on policy at the local level.

However, creativity is a complex and contested notion, and these difficulties are amplified when it is located within the context of education. There are many, often competing, views on what creativity is, and these arguments are connected to different understandings of what the nature and purpose of education is, or should be. Yet there is surprisingly little research into these issues, particularly in relation to creativity's place in new curricular models (Priestley and Biesta 2013) such as Scotland's Curriculum for Excellence. These factors speak to the relevance and significance of this project. It addresses gaps in the literature by exploring how creativity is

constructed in Scottish education policy and practice (Drew et al 2016) and analysing the global creativity movement and its manoeuvrings in the territory of state education more broadly.

Over the past few decades, various Scottish education initiatives have been developed in response to the global policy insistence on creativity. These include Determined to Succeed: Enterprise in Education (Scottish Executive 2002) and the Ambitious, Excellent, Schools programme (Scottish Executive 2004), which proposed a “flexible and innovative” approach to teaching and school organisation. This trajectory has continued through to the introduction of a Creative Learning Plan (2013) and the establishment of Creative Learning Networks, which are delivered at the local authority (local government) level and aim to support creative teaching, creative learning and “creativity skills across all subjects” (Education Scotland 2021).

In these policy documents, creativity is variously described as a process focusing on the individual which involves looking at familiar things with a fresh eye, examining problems with an open mind, making connections, learning from mistakes and using imagination to explore new possibilities (Education Scotland 2013). The most recent definition constructs creativity as a “meta-skill” comprising problem-solving, curiosity, open-mindedness and imagination (Education Scotland 2021).

These constructions are underpinned by an assumption that creativity is a generic skill that can be unproblematically transferred across domains (Craft 2001). However, there is a considerable body of evidence which suggests that creativity is domain-specific, in that the creative process varies considerably depending on the subject in question (Baer 2015). Such confusions arise in part from the dominant policy belief that creativity is a skill, rather than something that is connected to knowledge, judgement and reflection (Wiliam 2013; Biesta and Priestley 2013).

The Creative Learning Plan includes a commitment to consider how creativity can feature more prominently in external course assessments, and across a broader range of subjects than those traditionally associated with creativity, such as the expressive arts. It is for this reason that the Scottish Qualifications Authority (SQA), who are partners in the Creative Learning Plan, co-funded this PhD, along with the Economic and Social Research Council (ESRC).

The global policy drive towards developing “high-stakes” assessments of creativity has resulted in renewed interest in how creativity is defined, since quantitative measurement requires a clear definition of the construct that is being tested (Blamires and Peterson 2014). Hence, the definition of creativity is also a focus of this research. Despite claims by advocates of creativity

such as the OECD Director of Education and Skills, Andreas Schleicher (2018), there is no consensus on the definition of creativity. This raises fundamental questions about whether it is meaningful or valid to attempt to measure creativity in this way. Further questions then arise from this problem; namely, if measuring creativity is not desirable, are there other approaches to learning and assessment that might help students' creativity flourish? Hence the rationale for the present study, which aims to disrupt the dominant policy construction of creativity by suggesting alternative ways of understanding creativity and rethinking its relationship to assessment.

The research questions which inform the project are:

- What are the notions of creativity in current educational policy in Scotland and how have these evolved?
- What is the relationship between summative subject-based assessment and creativity?
- What differences, if any, exist across different subject domains in relation to creativity and the assessment of creativity?
- What are the curriculum, teaching and learning implications of the summative assessment of creativity in subject-based assessments?

The aims are:

- Develop a definition of creativity within the school curriculum that is better informed by empirical research and educational theory.
- Explore pedagogical and assessment practices related to creativity across multiple subject domains.
- Develop assessment principles and practices to inform the assessment of creativity in future curriculum and assessment policy in Scotland.

Who are you?

> "Who are you?" said the Caterpillar.
> This was not an encouraging opening for a conversation. Alice replied, rather shyly, "I—I hardly know, Sir, just at present—at least I know who I was when I got up this morning, but I think I must have been changed several times since then."
> "What do you mean by that?" said the Caterpillar, sternly. "Explain yourself!"
> "I ca'n't explain myself, I'm afraid, Sir," said Alice, "because I am not myself, you see."
>
> (Lewis Carroll (1865) *Alice's Adventures in Wonderland*)

First, some introductions. In this section, I provide a personal narrative about who I am and how I arrived at this project. This will help to explain some of the decisions made in the study, such as the use of creative writing and the poetic, and why Deleuze and Guattari's theories became central to the project.

I regard myself as a becoming-researcher and becoming-writer. Undertaking this project has inspired and challenged me to reflect on my own values and beliefs about creativity, education and research more generally. In particular, it prompted me to think about the ways in which I consider myself to be creative.

Like Alice, I find it difficult to explain who I am as I have changed several times over the years. This research concerns the Scottish state education system, which is the system that I was educated in; as such, I bring experiences of Scottish education, both positive and negative, to the project. I come from a working-class family and was brought up in the Greater Glasgow area. I am the first in the family to enter higher education. My parents, aunts and uncles left school at the earliest available opportunity with no qualifications, as was typical for young people from their backgrounds at that time. Despite being considered academically high achieving, I did not enjoy school at all. However, reading provided me with a refuge and an escape route, and this was largely due to my grandmother and her love of poetry. Her school education had ended at the age of 12, so perhaps it is surprising that this was the case. She owned several volumes of poetry, including the works of Blake, Shelley and Keats, and these became favourites of mine, too. I have long been inspired by the Romantic era poets' appeal to what Law (2004, pp.14-15) refers to as the "goods" of beauty, justice, the spiritual and the political, and this is why ideas from the radical Romantic tradition informed my thinking about this project. Writing is the way in which I am creative, and I wanted to bring this into the project; hence the decision to use a narrative method in the analysis.

My family's experiences of disadvantage and their ambivalent views about education are certainly part of who I am, although I would not describe myself as working class anymore. I have struggled with issues of identity, belief and values over the years, but one thing that is consistent is my desire to question, rather than accept, the status quo. This no doubt explains why I am drawn to projects and theoretical perspectives that aim to challenge deep-seated assumptions about education and society more generally.

After a very difficult time in my early teenage years during which I completely disengaged from school, I followed a non-conventional route into higher education via my local further education college. Despite this, I ended up studying for an undergraduate degree at an elite university and graduated with first class honours. I thoroughly enjoyed my course, but did not pursue postgraduate study as both my family and I thought this was an unaffordable luxury. Inspired by vague notions of "making a difference", I worked in various policy and research roles in national voluntary organisations and in the Scottish Government. However, I grew tired of writing papers that merely supported the latest policy trends. I wanted to do something more in-depth and meaningful, but I needed space and time to think about the purpose of education, how the assumptions built into the system might be identified and overcome, and why policies fail to achieve their purported aims. It seemed to me that education policy was trapped in a cycle of repetition in which (supposedly) new initiatives were introduced every few years, yet nothing ever really changed. These are some of the factors that explain how and why I arrived at the point of applying for a funded PhD on the topic of creativity and high-stakes assessment.

Why this, and not that?

I first encountered Deleuze and Guattari in a chapter by jan jagodzinski (2013). This provided an analysis of creativity in contemporary society based on Deleuze and Guattari's (1988/2017) concept of control society. For Deleuze and Guattari, the present mode of social organisation is a new phase of global, corporate capitalism which is characterised by overarching and all-pervasive control. jagodzinski (2013) argues that in control society, human imagination is captured from an early age. Creativity becomes commodified, amounting to little more than a "designer capitalism" (ibid., p.112) that merely serves the interests of the system. Advertising and marketing sell us dreams of beauty and freedom, and neoliberal ideology tells us that we can achieve whatever we desire. We might believe that creativity is inherently connected to liberty and self-expression, but ultimately this is all illusory. This analysis immediately appealed to me, as it conveyed exactly what I was finding problematic about the creativity agenda being heavily promoted by global policy organisations such as the World Economic Forum.

However, there are many theoretical perspectives that would support a critical analysis of creativity policy; so why Deleuze and Guattari, specifically? I wanted to find a theory that was explicitly concerned with what it means to create, and that would provide a means of challenging the instrumental understandings of creativity which permeate current education policy. My position is that educational research should proceed from a consideration of

pedagogical purposes, principles and values (Drew et al 2016). A conclusion I reached after the initial literature review was that longer-term, education theory-informed approaches to creativity are required, rather than short-term, business-theory derived interventions (Russell 2015). I wanted to articulate the case for an ethical (May and Semetsky 2008) or creative moral (Munday 2016) education that is rooted in the specific context of Scottish state education, yet at the same time is orientated towards that which is different and other.

I explored various theoretical options, including critical theory and the work of Spivak, Derrida and Biesta. One potential avenue was Spivak's four propositions for an aesthetic education; namely, learning to see privilege as loss; understanding education as an "un-coercive re-arrangement of desires"; de-transcendentalising religion and nation; and learning (to play) the double bind of ethics and politics (Andreotti 2014, p.104). Other concepts which seemed promising included Derrida's disruptive *arrivant* (Attridge 2001) and Biesta's (2017) theory of education and subjectivity, or "grown-up-ness" as a way of existing in the world. I had previously encountered Walter Benjamin and Theodor W Adorno's writings on art, authenticity and the mimetic, and these also seemed appropriate. I was particularly drawn to Benjamin's concepts of the constellation, the monad, the caesura, and the polytechnical or eclectic engineer (Gilloch 2002). These ideas supported an analysis of the relationship between marketing, advertising and the creativity agenda as a policy fashion that utilises a jargon of authenticity (Adorno 1973). For example, Gibson (2010) uses a critical theory to argue that contemporary notions of creativity are instances of instrumental reason, arguing that it has become nothing more than novelty and efficiency, and is disconnected from consideration of values such as justice, fairness or sustainability. He proposes a non-heroic term, "creatine"[1] (p.157), to describe commercial creativity and differentiate it from meaningful creative endeavours.

I attempted to weave these disparate influences into a theory of many different parts, but it risked becoming something of a Frankenstein's monster, echoing the cautionary note expressed by Wilson (2016) regarding her theoretical constructions. To avoid becoming lost in confusions and to ensure that the project had internal consistency, I needed to decide on a coherent theoretical approach and an ontologically compatible methodology.

[1] "It resonates with creativity, but is actually a constituent of urine" (Gibson 2010, p.157).

Foucauldian critical discourse analysis is concerned with identifying the workings of power through text and is particularly useful for analysing policy narratives. Since the research design proposed analysing policy documents, assessment frameworks and guidance in relation to creativity and assessment, this would have been a relevant approach. However, I wanted to focus not only on texts, but also on images, presentations, social media and website content, and materials such as artefacts created for assessment purposes. At the start of the project, I attended several conferences on creativity in education and was struck by the apocalyptic imagery that featured in the presentations. I was also fascinated by the way that creativity was constructed as a group activity, and the impact all of this had on delegates. This suggested the need for a methodology which reached beyond text and had a greater focus on the material and the relational.

Further, I had used Foucauldian theory for my Master's dissertation, and I wanted to move on from this, agreeing with Watson's (2010, p.93) contention that education policy and practice in Scotland is undergoing a change from:

> a predominantly 'disciplinary' society as set out by Michel Foucault towards the 'control society' as elaborated by Gilles Deleuze —a society which does not operate through confinement but continuous control.

Hence, Deleuze and Guattari's analysis of control society seemed more suited to analysing the networked, global and corporate nature of education under contemporary capitalism than Foucault's concept of disciplinary society.

I considered the possibility of using post-qualitative or new materialist methodologies that are influenced by Deleuze and Guattari's philosophy (e.g. Lather and St Pierre 2013). While there are differences in approach, these methodologies all aim to challenge the edifices on which traditional qualitative research paradigms are founded, which is a position that appealed to me. However, as a becoming-researcher, it was difficult to envisage how a post-qualitative or new materialist approach might be applied to the empirical study, since they deliberately do not offer guidelines to be followed.

This issue was discussed at my institution's research conference for doctoral students, in which situational analysis was proposed as a solution to these practical difficulties (Ruck 2019). Situational analysis involves mapping, which is influenced by Deleuze and Guattari's concept of

the rhizome (1988/2017). This seemed compatible with the theoretical orientation I was learning towards. Arguably, however, situational analysis is essentially driven by the same coding procedures as the traditional approaches it seeks to challenge (Ruck 2019). My engagement with Deleuze and Guattari suggested that the rhizome is precisely not about "plotting points or fixing an order" (Lorraine 2010a, p. 208).

In response to these issues, I decided to focus exclusively on Deleuze and Guattari. Not only is their approach inherently innovative (de Assis 2015), but the question of what it means to create is at the heart of their philosophy (Pope 2005). To Deleuze and Guattari, "all creative thought calls for a new people and a new earth" (Roffe 2010, p.298); as such, creativity can hardly be more important, since it is about the potential for producing new ways of being, both for humans and the world they exist in:

> Our ability to resist control, or our submission to it, has to be assessed at the level of our every move. We need both creativity and a people (Deleuze 1995, p.176)

This raised a key question for the research: if creating things is part of what it is to be human, does a commercialised interpretation of creativity constrain our potential as humans — as the "people-to-come" (Carlin and Wallin 2014)?

The decision to use Deleuze and Guattari does not mean that the other theories I initially engaged with were entirely abandoned. For instance, my use of the term caesura to describe the concept of interruption attests to the continuing influence of Benjamin's ideas. Building out of an eclectic range of fragments, as in Benjamin's concept of the polytechnical engineer, resonated with MacLure's (2013a, p.180) "unholy mixture", a Deleuze and Guattari-inspired concept. Derrida's *arrivant* as revenant finds an echo in Barseghian and Kristensen (2017), who connect the idea of the ghost to Deleuze and Guattari's concept of rhythm in order to explore subjectivity and place.

A particular affordance provided by Deleuze and Guattari is that they developed their own methodology, schizoanalysis. However, I needed to understand how schizoanalysis could be adapted for educational research generally, and for this topic specifically. I was inspired by schizoanalytic (Savat and Thompson 2015), nomadic (Cole 2013, 2016; Semetsky 2008) and rhizomatic (Honan 2001) methodologies. My reading of Deleuze and Guattari suggested that it would be appropriate to adapt methodologies to reflect the characteristics of this project. Hence,

I developed a nomadic schizo-methodology with particular reference to Deleuze and Guattari's concepts of desire, control society, the rhizome, and the refrain or *ritournelle*. Their notion of machinic assemblage, in the form of the desiring-machine and the war-machine, is also a key image of thought.

More than anything, however, Deleuze and Guattari resonated with me and with this project because their approach is productive and not only critical, as their emphasis on energy, active joy and the affirmative attests (O'Sullivan 2006). In this perspective, joyful and desiring encounters increase our ability to act and bring about change in the world. O'Sullivan (2010) argues that "the key factor preventing these transformations… is habit. Here 'habit' is taken to mean not just our daily routines but also our dominant refrains and typical reactions to the world" (p.277). Active joy and the aesthetic can rupture these habitual responses. This influenced how I began to see the research itself: the design, theory, methodology and analysis needed to work together to create productive, desiring encounters, as well as challenging the dominant policy notion of creativity as a habit of mind.

My engagement with Deleuze and Guattari's philosophy is an ongoing journey. Their theories are not easy to grasp, and my initial encounters with the primary sources were not overly encouraging. It was heartening to learn that I was not alone in this reaction. For example, Bryant (2020) refers to Deleuze's *Difference and Repetition* as "an infernal book" (p.5) and claims he does not fully understand it, despite having spent over two decades studying it. Having engaged with others' interpretations of their philosophy in the context of education theory and research (e.g. Buchanan 2015; Cole 2016; Colebrook 2008), I returned to the original works and found that I was now better able to appreciate how these theories might be applied to the research project. Even if the way in which this was undertaken was imperfect, I hope that the analysis presented here, and the pedagogical principles I created, succeed in provoking thought. I, too, have been provoked by my engagement with Deleuze and Guattari's ideas. Not only did they inspire me to think differently about research and the project itself, but they also reignited a desire to pursue my own creative projects.

I am a sort of conceptual persona in this thesis, in Deleuze and Guattari's sense of a figure who stands outside of time and who helps explain the role of a philosophy that "acts on the present, and therefore against it, for the benefit of a time to come" (Roffe 2010, p.298). The conceptual persona's purpose is to imbue concepts with life and try and make them comprehensible and

relevant; to create moments of clarity out of the chaos and produce meaning while still retaining a sense of intensity and energy, or "give consistency to chaos whilst retaining its speed and productivity" (Toscano 2010, p.48). Deleuze understood the conceptual personae as helping philosophers to:

> negotiate and establish a new image of thought…The conceptual persona functions something like the detective in crime fiction. He is the everyman who must orientate himself within the image of thought (Marks 2010, p.285)

There are several conceptual personae who inhabit the plane of the thesis and guide the reader through it. The first is Denys l'Auxerrois. Between 1899 and 1902, the artist Phoebe Anna Traquair created a series of tapestries, *The Progress of a Soul*. These depict the journey of the human soul, represented by Denys, a character from a short story by Walter Pater (1887). In Pater's story, Denys is an incarnation of Dionysus in exile in the south of France. The four panels from *The Progress of a Soul* — The Entrance, The Stress, The Despair, and The Victory — provide a framing device for the thesis. These stages describe the changing nature of the research journey itself, but they also speak to the processes of teaching and learning, and of creative endeavours. We proceed with good hope, only to find ourselves entangled and attacked from many sides. We are pulled apart but are then transformed into something new. Denys is, in my view, a Dionysus-Apollo hybrid. In Traquair's panels, the vine leaves and grapes that surround and entwine Denys are symbols of Dionysus, but he also carries a lyre, which is an attribute of Apollo. Denys thus represents the dance of the Dionysian-Apollonian, a the spirit or essence of the nomadic, creative pedagogy I advocate. Apollo's restraint and Dionysus's transformative ecstasy are necessary for creative processes to "become".

Another conceptual persona who features in the thesis, and who we have already briefly met, is Alice from Lewis Carroll's Wonderland books. During my initial exploration into the territory of contemporary education, I found myself as bemused as Alice. Creativity is a topic in which there is a risk of finding oneself getting bogged down, or lost. As discussed above, Deleuze and Guattari's theory also involves dangers, since the language can be obfuscating. I would argue, however, that this is outweighed by what Deleuze and Guattari offer in terms of approaching the topic anew, as well as of rethinking theory and research methodology itself. Through the analysis and the seven pedagogical principles I develop, I hopefully emerge as less of a perplexed Alice, and more of a guide.

Overview and structure of the thesis

The structure of the thesis involves both conventional and slightly more unusual features. Chapter two proceeds in traditional fashion with a review of the literature. However, this is presented in plateaus. A plateau is a concept used by Deleuze and Guattari to convey a crucial moment of heightened tensions; a critical juncture where phenomena intertwine and reach a "pitch of intensity" (Massumi 2017, p.xii). The purpose of the plateaus in chapter two is to bring attention to significant events in the construction of creativity. By this, I mean the education policy construction of creativity, and the various strands of thought that can be identified within this ensemble. This is not all there is to say about what it means to create; my focus is on the development of dominant policy beliefs about creativity as a workplace skill; as something connected to nature, youth and play; or as a measurable capacity. Chapter six also contains plateaus; in this instance, these are points in the fieldwork where intensities build up to a crescendo. These are moments of clarity, excitement, frustration or misunderstanding. The thesis also features four high or overarching plateaus; these are the stages of Traquair's *Progress of a Soul,* representing key stages of the research process itself: the entrance (where the context, research questions and theorical orientations are set out); the stress and the despair (where problems arise, tensions build, and the data is puzzled over); and finally the potential victory (in which hope returns and possible ways out are envisaged).

The plateaus are intended to be an active way of seeing and understanding; a means of perceiving existence as a dynamic field of interconnection. The aim is to convey a sense of encounters in thought or in the research process which spark and produce change, leading to the forming of new connections, like the functioning of the brain (Deleuze and Guattari 2017, p. 23). Plateaus are an experiment in an intensive approach to thinking about problems (Adkins 2015), and the hope is that they help the reader think differently about the relationship between creativity and assessment, and about issues in contemporary education more generally.

In chapter three, the theoretical resources used in the study are explained in greater depth, with a specific focus on the concepts of desire and the desiring-machine; nomadology and the war-machine; control society; and the rhizome and the *ritournelle*. The ontological orientation of the study, which is immanent, relational, material and empirical, is discussed. The fourth chapter explains the various rhizomatic twists and turns in the research design, and outlines the processes involved in identifying and recruiting the participants. It provides contextual information about the schools involved in the study and their contexts, and addresses ethical

matters. This chapter also sets out the methodological ensemble, a nomadic schizo-methodology inspired by various nomadic, rhizoanalytic and assemblage approaches to education research, and by Guattari's schizoanalytic cartography in particular.

The fifth chapter can be thought of as a bridge, since it links the issues arising from the literature review to the data analysis and findings presented in chapter six. This chapter considers how creativity is, and has been, constructed in Scottish education, and considers the implications of this for the study. My concept of the "creativity war-machine" is a key contribution, and in this chapter, it is used to produce case studies of the emergent OECD PISA creativity test, along with examples of how "edu-business" (Hogan 2016) is advancing the creativity agenda.

The sixth chapter weaves the findings and discussion together, presenting the data in "tangled tales" or a series of vignettes and fragmented extracts which delve straight into the midst of the discussions with the participants. This is designed to resonate with Deleuze and Guattari's notion of the rhizome as being "in the middle", with no clear start or end point. This engenders a way of thinking about and describing creativity, assessment, education and the research itself as a form of imminent production (Herzogenrath 2009).

Finally, the seventh chapter provides a pause in which to summarise the thesis and to discuss the potential for escape from dominant ways of thinking about creativity and its assessment. It weaves the research tendrils into a nomadic, creative pedagogy informed by seven principles: pickaxe/torch, desire, guide, caesura, provocation, continuance and map/trace. This chapter also reflects on the limitations of the study, particularly the impact of the coronavirus pandemic on the research, and offers some practical policy recommendations.

The following chapter moves on from these introductory matters and addresses the issues arising from the literature review. In *The Entrance,* the first panel of Traquair's *The Progress of a Soul*, Denys l'Auxerrois is depicted as being "in harmony with the rich pattern of the natural world around him… he is full of hope and enthusiasm, blissfully ignorant of life's realities"[2] (National Galleries of Scotland, n.d.). Similarly, we now move on from the early stages of the project, characterised by optimism and enthusiasm, and enter into the knotted world of the literature on creativity and assessment.

[2]National Galleries of Scotland. Phoebe Anna Traquair. Available: https://www.nationalgalleries.org/ar-artists/features/phoebe-anna-traquair [Accessed: 25 May 2020]

Chapter 2: Defining and desiring creativity

Introduction

This chapter discusses how the creativity-assessment relationship has been theorised, and surfaces the notions that have particular intensity in current education policy. To navigate the vast and difficult terrain of relevant literature, the chapter features plateaus. They have dates which represent significant moments in the construction of creativity as an education policy concept. The plateaus are not presented in a linear timeline, and could be placed in any order. Within each plateau, various rhizomatic knots are identified. These are key tensions arising in the plateaus, and which recur throughout the thesis in the manner of a *ritournelle* (Deleuze and Guattari 1988/2017). The concept of the rhizomatic knot derives from de Freitas's (2012) use of knot theory as a means of understanding entangled relations. Here, the knot is used to illuminate the ways in which policy desiring-productions cross over each other, resulting in constrictions that inhibit the movement of thought (ibid.). The meaning of plateau, desiring-production and rhizomatic knots are briefly discussed below.

The review begins by exploring the thorny issue of how creativity is defined. It then considers important developments in politics, the arts and science which have shaped the contemporary understanding of creativity. These events help to explain why assessing creativity has become such an insistent demand. The chapter concludes by noting silences in the literature, before discussing recent attempts to move towards a definition of creativity that is more compatible with an expansive yet also social and value-orientated way of thinking.

Note on the terminology

This chapter features plateaus with specific dates and titles. These refer to significant events in the construction of creativity as an education policy concept. Specifically, these are developments in politics, science and the arts which produced change in thought and action. For Deleuze and Guattari, plateaus are moments of heightened intensities, and these occur when energies interact, tensions reach a peak, and factors combine and crystallise so that something manifests in its "purest incarnation" (Deleuze and Guattari 2017, p.23). Constructing plateaus helped me to develop analytical questions, such as: what is this phenomenon? What is it "doing"? What connections does it make possible, and what possibilities does it shut down? (Adkins 2015, p,14). And crucially, what desires become visible here? Each plateau involves a

pause to consider the problems that have arisen within the plateau; these are posed as analytical questions that are important for the research project as a whole.

The term desiring-production (Deleuze and Guattari 1983) is used to describe ideas, beliefs and practices that are generated in and through policy desiring-machines, or *agencement machiniques* (literally, machinic arrangements), in relation to creativity and assessment. Desiring-machines and their productions involve:

> complex constellations of objects, bodies, expressions, qualities, and territories that come together for varying periods of time to ideally create new ways of functioning. Assemblages… are productive and have function; desire is the circulating energy that produces connections (Livesey 2010, p. 18).

Policy desiring-productions have power and affect, since they produce change within the territory of education. They influence what happens in schools, in classrooms, and the work students create. They shape the beliefs teachers and students have about the world and about themselves. In Deleuze and Guattari's thought, desire is the fundamental energy that generates change in the world (Surin 2010, p. 155). The aim in the thesis is to understand the nature of the creativity agenda's desires and how these are being heavily promoted and driven forward with speed and intensity by influential organisations and key individuals.

Plateaus also involve an understanding of the concept of the rhizome, since plateaus are peaks of intensity that arise within rhizomes. Rhizome is a botanical term which describes a form of growth through multiplication, involving cloning or lateral spreading (Hodgson and Standish 2006). They do not have a centre or a clear beginning or end point, and they continually send out new shoots, always seeking to connect (Gregoriou 2004). A rhizome is a form of organisation and movement, but is more complex than this, as it also refers to a way of thinking and being that is horizontal and non-hierarchical. As a theoretical concept, the purpose of the rhizome is to disrupt closed systems of thought and challenge dominant ways of understanding the world. It involves freeing thought so that it can be creative and dynamic (Stagoll 2010a, p.14). Thus, it is inherently connected with creativity, and it enables me to envisage the territory of education, at the global, local and subjective levels, as inherently interconnected and constantly expanding. The chapter refers to rhizomatic knots (de Freitas 2012), a concept which is helpful for describing the ways in which desiring-productions breakdown and become tangled, stuck, or destructive. The knots are points in a rhizome where "creative connections can be replaced with blockages, strata, 'black holes', or 'lines of death'" (Lorraine 2010a, p.209).

Rhizomatic knots can refer to blockages which arise from the build-up of constraining ideas, or strata, over time. Knots can also occur when contradictory ideas become matted together, resulting in stalemate and stagnation as thought is impeded from moving. This produces an environment that is not conducive to creativity (Lorraine 2010a).

Defining creativity

To begin with the fundamental question of "what is creativity?" is to find oneself lost in the midst of a dark wood. Defining creativity has been described as "the mythical albatross around the neck" of creativity research (Prentky 2001, p.97), since it is a nebulous and slippery concept which eludes and defies definition (Zipf 2016; Chan 2013). Attempts to wrestle order from the chaos have provoked frustrated responses: Baer and Kaufman, two prominent creativity researchers, described their efforts to summarise the literature as "overwhelming" (2006, p.11), while Steers (2013) observes that "creativity is hard to define in any context… it is possible to take one's pick of hundreds of definitions" (p.165). Creativity experts Hennessey and Amabile spent almost two years completing a literature review (2010), an endeavour which was subsequently described by Hennessey as "near impossible" (2017, p.342). They concluded that the field was impossibly fragmented, resulting in an overall failure to address significant, overarching questions (Hennessey and Amabile 2010).

The terminology is constantly shifting, as is attested by Lucas and Venckute's (2020) recent review of global and local education policy documents. They produced an extremely lengthy list of all the policy terms identified as being synonymous with creativity (pp.7-9):

- Ability
- Attitude
- Attribute
- Capability
- Capacity
- Character
- Cognitive skill
- Competence/competency
- Core skill
- Disposition
- Habit of mind
- Key competency/skill
- Knowledge
- Life skills
- Meta-skill
- Non-cognitive skill

- Skill
- Soft skill
- Trait
- Transformative competency
- Transferable skill
- Transversal skill
- 21st-century skill

To steer a path through these complexities, some authors have organised the literature into themes. For instance, Banaji et al. (2010) constructed ten rhetorics of creativity. However, the rhetorics overlap each other, making the divisions hazy. Others have constructed myths about what creativity is mistakenly perceived to be (Sharp 2004; Sawyer 2011), which could be critiqued as overly directive.

My approach is to understand definitions of creativity as desiring-productions (Deleuze and Guattari 1983). I maintain a focus on what the different notions are "doing" and what they desire (Savat and Thompson 2015). The definition of creativity always matters, since assumptions regarding the learning, teaching and assessment of creativity flow from the definitions. It is important to note that I regard notions of creativity as multiple and intertwined, and hence they should be understood in relation to each other. Where this differs from Banaji et al.'s (2010) approach is that I acknowledge complexity and blurriness by exploring creativity through plateaus rather than creating a taxonomy of apparently discrete types of creativity.

In the beginning

How long has "creativity" been with us? Perhaps surprisingly, only since the early twentieth century. Kristeller (1983) identifies the term as first appearing in dictionaries in 1934, and suggests that it originates with Alfred North Whitehead, who used it in *Religion in the Making* (1927) and in *Process and Reality* (1929). However, the idea of what it means "to create" has a much longer history, reaching back to theological, artistic, and humanist understandings (ibid.). Although there is no space here to consider these conceptualisations in depth, I will note the ways in which historical notions of what it means to create continue to play out in contemporary *ensembles* of creativity.

4 October 1957: Sputnik

This plateau explores how creativity became a cognitive thinking skill, or part of a suite of such skills. First, however, we need to consider the historical context. Current beliefs about the

importance of promoting creativity in and through education, and the necessity of measuring creativity in some way, can be traced back to the Cold War era and the success of the Soviet Union's Sputnik space programme (Chan 2013; Shaheen 2010). The "failure" of the West was attributed to a lack of creativity in its public education systems, a concern which was specifically addressed by the US National Defense Education Act (1958). The Act stated that new techniques and knowledge were essential for the survival of the nation, specifying science, mathematics, modern languages and training in technology as priority areas. Further US policy developments aimed at promoting creativity included the National Science Foundation's reform of science education (Chan 2013). This context provides insight as to why education policy has tended to construct creativity in terms of scientific, technological and mathematical innovation, rather than the arts.

However, creativity's ideological potential was identified prior to the success of Sputnik. The ex-US military psychologist JP Guilford delivered an address to the American Psychological Association (APA) in which he argued that creativity was essential to the "mortal struggle for the survival of our way of life" (Guilford 1950; cited in Pope 2005, p.19). The importance of creativity to the social, economic and cultural development of the nation has strong echoes in contemporary Scottish education policy, as discussed in chapter five.

Cogs

Over the course of the twentieth century, creativity was primarily defined and researched as a psychological concept, and psychology continues to have a strong influence on how creativity is understood (Chan 2013). In part, this derives from psychology's claims to be able to capture and measure creativity. Following his speech to the APA, Guilford developed the Structure of the Intellect Learning Abilities Test (Guilford 1950, 1967). The test was premised on the assumption that divergent thinking is a key aspect of creativity. Divergent thinking refers to the number and variety of answers that an individual produces in response to a question or task (Baer 2011). A traditional divergent-thinking assessment poses questions such as "how many uses for a brick can you think of?" The more answers that are given, and the more these are deemed to vary from a predictable, or convergent, response, the more a person is assumed to be creative.

Another influential contribution from the domain of cognitive psychology was that of E. Paul Torrance, who devised the Torrance Tests of Creative Thinking to assess divergent thinking in

both verbal and nonverbal manifestations (Torrance 1962). Other significant, and again predominantly US-based, cognitive theorists of creativity include Osborn (1953); Taylor and Holland (1962); Barron (1958) and Getzels and Jackson (1962). A range of tests and measures of divergent thinking have been developed over the decades, including the Creativity Assessment Packet (Williams 1980) and the Creative Quotient test (Snyder et al. 2004).

All of this brings us to a rhizomatic knot. Models such as Guilford's, Torrance's and Osborn's are not assessing creative endeavour, but rather, creative potential, which may never be realised. The underlying theoretical assumption that divergent thinking and novelty equate to creativity has been critiqued, for example by Runco and Acar (2012):

> Divergent thinking often leads to originality, and originality is the central feature of creativity, but someone can do well on a test of divergent thinking and never actually perform in a creative fashion…. [Tests are] indicators of creative talent. What exactly is an indicator? It is a kind of predictor; and any time a prediction is made, there is some uncertainty (p.66).

More recently, cognitive assessments of creativity have placed greater emphasis on convergent and evaluative thinking, and not just divergence. Guilford's original theory proposed that divergent thinking was in fact a complex process requiring fluidity, flexibility and elaboration, as well as originality (Genovard et al. 2006). This has been developed by Lubart and Thornhill-Miller (2019), who incorporate evaluative and convergent aspects into their model. Evaluative thinking refers to an analytic mode in which strengths and weaknesses are assessed, which then helps to steer future action. Convergence is also important in creative thought, as it involves the ability to effectively synthesise disparate ideas into a coherent response (ibid.).

While models such as Lubart and Thornhill-Miller's (2019) represent a more nuanced approach to assessing creative processes, nevertheless, Runco and Acar's (2012) point remains: the rhizomatic knot produced here is that such tests are oriented towards an unrealised future, and do not constitute an assessment of an individual's actual creative processes and achievements (Piffer 2012).

CATs

One approach which does focus on creative production is Amabile et al.'s consensual assessment technique (CAT) (1996), which has been described as the "gold standard" of creativity assessment (Carson 2006; cited in Baer 2015, p.171). Rather than testing for

cognitive abilities, it involves the assessment of an artefact, performance or other creative output by a panel of experts.

The CAT is based on the assumption that judgements about creativity require expert knowledge and cannot be assessed by applying a rubric. Consensual assessment has been adapted for use with a wide range of research participants, from primary school students to adult employees. There is evidence of a high level of intercoder reliability among panel members (Hennessey et al. 2011).

However, Amabile's research is limited to experimental settings, and a criticism of the CAT model is that it is difficult to implement in the "real world", since it involves recruiting a group of experts. Further, consensual assessment does not assess the totality of individuals' creative achievements, as it only considers one output (Piffer 2012).

An important aspect of Amabile's (1996) theory is that it emphasises the role of intrinsic motivation in creative production, contending that those who are driven by enjoyment and desire tend to be more creative than those motivated by money, praise, or grades. This folds into Rousseau's views about education and self-fulfilment, discussed below, which in turn influenced Romantic movement beliefs about self-determination. These ideas continue to influence theories about the importance of motivation in creativity (Banaji et al. 2010; Hennessey 2017).

Here we find another rhizomatic knot: if it follows that creativity flourishes when students are motivated by desire rather than by exam results, is it logical to try and make high-stakes assessment "more creative"?

1997: "New" Creativity

The drive to increase creativity in and through Scottish education needs to be understood as part of wider political and cultural developments within the UK as a whole. The Demos policy document *The Creative Age* (Seltzer and Bentley 1999), produced during the New Labour era, conceptualises creativity as inherently democratic, as is the knowledge economy itself:

> The knowledge economy carries a powerful democratic impulse. Rewards must flow to talent, creativity and intelligence; not to birthright.
>
> (Leadbeater 2000, p.224).

In this narrative, creativity is not an innate ability but is something that can be learned (Seltzer and Bentley 1999). Further, it is characterised by problem-solving, knowledge transfer, incremental learning and goal-oriented work (ibid.). These notions derive from business self-help manuals (Pope 2005) and as such this is an understanding of creativity that belongs to the domain of business studies, and to entrepreneurship specifically (ibid.).

Buckingham and Jones (2001) critique this construction, arguing that it associates creativity with flexibility, self-discipline and self-reliance, and conceals the realities of job insecurity, low pay and the erosion of workers' rights. This produces a rhizomatic knot: although the neoliberal construction of creativity emphasises individual potential and merit, it is designed to serve the interests of management, and as such, it is ultimately incompatible with notions of freedom and justice (ibid.).

1790: Critique of Judgement

This plateau discusses alternatives to the economic and individualised notions of creativity discussed above. It looks at constructions of creativity that relate to freedom and equality. Specifically, it addresses the question of whether everyone is creative, and what this implies for education.

Big C, little c

The belief that everyone is, or has the potential to be, creative is the core idea in the highly influential "Big C/little c" theory of creativity. Underpinned by beliefs about democracy, the Big C/little c discourse can be identified throughout Scottish education policy and resources[3].

Anna Craft (2000) is often associated with this theory, as she popularised it in the context of educational research. However, it originally derives from Howard Gardner's (1993) research. Gardner's aim was to develop a more democratic understanding of creativity which emphasises the equal value and contribution of different types of intelligences.

Creativity is central to Gardner's thinking. He derived his socio-historical methodological approach from Gruber's study of the life of Darwin (Gardner 1993), and developed this through

[3] For example, Professor Boyd's video on creativity, a teaching resource on the Education Scotland National Improvement Hub site, discusses "little c" theory. This is explored in A View From Here (chapter 5).

an analysis of the diaries and autobiographies of world-renowned geniuses such as Freud, Einstein and Picasso.

The notion of the creative genius can be traced back to the Renaissance, with the idea coming to prominence in the Enlightenment and having a significant influence on some stands of Romantic-era thought (Pope 2005; Banaji et al. 2010). Kristeller (1990) describes the development of the creative genius idea as follows:

> [f]or the first time, the term "creative" was applied not only to God but also to the human artist… The artist was guided no longer by reason or by rules but by feeling and sentiment, intuition and imagination; he produced what was novel and original (p.250).

The Enlightenment understanding of creative genius is expressed in Kant's *Critique of Judgment* (1790). Kant defines genius as a mental ability associated with the production of fine art, which requires originality. The idea of creativity as that which is novel continues to have a strong influence on contemporary views about creativity. Kant argues that creativity is an innate talent, and as such it is not something that can be learnt. Echoes of this understanding of creative genius linger in popular understandings of creativity, as well as in what Banaji et al (2010) term the "'traditionalist' academic view" (p.15).

"Big C/little c" theory is based on the assumption that although everyone possesses the capacity for creativity, most people will only ever experience "little" creativity, with an elite few achieving "Big C" or genius status. Hence, the focus should be on promoting "little c" creativity, which is pragmatic and everyday (Kaufman and Beghetto 2009). Proponents of "little c" argue that it helps redress misconceptions that creativity is the reserve of geniuses, and that a focus on everyday creativity celebrates the role it can play in schools, workplaces, and the home (ibid.).

Kaufman and Beghetto have expanded the theory into a "Four c" model by proposing the existence of "mini c" and "pro c". Mini c refers to creativity that is meaningful to the individual but not to a wider audience; for example, children's creative efforts would fall into this category (2009, p.3). Pro c is professional creativity, which might be highly accomplished, but cannot be considered unique or innovative.

Csikszentmihalyi's (1999) Systems Model of Creativity is also predicated on the Big C/little c theory, but interprets it differently from Gardner. Csikszentmihalyi defines little c as that which operates at the personal level, whereas Big C functions at the societal level. In this model, creativity arises through an interplay between the domain, the field, and the person. The field includes gatekeepers such as teachers and critics. The individual produces a form of creativity that the field accepts, and which then becomes incorporated into the domain.

Critics of Big C/little c have argued that the idea of ubiquitous, everyday creativity is incompatible with an understanding of creativity as something that brings a special and potentially transformative quality to life (Banaji et al. 2010). Further, the theory severs the traditional connection between creativity and the arts, which Rowlands (2011) argues is problematic, since separating creativity from domain knowledge underestimates children's potential with regards to learning the disciplines, and in turn, this may limit their creative abilities. The rhizomatic knot in this instance is that, ironically for a theory which was originally concerned with democracy and equality, Big C/little c is rather narrow and limiting, in that it suggests that most people will never be Big and can only aspire to be little.

From a sociological perspective, Big C/little c can be critiqued for underplaying the importance of social, cultural, political and economic contexts. For example, Bourdieu (1969) conceptualises creativity as an act of communication that takes place within a system of social relations. While more nuanced versions of Big C/little c do take external factors into consideration, popular understandings often provide an overly individualised account.

1789: Songs of Innocence and of Experience

This plateau discusses theories of creativity that emphasise early childhood and the importance of play and imagination. It then moves on to consider contributions from cultural psychology which provide an alternative to the dominant cognitive psychological constructions of creativity.

Playing at creativity

Banaji et al (2010) argue that contemporary pedagogical theories about play and creativity can be traced to Rousseau and some strands of Romantic thought. In *Emile* (1762), Rousseau proposes that play is essential for children's development into rational and ethical members of society. In this perspective, all humans possess individual talents and interests which must be fostered if they are to achieve self-fulfilment. The freedom to imagine and to pursue impulses

and fantasies are essential aspects of this process. Since creativity is about spontaneity, education should avoid regulations, as this restricts the individual's ability to innovate. Hence, Rousseau advocated forms of education that support imagination and improvisation, and critiqued the traditional view of students as passive recipients of information.

The *bildung* tradition subsequently developed the idea that creativity and play are important aspects of children's education (Løvlie et al. 2003). However, contemporary notions about children as creative beings who are cultivated through play owes much to the work of Froebel, the founder of the kindergarten movement (Nelson 2014). Froebel was interested in what he saw as the natural instinct of the child to play and designed a pedagogy that aimed to foster these instincts (ibid.).

Evidence from cognitive psychology is often cited to lend validity to alternative, play-based pedagogical approaches. For example, Russ (2003) contends that play "fosters the development of cognitive and affective processes that are important in the creative act" (ibid., p. 291). Assumptions about play, creativity and cognitive development can be identified in Scottish Government policy narratives:

> There is… evidence to show that play in early childhood can influence the way your child's brain develops, helping to coordinate their mental and physical capabilities. Through play, children and young people of all ages develop problem-solving skills, imagination and creativity[4] (Scottish Government, 2021)

This perspective underpins beliefs about the connection between childhood play and adult creativity. For example, Carruthers (2002) contends that "essentially the same cognitive resources are shared by adult creative thinking and problem solving on the one hand, and by childhood pretend play, on the other – namely, the ability to suppose, or create imagined possibilities" (p.225).

Here, the rhizomatic knot is as follows: if childhood play is important to the development of the imagination in later life, is it logical to insist that children imitate adult problem-solving processes, as is emphasised in globalised educational policies in relation to creativity (Banaji et al 2010)?

[4] Available: https://education.gov.scot/parentzone/learning-at-home/learning-through-play/ [Accessed 2 February 2021]

Imagination and illusion

In contrast to “little c” notions of everyday creativity, cultural psychology emphasises the transformative nature of creativity. Vygotsky’s essay on play (1978) proposes that learning is dependent on context and culture. In this theory, play is an essential stepping-stone to creativity. However, play is not the same as creativity. Vygotsky’s argument is that adolescents’ creative work has a different purpose from adults’ creativity. Although creativity plays a crucial role in enabling adolescents to process emotions and develop their imagination, it is not equivalent to adults’ creativity:

> [T]he imagination develops like everything else and is fully mature only in the adult. This is why products of true creative imagination in all areas of creativity belong only to those who have achieved maturity (Vygotsky 1991, p.32)

Since young people’s emotions are inherently bound up with their attempts at creativity (ibid.), it can be argued that it is problematic to subject these creative efforts to external assessment.

More recently, research on play and freedom has emphasised the role played by excitement, wonder and the unexpected. In this discourse, creativity is connected to enchantment and the child becoming spellbound through a strange meeting with the new and disconcerting (Bennett 2001).

These alternative traditions provide a way of challenging dominant cognitive psychology-based constructions of creativity as something that can and should be measured. However, the rhizomatic knot here is whether it is possible to be truly imaginative when capitalism captures our imagination from an early age (jagodzinksi 2013). In other words, is the freedom to imagine anything more than an illusion? One potential line of flight may be the development of ideas from the radical Romantic tradition. For instance, Banaji et al (2010) identify a connection between political creativity and Blake’s understanding of children as agents of revolutionary imagination. This will be explored through my concept of the teacher-student desiring-machine which has the potential to engage in war-machine mode, discussed in chapter seven.

The affective/effective learner

> The affective learner is an effective learner (Cremin and Chappell 2018, n.p.)

Another discourse prevalent in contemporary research and education policy is that creativity promotes children's wellbeing. In this perspective, wellbeing is regarded as essential to educational achievement. Creativity contributes to better educational outcomes because an "affective" child is a more "effective" learner (Trowsdale 2018). This narrative is linked to theories about education's role in shaping the possible selves we can become, and specifically, the production of good, active and successful citizens (Claxton and Carr 2004).

These beliefs regarding creativity, wellbeing and educational outcomes can be understood more clearly in the context of new curricular models (Priestley and Biesta 2013). New curricula are characterised by an adoption of progressive educational language and a shift from content-based delivery to dispositions-based and learner-centred approaches (ibid.), which are assumed to be more democratic than conventional approaches. The conceptualisation of creativity as a disposition, or a set of dispositions (Lucas 2016) reflects and is situated within these new curricular forms.

The notion that education should aim to improve the emotional wellbeing of citizens has become something of an orthodoxy. This is discussed by Ecclestone (2013) in relation to the "confident individual" capacity, one of the four capacities in Scotland's Curriculum for Excellence. Confidence and resilience are often assumed to be associated with creativity. Hence, more creativity in education is desirable as it boosts self-esteem, which in turn will make students more creative. Paradoxically, however, lower levels of self-confidence may predict higher levels of creativity (Kaufman 2002). The implication is that doubt and self-questioning may be important in creative processes.

In critiques of contemporary school education, creativity is often presented as a panacea for the worst effects of performativity (Munday 2014). However, the extent to which creativity can fulfil this role is constrained, particularly if the understanding of performativity is primarily defined in relation to testing, statistics and bureaucracy, rather than being indicative of a wider cultural shift. Lyotard (1984) describes this as the postmodern condition, in which Enlightenment values such as truth and progress are replaced by the principle of effectiveness. Reflecting this trend, creativity has been reconstructed as a policy solution aligned to narratives about "what works" (Hayward et al 2004). The danger with this construction is that creativity becomes little more than "a more glamorous and appealing synonym for 'effective'" (Banaji et al 2010, p.44).

2022: Centres of calculation

This plateau explores how creativity has become a desiring-production of the globalised education policy movement, which provides context to the OECD's intention to introduce an assessment of creativity in the forthcoming[5] round of the Programme for International Student Assessment (PISA) (Lucas et al. 2013).

Global/local

Education policy is becoming increasingly homogenous across the world (Held 1995), with the emergence of a global education community comprising policy elites such as the OECD (Henry et al. 1997). This phenomenon has been variously described as a Common World Educational Culture approach (Dale 2001), part of a world polity trend (Meyer et al. 1997) and as a Global Education Reform Movement (Sahlberg 2011). Ozga and Lingard (2007) argue that education policy is now simultaneously local and global, with supra-national policy pressures being translated into the local domain and modified to reflect historical and cultural beliefs about education and society (ibid., p.66).

The OECD's PISA regime is a key aspect of this global education policy trend. PISA's rise has been explained in relation to increasing demands for comparative measures of educational performance. The accountability and auditing agenda emerges from, and reflects, the trend towards evidence-based policy-making, in which "policy as numbers" (Lingard 2011) is what is valued and required. Thus, the OECD has been able to establish its influence through promoting its "centres of calculation" (Latour 1987), namely PISA and the Trends in International Mathematics and Science (TIMSS). These assessments are key elements of the "new technologies of governance" (Ozga and Lingard 2007, p.68). PISA in particular has contributed to the OECD's status as technical experts in measuring educational performance (Sellar and Lingard 2014). This involves making comparisons between nations on the basis of PISA results, and constructing nations as examples of educational success. Finland has frequently been cited as a top-performing education system; more recently, the focus has switched to Singapore, owing to its high score on the 2012 PISA creative problem solving assessment (Sellar and Lingard 2014; Schleicher 2018).

[5] Originally scheduled for 2021 but postponed until at least 2022 due to the coronavirus pandemic.

Human/capital

What are the characteristics of the OECD's beliefs about education? Ozga and Lingard (2007, p.68) discuss this in terms of a policy consensus on human capital, which accompanies globalisation processes. Human capital is defined by the OECD as "the knowledge skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD 2001, p.18). Education is the essential component in human capital theory, since this is the means though which the desired skills and competencies can be developed.

The OECD's perspective also draws on critiques of traditional education, such as Rogers' *Freedom to Learn* (1969). This argued that there was a crisis in public education and that schooling should focus not on teaching, but on "self-directed" learning. In this way, education helps to develop individuals who are open to experience and continual change (ibid.).

Other key aspects of the global education policy agenda include student-centeredness, lifelong learning, and competency-based assessment. It has been argued that these are indicative of a wider ideological trend whereby citizens are urged to empower themselves and accept responsibility for their own life chances (Edwards and Usher 2007). This shift of responsibility from the state to the individual is discussed by Reeves (2013) with regards to the personalisation agenda in education, which involves high levels of self-monitoring. In this analysis, personalisation is a "do-it-yourself" requirement that places the onus for learning on children and young people, not for moral or motivational reasons, but as "a direct and continual engagement in a new form of managerial-clerical work" (ibid., p.60). The supposedly child-centred orientation of personalisation is a key reason behind its appeal to policy makers (Hartley 2007). Although the language of personalisation echoes that of progressive education theories, critics have argued that it does not permit any real challenge to existing power relations (ibid.). Assessment has become a key aspect of this regime of constant monitoring, which continually expands to encompass all aspects of what it is to be human, including creativity and emotions (Reeves 2013).

Competently creative

Competence-based assessment has become a dominant policy trend, and the forthcoming OECD PISA creativity test is also based on competency. What are the implications of assessing creativity in terms of competency?

Deriving from vocational course assessment, the aim of competency is to replace traditional, knowledge-based programmes with approaches in which students demonstrate that they can "do" the tasks required for specific jobs (Wolf 2001). However, there is a paradox in that competency risks descending into the over-prescribed content which it aims to challenge. This occurs because the attempt to create unambiguous, comprehensible outcomes results in the production of ever-more detailed specification and guidance (ibid.). Ultimately, this can generate a suffocatingly bureaucratic approach; a "treadmill of assessment" or "assessowork" (Reeves 2013, p.70). Further, competence-based assessment looks backwards to already-outdated jobs, since competencies are defined on what is required now, meaning that by the time students enter the workplace the competencies refer to that which is past. The risk is that this leaves people without any substantial discipline-based knowledge on which to draw (Wolf 2001).

The popularity of vocational approaches such as competence-based assessment is, Canning (2000) argues, a result of ideologically-motivated neoliberal policy agendas which aimed to reform work-based education by abandoning traditional, union-controlled apprenticeship schemes, thus eroding the political power of unions and universities' and colleges' control of education (ibid.). In relation to the Scottish context, the popularity of outcome-based approaches to education represents the influence of "narrow instrumentalist employer-led standards" (ibid., p.69). Canning contends that although a "bottom-up education led" model was advocated by the then-Scottish Vocational Education Council (SCOTVEC), the "top-down employer-led model" used by the National Council for Vocational Qualifications (NCVQ) in England, which is underpinned by a competency approach, ended up prevailing in Scotland. Vocational models appeal to policy-makers due to their intertwining of behaviourist and humanist discourses. In other words, they are underpinned by behaviourist theories about learning, but adopt the language of progressive, democratic, anti-elitist and autonomous learning (ibid.).

The main critique of the competence model is that it is underpinned by a narrow interpretation of knowledge and understanding, resulting in shallow learning rather than the development of deep, conceptual knowledge. As such, competence produces "the routine and habitual over the

new and innovative" (Canning 2000, p.73). It would seem, then, contradictory to adopt a competency-based approach for fostering creativity in education, if all competency can produce is that which is limited and conventional. However, creativity itself has been reconstructed as "habits", as we shall now discuss.

Domains of dominion

The construction of creativity as a habit, generic disposition or transferable skill is an important aspect of globalised policy drives. As the OECD's Director of Education and Skills explains:

> To do well in PISA, students had to be able to extrapolate from what they knew, think across the boundaries of subject-matter disciplines, and apply their knowledge creatively in novel situations (Schleicher 2018, p.19).

Domain-general constructions of creativity are frequently underpinned by a pro-social, democratic view of creativity's potential. For instance, Plucker (2005) argues that locating creativity within disciplinary silos is limiting and restrictive, whereas the construction of creativity as a generic capacity which applies to all areas of life is liberating, since "the more creativity in society, the better" (2005, p.307).

However, there is considerable evidence to suggest that creativity requires expertise. Baer (2010, 2015), writing from a developmental psychology perspective, draws on a broad range of research evidence to analyse whether there is a correlation between being creative in one domain, and being creative in another. He found low or essentially random correlations among the ratings of artefacts produced by individuals across different domains (Baer 2010). In one study of secondary school students, training in poetry-related thinking exercises was delivered, with students then producing both poems and short stories. The students' work was assessed using Amabile's CAT model. The findings were that the training had no observable effect on the creativity of the short stories, but that the poems were rated as more creative than those of the control group. In other words, training in poetry helped the students produce more creative poems, but did not impact on the other domain (Baer 2012). Baer's analysis suggests that creativity cannot simply be transferred from one discipline to another:

> "Are you creative?" We now know that one cannot answer this question without more information. "Creative doing what?"
>
> (Baer 2015, p.168).

Baer's position on domain-specificity has implications for both the teaching and assessment of creativity, as it suggests that it is not possible to test for generic creativity skills (ibid.). While phrases such as "creative skills" might seem like a useful way of bringing together concepts which appear synonymous, this is misleading, since they refer to "a diverse set of unrelated cognitive processes that operate on different content and in different domains" (Baer 2012, p.16).

Wiliam (2013) argues that creativity is not a skill. A skill is the ability to do a specific task well as the result of practise, training or experience (ibid.). Creativity cannot be described in this way, as it is not a skill akin to riding a bike or swimming (Willingham 2009). Although there may be similarities in creative processes across different disciplines, they are fundamentally different (Wiliam 2013).

This leads us to a particularly large rhizomatic knot; namely, current education policy beliefs that creativity is a skill appear to be founded on unstable ground. However, these narratives have become so ubiquitous that they constitute uncritically accepted "sedative discourses" (Guattari 2000) that seem impossible to challenge and which shut down alternative understandings of creativity.

Inhabiting habits

> The only habit the child should be allowed to contract is that of having no habits.
>
> (Rousseau (1762/2004) *Emile*, p.585).

Recently, the policy language has shifted towards habits, rather than dispositions. The research which informs the forthcoming PISA creativity assessment is underpinned by a five-habit creativity "wheel" developed by Lucas et al. (2013) (fig.3). This derives from Costa and Kallick's (2002) 16 "Habits of Mind", which was in turn inspired by Resnick's *Making America Smarter* (1999). Costa and Kallick's work is located within the grey literature, and is a business model rooted in educational entrepreneurship. Lucas and colleagues distil the 16 habits down into the following five: imaginative, inquisitive, collaborative, persistent and disciplined (Lucas et al. 2013).

The five-habit approach is based on the belief that organising curricula by subjects is “a barrier to the development of real understanding of the subject as it might be encountered in the real world” (Lucas 2016, p.281). In contrast, the habits of mind model describes “what human beings do when they behave intelligently in the real world, habits that might, therefore, be worth learning at school” (ibid.). Although it is claimed that the five-habit model is based on the dispositions that are recognised in the literature as being associated with creativity, Lucas and colleagues acknowledge that the selection was driven by concerns of “useability” and “pragmatic common-sense” (ibid.).

However, research on creativity and personality suggests that the traits most frequently linked to creativity are far more expansive and complex than the five-habit model suggests. The personality traits associated with creativity have been identified as: independent judgement; self-confidence; complexity; aesthetic orientation; tolerance for ambiguity; openness to experience; psychoticism; risk taking; androgyny; perfectionism; persistence; resilience; and self-efficacy (Piirto 2005, Sternberg 2006). Feist’s (1998, p.299) meta-analysis found that the characteristics of creativity include introversion, hostility, dominance and impulsivity, along with more positive traits such as autonomy, self-acceptance and ambition.

Terms such as “psychoticism” and “androgyny” could certainly be deemed problematic. “Psychoticism”, at least, becomes less strange if a historical perspective is taken. Connections between mental illness and creative work have been identified since the 1920s (Ellis 1926). More recent studies have indicated that creative individuals tend to have both higher and lower rates of mental illness, leading to disagreement about how to interpret this data (Simonton 2010). In the arts, there is a positive correlation between creativity and mental illness, whereas this is not found in other domains such as the sciences. Csikszentmihalyi (1997) contends that the traits associated with creativity are “dichotomous tensions”, or contradictory but interlocked dispositions. For example, creativity might be associated with being both introverted and extroverted, conservative and rebellious, all at the same time (ibid., p.58).

Lubart’s psychometric models are highly influential (2018), and these involve a much wider range of traits than are allowed for in the habits of mind model. Lubart’s work references frustration, sadness, perfectionism and “destructiveness” (2018; Barbot et al. 2016). In other words, creative processes involve states of mind and characteristics that are not obviously pro-social, or are only concerned with fun, wellbeing and play.

Assessment is for creativity

This plateau considers the inherent paradoxes involved in the high-stakes assessment of creativity, and reviews the evidence on assessment for learning, or formative assessment, and how this might provide a model for assessment *for* creativity that avoids constructing creativity as a habit or skill for the workplace.

A Gordian rhizomatic knot: “Testing creativity”

Assessment in education can be described as involving “deciding, collecting and making judgements about evidence relating to the goals of the learning being assessed” (Harlen 2014, p.87). It is principally concerned with how teachers might adapt their approach based on evidence about the success of previous teaching episodes (Wiliam and Black 1996). Briefly, formative assessment aims to foster learning and support learners’ next steps, whereas summative assessment is primarily concerned with reporting on learning (Harlen 2014). The central feature of all formative assessment is that it involves feedback (Wiliam and Black 1996). Feedback is intended to enact change, and contains within it the idea of action and agency (ibid.).

Formative assessment is also termed assessment *for* learning, as opposed to assessment *of* learning. As Harlen discusses, this distinction can lead to an unhelpful dichotomisation (2014, pp.87-88). While all assessment should aim to improve teaching and learning, nevertheless, formative and summative approaches have different uses and serve different purposes.

The policy context is that assessment for summative purposes has grown exponentially in recent years, particularly in the USA and in the other nations of the UK (Harlen and Deakin Crick 2003). This reflects a belief among politicians and parents, and some educationalists, that testing can raise standards. Kellaghan et al (1996) identified six beliefs in relation to this view: 1) tests and exams indicate high standards; 2) high or “world-class” standards can be demanded and expected; 3) tests and exams exemplify to students what they have to learn; 4) rewards and penalties can be applied to the results; 5) students have to put in effort into their work in order to pass; and that 6) this is true of all students.

However, Harlen and Deaken Crick’s (2003) systematic review suggests that there is strong evidence about the negative impact of summative assessment on students and teachers. The aspects of summative assessment are most problematic are a focus on teaching test content, coaching pupils to pass the tests, and using class time for repeated practice tests (ibid.).

Raising the stakes was found to increase anxiety among students as a result of being exposed to greater risk and increased pressure to succeed, which has a negative impact on performance (McDonald 2001).

Summative assessment has also been found to diminish students' motivation for learning (Black and Wiliam 1998), with this effect being more pronounced for less successful students; hence, summative assessment can widen the attainment gap between higher and lower achieving pupils (Harlen and Deakin Crick 2003, p.170). Clarke et al.'s US-based research (2000) concluded that high stakes tests do not have a positive effect on teaching and learning, and do not motivate students at risk of becoming disengaged.

Further, motivation interacts with a range of personal characteristics, meaning that what motivates some students may demotivate others (Kellaghan et al. 1996). Students who are motivated by exam results tend to have performance goals, which can result in shallow learning and superficial understanding. "Teaching to the test" can result in students focusing on test-taking strategies and avoiding effort and responsibility (Harlen and Deakin Crick 2003).

Curriculum narrowing is another effect associated with increasing use of external testing (Johnston and McClune 2000). This is due to teachers focusing on test content. Even when teachers were not directly "teaching to the test", evidence suggests that less time is devoted to encouraging students to learn through enquiry and problem-solving (ibid.).

Why, then, is there an increasing demand for testing? In addition to the belief in testing as a measure of reform, education provides a highly profitable market for commercial providers of examination and curriculum materials (Clarke et al. 2000). However, technical innovations in testing do not necessarily result in better tests or better outcomes for students.

In contrast, formative assessment is associated with considerable improvement in attainment, and there is evidence for this across a range of different school subjects, in different countries, and for learners of different ages (Leahy and Wiliam 2012). Indeed, Leahy and Willian (ibid, p.52) make a strong assertion that "it seems reasonable to conclude that use of formative assessment can increase the rate of student learning by somewhere between 50 and 100%... formative assessment is likely to be one of the most effective ways […] of increasing student achievement."

There is a lack of research into the relationship between creativity and school-based summative assessment. Walker and Parker's (2006) research on GCSE Art and Design (in England) and students' creative endeavours is one exception. This project considered whether examination inevitably inhibits students' creativity, and raised questions about how non-orthodox approaches to assessing creative work can be recognised as valid by awarding bodies. The authors argue that examiners should support risk-taking, experimentation, open-ended enquiry and imaginative interpretation. For this approach to succeed, students need encouragement to take responsibility for their work and to develop the confidence and conviction required to pursue projects based on personal expression (ibid., p.306)

The question of whether schools can develop a culture of learning that fosters young people's creativity was addressed in a study by Lindström (2006). This research tracked students' progress in creativity in the visual arts from preschool to upper secondary, and concluded that it is possible for schools to evaluate both product and process, and to encompass investigation, inventiveness, ability to use models, and the capacity for self-assessment. However, this requires schools to engage with potentially difficult notions associated with creativity, such as unpredictability and ambiguity (ibid.).

Further issues in relation to the assessment of students' creative work include methods for validity, reliability and representativeness. As Sefton-Green (2000) observes, these issues are inherently related to resources, particularly teacher time, which can impact on the quality of interpretations of children's work (ibid.). Further, there are methodological questions regarding what counts as evidence and how judgements are reached.

In terms of models for the formative assessment of creative work, Blamires and Peterson's (2014) evaluative approach is based on teachers' professional judgement and knowledge, and brings together five strands of creativity in learning, which are: questioning and challenging; envisaging what might be; making connections, seeing relationships; exploring ideas; keeping options open; and reflecting critically on ideas, actions and outcomes. This model enables teachers to record examples of practice in relation to creativity which can be sorted according to the range of categories displayed. These examples, or vignettes, can be developed for a range of reasons – to provide a baseline, to illustrate learning, to evidence progression and to highlight effective practice. The aim is to develop a picture of students' creativity over time.

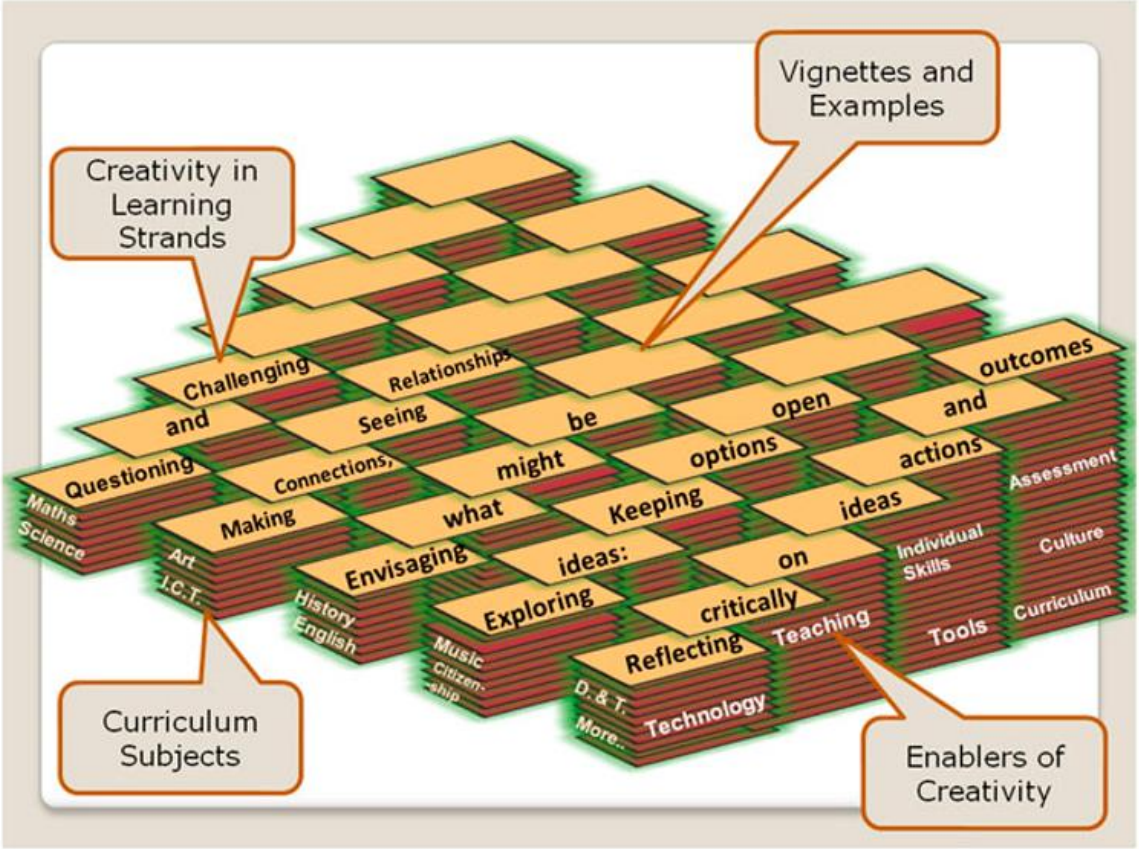


Figure 1: Blamires and Peterson's enablers and pedagogical strategies[6].

An ecological approach to teaching, learning and assessing creativity is provided by Harrington's creative ecosystem model (1990). This has been used in research projects which explore how creativity can be fostered through interactions between children, educators, environments, materials and techniques (Davies et al 2004). The model emphasises the need for ecological resources, for example the importance of uninterrupted time to focus and concentrate. The advantage of the ecosystem approach is that it can encompass the emotional and social factors necessary for children's creative development (ibid.).

[6] Source: Blamires and Peterson (2014).

Table 1
Personal and ecosystem resources to meet psychosocial demands of creative processes (adapted from Harrington 1990)

Personal Resources

- Strong motivation
- Courage
- Curiosity and willingness to explore
- Confidence in own abilities
- Awareness that creativity often involves substantial periods of discouraging and fumbling work
- Willingness to take risks and persevere
- Tolerance of ambiguity

Ecosystem Resources

- High ambient levels of creative activity
- Norms and rewards for task engagement and for 'hands-on' work with project materials
- Norms that encourage 'playing around' with ideas and materials
- Quick and easy access to materials, space and time
- Explicit or implicit expressions of confidence in the creative abilities of those within the environment
- 'loose' assignment to projects and deadlines
- prevalence of accurate information about creative processes and episodes
- known history of creative people and activities
- sufficient environmental wealth to permit slow and risky work
- roles that permit some long-term projects
- rewards for successful creative activity

Figure 2: Harrington's creative ecosystem model[7].

Curriculum for…? Assessment for…?

The contribution of formative assessment has been recognised in Scottish education policy since the 1970s (Hayward et al. 2004). In terms of specific policies, *Assessment is for Learning*, introduced in 2002, was informed by a holistic view of assessment (Black and Wiliam 1998).

[7] Source: Davies, Howe and Haywood (2004).

The focus on formative assessment was not sustained, however (Hayward 2015; Reeves 2016). *Assessment is for Learning* was subsumed within the new Curriculum for Excellence, which did not give sufficient attention to assessment overall, and de-emphasised the professional learning model (Hayward 2015). Further, Education Scotland's teaching and learning resources for formative assessment lacked consistency and were not framed by the curriculum. In contrast, the summative assessment advice was succinct and specific (Reeves 2016). Guidance on assessment in Curriculum for Excellence, *Building the Curriculum 5*, was not published until 2010. This contributed to curriculum and assessment being viewed as separate and disconnected (Hayward 2015). The documents accompanying *Building the Curriculum 5* focused on the "hotspots of assessment – bureaucracy and accountability", which had the effect of further diverting attention away from formative assessment (ibid., p.33).

Consequently, Scottish education policy and practice in relation to assessment has focused on narrowly-defined summative assessment (ibid.). As Harlen argues, the tendency to "fuse or confuse" formative and summative purposes tends to result in "good assessment" being regarded as assessment *of* learning, not *for* learning (Harlen 2014, p.100). Reeves (2016) describes assessment in Curriculum for Excellence as "a mess that lacks focus and meaning" and contends that recent developments in relation to assessment carry an assumption that "the performative cycle is now the dominant engine for learning" (p. 28).

With the introduction of standardised national testing in the 2010s, Scottish education policy turned firmly in the direction of summative assessment and performance management, which would seem to confirm the trends identified by Hayward (2015) and Reeves (2016). However, the recommendations in relation to assessment reform in the recent OECD review of Curriculum for Excellence (2021b) open up the potential for change. A separate OECD report that will argue for assessment practices to be better aligned to the principles of Curriculum for Excellence is forthcoming (Stobart 2021).

Reassembling creativity

Recently, 20 leading creativity researchers produced a sociocultural manifesto on creativity (Glaveanu et al. 2019). The authors include Baer, Hennessey, Lubart, Kaufman and Sternberg, who will be familiar from the preceding sections of this chapter. The manifesto's key points can be paraphrased as:

- creativity is, at once, a psychological, social, and material phenomenon;
- creativity is culturally mediated action;
- creative action is at all times relational;
- creativity is meaningful;
- creativity is fundamental to society;
- creativity is dynamic in both its meaning and practice;
- creativity is situated but its expression displays both similarities and differences across situations and across domains;
- creativity needs specification;
- creativity research needs to consider power dynamics both within our analyses and as a field of study;
- the field of creativity studies needs both quantitative and qualitative methodologies with strong theoretical grounding;
- old literature should be revisited and not abandoned;
- creativity researchers have a social responsibility.

The manifesto calls for a critical and reflexive discussion of creativity. Creativity is understood as a complex phenomenon, and researchers are urged not to present specific facets of creativity, such as divergent thinking, as creativity per se. Indeed, the authors argue that researchers need to acknowledge that "we always define and measure creativity from within a certain paradigm and discipline" (Glaveanu et al. 2019, p.743). This approach, if adopted, would address some of the confusions and problematic assumptions noted above.

Significantly, Glaveanu et al. (ibid.) reflect on the power dynamics involved in constructions of creativity, something that is not always overtly discussed in the literature:

> Within the last decade there has also been increased interest in the dangers of creativity (sometimes called its "dark side") and the ethics of creativity. All of this research is just getting started though. There is much left to do (ibid., p.745).

One instance of potential harm is the conflation of creativity with "gifted/talented" programmes. Although there may not be any validity to such claims, nevertheless, they have power, since in the US in particular, they are used for recruiting students into specialist programmes (Glaveanu et al. 2019). This emphasis on ethical imperatives, the orientation towards values and the necessity of acknowledging the context of creativity, informs my approach to this study.

Silences

I will now briefly consider two areas that are largely silent: research into creativity in the context of Scottish education, and the place of the arts within policy discourse on creativity and school education.

Creative Scotland?

Creativity is an under-explored topic in Scottish education research. This is perhaps surprising, given that innovation and education feature strongly in narratives about Scotland's distinctiveness. A recent exception is Kyritsi and Davis' (2020) research into the ways in which the implementation of Curriculum for Excellence impacts on children's creativity. The project involved a qualitative case study undertaken in a primary school classroom with one teacher and 25 children aged 11–12. The purpose was to explore the role of cultural and structural factors on students' creativity. The researchers found that the curriculum can be implemented in both rigid and flexible ways, and that barriers emerge when the "cultivation of skills within a tick-box system is perceived as more important than exploration and risk-taking, and when teachers are pressured to evidence the outcomes of their work" (ibid., p.1). They conclude that fostering creativity requires the development of "participatory frameworks which leave space for reflection and co-construction" (p.13).

The arts decline, but "creativity" rises?

Biesta (2017) argues that the prevalent view of art in contemporary education is that it provides space for students to express themselves, when the reality is that the narrowing of the curriculum results in expressive arts subjects being crowded out. Sawyer (2010) observes that it is ironic that the arts are losing their place in school curricula while at the same time creativity is increasingly in demand. Although creativity is not just associated with the arts, nevertheless it can be argued that these trends support concerns that children's "opportunities to express themselves creatively [have] been eroded in the past 20 years" (Blamires and Peterson 2014, p.148). Further, advocating the view that the arts have a cultural validity in their own right without recourse to supporting arguments from cognitive and developmental psychology has proven to be challenging (Sefton-Green 2000). Biesta (2017) contends that the arts have become instrumentalised in that they are used only for the purposes of "improving outcomes", or in the service of the sciences.

Summary

In these plateaus, I have discussed how creativity has been constructed as divergent thinking; as a key component of neoliberal educational reform agendas; as “Big” and “little”; as something that is inherently connected to freedom, goodness, wellbeing and democracy; and as a skill, disposition or habit. I have also considered how different approaches to assessment can support or inhibit creativity, pointing to inherent paradoxes in the drive to give creativity more prominence in “high-stakes” assessment. Yet regimes of testing and competency-based approaches have become dominant ways of thinking about assessment, and this lays the foundations for my exploration of the PISA creativity test in chapter five. The PISA assessment is underpinned by the belief that measuring creativity as a competence is both possible and desirable. However, the evidence reviewed here suggests that such assumptions are problematic.

A key point arising from the plateaus is that what creativity “is” varies according to the subject discipline in question, pointing to fundamental philosophical differences in its conceptualisation (Chan 2013). These difficulties are compounded when creativity is situated within the context of education, about which there are similarly contested views. Hence the many rhizomatic knots that impede progress in thought. The following chapter outlines the theoretical resources that enable a different perspective on creativity and its role in education.

Chapter 3: Theoretical resources for a research desiring-machine

Introduction

This chapter explains the theoretical resources that inform this study. These derive from the work of Deleuze and Guattari, who I turned to precisely because the question of what it means to create is at the heart of their philosophical project (Pope 2005; de Assis 2015). In their account of how conceptual confusions occur, Deleuze and Guattari (1994, p.49) describe the "illusions or errors, hallucinations, erroneous perceptions, bad feelings which arise from the plane itself like vapours from a pond". As will be recalled from the previous chapter, the creativity-assessment relationship is particularly complex and murky. In current education policy narratives, creativity is often defined as a workplace skill that can, and should, be measured (OECD 2021a). At the same time, creativity is also constructed as a set of habitual behaviours to be performed and captured (Lucas et al. 2013). I argue that these knotted (de Freitas 2012) constructions produce an understanding of creativity and assessment which risks devaluing the role of knowledge, reflection and judgement (Priestley and Biesta 2013), all of which may be necessary for meaningful creative thought and practice (Glaveanu et al. 2019). Hence, one of the aims of the thesis is to dispel the vapours and "sedative discourses" (Guattari 2000, p.41) regarding creativity and assessment in the context of school education, and Deleuze and Guattari's thought provides me with the tools for undertaking this task.

The key concepts used in the project are: desire and control; the *ritournelle*; the rhizome and the tree; smooth and striated space; and the idea of machinic assemblage, or the desiring-machine. I begin with desire, since desire is inherently related to Deleuze and Guattari's understanding of creativity. The section on desire also discusses the important concept of the desiring-machine. The entire research project is understood as a desiring-machine: that is, it is an arrangement which I constructed in order to explore the creativity-assessment relationship. Another key concept is the war-machine, which I use to map the workings of the creativity movement as it spreads across the global territory of education. To help explain this perhaps rather strange-sounding concept, I discuss the war-machine in relation to Deleuze and Guattari's theory of nomadology (1988/2017). Nomadology involves a consideration of contrasting approaches to power and social organisation; namely, the difference between nomadic thought and State/Royal constructions of knowledge. Nomadology has inspired nomadic education theories

(Semetsky 2008), where the intention is to smooth out striated, or constrained, approaches to teaching and learning. The chapter concludes with a discussion of conceptual personae, who play a significant role in Deleuze and Guattari's philosophy by possessing concepts and animating them. As discussed in chapter one, the conceptual personae help to guide the reader through the analysis.

Before proceeding, it should be noted that I do not describe the theoretical resources as a framework, and that this is quite deliberate. Frameworks, when applied rigidly, can be limiting (Alvermann 2002). In previous research projects, I struggled with methodology and analysis, believing that I had to make data fit into a pre-existing frame. In contrast, my approach in this project was to "think with" Deleuze and Guattari's theory. This seemed more consistent with Deleuze and Guattari's aim of dismantling the readymade *frayages* or pathways which channel and direct thought (1983).

Desire

For Deleuze and Guattari (1983), desire is the fundamental and productive force that galvanises all of existence. Their understanding of desire is strongly influenced by Nietzsche, who describes this force as will, and by Spinoza's concept of *conatus* (Boundas 2010). Will and *conatus* are active, creative and joyous energies (Morss 2000). Similarly, Deleuze and Guattari understand desire to be a positive force through which everything can connect and is able to emerge into existence, or "become" (Boundas 2010). In other words, desire is a creative energy, and is cognisant with the life force itself (Morss 2000).

Deleuze and Guattari regard thought itself as inherently creative, since "thinking and creating are constituted simultaneously" (Stagoll 2010b, p.91). As such, their philosophy "celebrates thinking as creation" (Morss 2000, p.198). Echoing the formula deployed in *A Thousand Plateaus* (Deleuze and Guattari 1988/2017), this relationship can be expressed as DESIRE = LIFE = THOUGHT = CREATIVITY[8]. Since desire contains within it the potential to produce that which is new, it is through desire that the world can be changed (Stagoll 2010b).

Desire is concerned with epistemological and pedagogical questions about what we know, and how we come to know it (Colebrook 2008). To think of learning as desire is to understand it as a

[8] "RHIZOMATICS = SCHIZOANALYSIS = STRATOANALYSIS = PRAGMATICS = MICROPOLITICS" (Deleuze and Guattari 2017, p.23)

yearning for the other and that which is unknown. Education as a creative desire involves rejecting the “mere circulation of the already sayable, the domestication of knowledge” (ibid, p.40). In particular, Deleuze and Guattari were concerned about the dominance of opinion in contemporary Western culture (jagodzinski 2017). Education as difference and provocation interrupts habitual ways of thinking, in which we become trapped in the grooves of commonplace beliefs and unexamined assumptions (ibid.).

For Deleuze and Guattari, desire is also inherently political, a position which is influenced by Nietzsche and Foucault, who understand knowledge as being fundamentally concerned with power (Pope 2005). This inspired my approach to analysing education policy, which involves posing questions about what policy makers want teachers and students to desire, and why. Desire is a particularly helpful concept for addressing questions about the nature of the creativity-assessment relationship, how this relates to the purpose of education, and how this relationship might potentially be rethought.

In *Anti-Oedipus* (1983), the first volume of *Capitalism and Schizophrenia*, Deleuze and Guattari discuss how desires are produced, and might be produced differently, and the affect that these desiring-productions have on the world. Affect is an important concept in Deleuze and Guattari’s philosophy. It refers to the capacity that all of us have to impact on and be changed by each other (Zembylas 2021). An understanding of creativity as affective involves the idea that affect is not just something that happens to and is contained within the individual; rather, it happens between and through people and things. In other words, it is relational and multiple. Hence, the notion of creativity that underpins the thesis is that of a collective endeavour, or what Pope (2005, p.84) terms a “re…creation”. This involves understanding creativity as something that is produced through actively doing and making (mapping as we go along on our creative journeys) rather than the current policy notion of creativity as a disposition: a potential which may never be realised (a journey that we might plan and be equipped for, but never actually embark upon).

Defining people, and other entities, as having affective capacity has important implications for conceptualising education and for educational research (Deleuze 1988). For instance, an affective understanding of students is that they are not blank slates, but that they enter into education, and indeed life itself, in the midst of what Deleuze refers to as an ongoing rhythm of existence:

> One never commences; one never has a tabula rasa; one slips in, enters in the middle; one takes up or lays down rhythms (Deleuze 1988, pp.123-124)

This notion of "the middle" involves an approach to research whereby "[t]hings and thoughts advance or grow out from the middle, and that's where you have to get to work, that's where everything unfolds" (Deleuze 1995, p.161). As such, creativity is not understood as something which emerges *ex nihilo* (Pope 2005), but rather as something that develops through an intricate and ever-expanding web of interactions.

Desiring-machine

Deleuze and Guattari's concept of the desiring-machine (1983) is used in this study to explore the ways in which desires are produced, and the affects these desires create in the world. The desiring-machine was introduced in *Anti-Oedipus* (ibid.) and is the original version of Deleuze and Guattari's machinic arrangement image of thought. This concept was subsequently termed the assemblage, or *agencement machinique*, in *A Thousand Plateaus* (1988/2017), the second volume of *Capitalism and Schizophrenia.* Although Deleuze announced that he had abandoned the desiring-machine and its accompanying methodology, schizoanalysis, he also stated that terminology was unimportant and "totally interchangeable" (Deleuze 2004, p.278). For Guattari, the desiring-machine and schizoanalysis continued to be relevant, and they featured throughout his writing, including in his final works (Alliez and Goffey 2011). The methodology for the data generation in this project primarily draws on Guattari's schizoanalytic diagramming, and takes inspiration from how this has been adapted for educational research (e.g., Cole 2016).

There are several reasons why desiring-machine is used in preference to its later incarnation as the *agencement machinique.* Assemblage, as this concept is usually translated, has become somewhat ubiquitous in social research. Thompson et al. (2021) argue that it risks becoming a deadening metaphor or readymade path that merely directs thought. Further, it tends to be used to express the idea that the social world is complex, which can result in overly descriptive accounts that lack analytical power (ibid.). Buchanan (2015) contends that "[i]nstead of a new understanding of the problem, [assemblage] simply gives us a currently fashionable way of speaking about it" (ibid., p.391).

Another difficulty stems from way that assemblages are assumed to function. Often, they are described as operating in a systematic manner, like a computer (Thompson et al. 2021). This implies predictability, rather than the messiness that characterises life. Thompson et al. (ibid.)

use the example of the classroom to illustrate this. Classrooms do not function in a systematic way; as well as order and control, they are just as likely to feature chaos and unpredictability. This understanding of how assemblages function can lack a sense of haecceity, or a specific thisness, that is important in Deleuze and Guattari's empiricism (jagodzinski 2017, p.2).

In contrast, the term desiring-machine helps to maintain an analytical focus on the production of desire (Alliez and Goffey 2011). A key analytical issue in this study is the affects produced by policy desiring-productions in and through school education (Savat and Thompson 2015). Not only does the desiring-machine help maintain a focus on the flows of desire, but it also draws attention to breakdowns and the irrational. Paradox and the impossible are recurrent refrains that echo through the thesis, as will be recalled from the literature review.

The desiring-machine helps illuminate the way in which Deleuze and Guattari understand thought as a machinic arrangement. Fragmentation and ruptures are crucial aspects of such arrangements. Guattari's (1995) example of a Surrealist absurd machine illustrates this. Man Ray's artwork *Dancer/Danger* serves no practical purpose, as the parts of the machine cannot possibly work together. Since this is apparent, the audience's focus turns to what the artwork might be suggesting (ibid.). With *Dancer/Danger*, this is the relationship between the human and non-human, or between art and technology. Similarly, the desiring-machine emphasises the role of the unconscious and the interplay between association and breakdowns. Ruptures should not be conceived of as negative, but as productive (Deleuze and Guattari 1983). An analysis which understands people and social relations as desiring-machines is particularly attuned to splits or schizzes, and what these are "doing" (Coleman and Ringrose 2013). As Deleuze and Guattari explain it:

> In desiring-machines everything functions at the same time, but amid hiatuses and ruptures, breakdowns and failures, stalling and short circuits, distances and fragmentations… the breaks in the process are productive, and are reassemblies in and of themselves (1983, p.42).

For this reason, the analysis in chapter six focuses on instances where cuts, blockages and stammering appear in the data. These are schizzes or cracks that become perceptible when, for example, participants' speech becomes knotted and their ability to express their thoughts becomes impossible. The molecular "cracks" (Grinberg 2013, p.204) or "imperceptible ruptures" (Deleuze and Parnet 1987, pp.131–2) enable that which is different or other to break through

dominant ways of thinking. However, these cuts can also involve a reconnection to an older line of thought (de Freitas 2012) which merely reproduces dominant thinking; as such, they do not automatically lead to freedom:

> You may make a rupture, draw a line of flight, yet there is still a danger that you will reencounter organisations that restratify everything, formations that restore power to a signifier, attributions that reconstruct a subject (Deleuze and Guattari 2017, p.9)

Flows and breakdowns are one aspect, or mode, of the desiring-machine. Another mode concerns the workings of chains or codes (Deleuze and Guattari 1983). Society is a regime of coding, since codes make existence possible. For instance, there are codes in relation to how to speak, work, or be part of a family. The terms chains and codes are used interchangeably by Deleuze and Guattari to describe these processes. Reflecting this, I use both terms to refer to the ways in which the desire to control is produced though, for example, the State education desiring-machine. Identifying and mapping the signifying chains or codes is the "first positive task" (Deleuze and Guattari 1983, p.322) of schizoanalysis, which I adapted for data generation and analysis.

Semiotic chains or codes are not only concerned with language and its workings. They also include political, economic, techno-scientific, legal, biological and subjective processes (Deleuze and Guattari 2017, p.7). In recognition of this, the analysis pays close attention to both the human and non-human dimensions of desiring-machines. As this suggests, Deleuze and Guattari's ontological orientation is materialist. Specifically, their focus on energy, actualisation and matter places them within the tradition of vital materialism (Colebrook 2011). Guattari (2000) explains this as follows:

> [H]uman individuals are themselves composed of vital materials… vital materialists do not claim that there are no differences between humans and bones, only that there is no necessity to describe these differences in a way that places humans at the ontological centre or hierarchical apex (p.11).

The non-human, or more-than-human (Piotrowski 2020) aspects which I focus on include artefacts such as assessment models, policy guidance, teaching materials, and students' creative projects. Attention is also paid to digital artefacts, particularly social media posts, online educational resources, conference PowerPoint presentations and YouTube videos in relation to creativity and assessment. To map the relations between the human and more-than-human, I

use Guattari's (2012) fourfold schizoanalytic model. This is explained in chapter four, but briefly, the divisions in the diagram are: Flows (F), Universe (U), Territory (T) and Phyla (Φ). In my application of the schizoanalytic map, technologies are referred to as machinic phyla (Φ). The less visible or tangible material factors include structural Flows (F), such as those of capital and labour. Other more-than-human elements include ideas and beliefs, which belong to the abstract realm of the Universe (U). Territory (T) refers to the environment in which the research participants operate, namely the Territory[9] of education.

Cole (2014, p.81) uses the term "immanent materialism" to describe these relations. Deleuze and Guattari's ontology has an immanent orientation in that it involves the imperative to "embrac[e] the possibilities that this world, which is the only world, has to offer" (May 2005, p.241). Understanding why this is the case, and the implications this has for the empirical study, requires a (necessarily brief) engagement with traditional philosophical questions regarding the nature of existence (ibid.).

Deleuze and Guattari's understanding of immanence derives from Spinoza, who proposed that the universe consists of one substance. Everything that exists is part of this same, eternal substance; consequently, all existence is infinitely interdependent, or relational (May 2005). Spinoza used the terms Nature or God to describe this one substance, which constantly grows and expands. Further, there is no transcendent or divine world separate from the immanent plane in which we exist.

Nietzsche's critique of transcendence was another key influence on Deleuze and Guattari's ontology. Nietzsche argues that transcendence leads people to deny themselves and devalue their world, since if human existence is regarded as entirely separate from the transcendent world of God, then it is seen as having no worth unless it rejects itself. Through immanence, however, humanity can overcome this self-denial (ibid.). This position supports the idea of an active engagement in the world as it is, which explains Deleuze and Guattari's focus on empiricism. Deleuze and Guattari also draw on the pragmatist tradition of James, Dewey and Bergson, in which truth is something that is constructed, and rejects the notion of pre-existing facts awaiting discovery (Pope 2005). Hence, the empirical study is attuned to the construction

[9] Whenever Territory is capitalised, this indicates that I am applying Guattari's (2012) schizoanalytic diagram, of which Territory is one of the four divisions.

of truths through methods, rather than aiming to uncover a fundamental truth about creativity and assessment within the Scottish school system.

Control

> The coils of a serpent are even more complex than the burrows of a molehill
> (Deleuze 1992, p.3)

Deleuze and Guattari's concept of control society (1994) helped me to understand policy developments in relation the assessment of creativity. Although education is not a topic that Deleuze and Guattari wrote about extensively, questions about the purpose of schooling and assessment surface in their work, as for example in Deleuze's predictions about the fate of education:

> One can envisage education becoming less and less a closed site differentiated from the workplace as another closed site, but both disappearing and giving way to frightful continual training, to continual monitoring of worker-schoolkids or bureaucrat-students. They try to present it as a reform of the school system, but it's really dismantling.
> (Deleuze 1995, p.175)

Deleuze believed that the dividing line between education and the workplace would end up being completely dissolved. Deleuze's analysis of the affects produced by the influence of "the corporation at all levels of schooling" (1992, p.7) helps explain why assessment reflects vocational, managerial approaches such as continual training and constant surveillance of performance. The purpose of education is aligned to the creation of a new form of subjectivity in the form of "worker-schoolkids", who not only serve the interests of what Guattari (2000) termed Integrated World Capitalism, but whose own desires are entirely enmeshed with those of capitalism, and who ultimately desire their own oppression: "Many young people strangely boast of being 'motivated'; they re-request apprenticeships and permanent training" (Deleuze 1992, p.7).

In Deleuze and Guattari's theory of social change, the current era is a period of transition from a social order characterised by discipline to one which is defined by control (Deleuze and Guattari 1994). Disciplinary society was the era of industrialisation, and its social institutions reflected the hierarchical factory-based mode of production. In Integrated World Capitalism (Guattari 2000), the factory is replaced by the multinational, networked corporation. This shift also produces change in individuals and in their relations with one another. A new form of power, namely that

of all-encompassing, yet largely intangible control is now the dominant characteristic of society, and this is an infinitely more complex and slippery beast than discipline society:

> The old monetary mole is the animal of the spaces of enclosure, but the serpent is that of the societies of control. We have passed from one animal to the other, from the mole to the serpent, in the system under which we live, but also in our manner of living and in our relations with others. (Deleuze 1992, pp.5-6)

In control society, the focus shifts to the marketing and advertising of products, rather than manufacturing. Education in control society is primarily concerned with producing the flexible worker required for this globalised corporate world; one who can constantly remould themselves in line with the corporation's desires and perform the skills and dispositions required for the core tasks of branding and communication (Deleuze 1995). Thus, the purpose of the school system is to produce the human capital required by the corporation (Deleuze 1992). The subject is no longer an individual, since "[i]ndividuals have become 'dividuals', and masses, samples, data, markets, or 'banks'" (Deleuze 1992, p.5). Students are reshaped as "becoming-statistics" (Sellar and Thompson 2016). The concept of control society helps to explain why datafication is a key characteristic of contemporary school systems (Williamson 2016) and why the measurement of all aspects of learning is now an imperative. In control society, more and more areas of human existence must be appropriated and measured (jagodzinski 2013). Thus, control society's values prevail in education as well as throughout society more generally:

> [J]ust as the corporation replaces the factory, perpetual training tends to replace the school, and continuous control to replace the examination. Which is the surest way of delivering the school over to the corporation. (Deleuze 1992, p.5)

The capture of creativity is merely the latest manifestation of this trend. Creativity becomes commodified as a "designer capitalism" (jagodzinski 2013) that can be packaged and sold to schools by businesses. Advertisers and entrepreneurs position themselves as society's cutting-edge innovators and thinkers, appropriating concepts such as freedom and authenticity and refashioning them for their own purposes. This poses fundamental dangers for thought (Deleuze 1995, p.136) as it produces a "perverted image of creativity" (Pope 2005, p.6) in which corporations claim that they possess the answers to society's problems.

Against this, Deleuze and Guattari contend that philosophy, the arts and science have a unique role, since they are inherently creative domains and contain within them a revolutionary

potential. It is through these three domains that new thought can be produced, and control society can be resisted and transformed (Deleuze 1995, p.136). However, the risk for thought, and thus for creativity, is that control society insists on continual communication, leaving little space and time for silence and reflection (ibid.), which are essential for the "creative solitude" (Pope 2005, pp.55-56) valued by Deleuze and Guattari.

The concept of control society helps to illuminate that policy constructions of creativity and assessment are symptomatic of wider cultural, social and economic change. Further, Deleuze and Guattari's diagnosis explains the predominance of approaches deriving from business theory within contemporary education. While it might be objected that school systems still exist and have not been entirely replaced by corporations, nevertheless, current trends in relation to performativity, datafication, lifelong learning and competency-based assessment (Wolf 2001), support the thesis that school education has already moved towards the perpetual training and continuous control predicted by Deleuze. These notions of the continuous and the perpetual lead to a consideration of how time and association is understood by Deleuze and Guattari, and why education policy becomes locked in circles of deadly repetition (Guattari 2000).

Ritournelle

An important aspect of this study is the analysis of the "world of tomorrow", a policy desiring-production which is projected through and within the territory of education (chapter five). Deleuze and Guattari's understanding of time, difference, repetition and association help to explore the desires being conveyed through these productions, what they are aiming to achieve, and why. Firstly, I will briefly consider the notion of time as eternal recurrence before moving on to the interplay of difference and repetition, and then finally the role of association in connecting memory and emotions as part of the workings of the desiring-machine.

Deleuze's (1994) "aionic" conception of time differs from conventional, chronological understandings of time. It references the ancient Greek deity Aion, and contrasts with the notion of time represented by the god Chronos. Chronos' time progresses in a linear fashion (Taylor Webb et al. 2020, p.290). In contrast, Aion's time is eternal and cyclical. It "stretches eternally in two directions (past and present) at once" (Piotrowski 2019, p.76). Deleuze discusses this using the persona of Lewis Carroll's Alice as the "impossible child" who moves in two directions at the same time (Hickey-Moody 2013). Nietzsche's notion of eternal recurrence was a major influence on the concept of the aionic, since it involves the idea of endlessly varying cycles of time (Pope

2005). The idea of eternal recurrence is echoed in Deleuze and Guattari's "Great Refrain" (1994, pp. 173–7), which presents life as a process of co-creation.

This understanding of time, creativity and the refrain connects to the theme of difference and repetition (Deleuze 1994). Deleuze understands difference as arising from repetition, but repetition also has the effect of eradicating difference (Deleuze 1994). This idea of repetition producing sameness, but also difference, is explored through the analysis of recurring policy images and messages. The images and words are similar, and they convey a consistent message, yet they also contain variations and produce different affects, since the audience and context also vary. Students' creative processes can also be understood as an interplay of difference and repetition. For example, a piece of creative writing or an art project might be worked and reworked until something different is produced. Understanding difference and repetition as an interweaving dance helps me to analyse the recurring phrases and images which surfaced across the research interviews, as well as in policy and practice.

The *ritournelle* is used in the analysis to explore affect and the intertwining of past and present. *Ritournelles* involve echoes from other times and places, and they resound throughout the data. They are primarily concerned with association (Buchanan 2013), and the original French term is retained since it conveys the idea of a return as well as of a refrain. A sudden encounter with an object, a change in the weather, a scent or a specific word can summon an association in our minds. Provocations, such the images used in the data generation (e.g., fig.3), can invoke associations. This can involve memories of positive and negative experiences, or strange mixtures of both, which shape responses to questions such as "what does creativity mean to you?" or "do you think this assessment model is helpful?".

Buchanan (2013) argues that there is a gap in relation to the explanatory ability of schizoanalysis, which Deleuze and Guattari acknowledged, and that the *ritournelle* provides a solution to this (ibid.). Schizoanalysis rejects the method of association in Freudian psychoanalysis, in which something always stands for something else. Deleuze and Guattari used Freud's case study of Little Hans to explain this (1983; 1988/2017). Little Hans was agoraphobic, and his problems related to his fear of the horses that worked in his street. Freud and Little Hans' parents insisted that the child must be associating the horses with his father, yet Hans kept objecting, telling them that he was afraid of the horses precisely because they were horses, and might bite him. For Deleuze and Guattari, it was the machinic arrangement of

street-horse-Hans that produced the agoraphobic affect, the key issue being the restraint the horses were subjected to, and the pride they had in their performance despite this containment (Buchanan 2013). It was this interplay of control, desire, and fear that troubled Hans. The *ritournelle* thus provides insight into subjective processes. For example, in the research conversations, a sudden memory results in a change in mood, which then produces a tension. This could involve thinking of creativity as freedom, but also as something that should be domesticated and curtailed. The *ritournelle* thus helps to explore how provocations and associations "troubled" participants' views about the creativity-assessment relationship. In the spirit of schizoanalysis, this involved thinking through participants' words and the intensity with which they expressed them.

Rhizome

In the study, rhizomatic and arboreal are used to describe power relations and different ways of thinking. Deleuze and Guattari's *A Thousand Plateaus* (1988/2017) begins with a discussion of arboreal, fascicular and rhizomatic thought. Tree-like social organisation and thought is hierarchical and top-down, as arboreal structures are closed, fixed systems that aim to promote order and prevent chaos (Stagoll 2010a). Arboreal thinking involves the creation of dualisms, which take the form of dominant concepts which function as central pillars or trunks. In seeking to control chaos, these structures restrict thought as they close off the ability to generate that which is different. When a powerful concept is placed at the top of a structure, it reduces the potential for critique, directing thought away from the "dynamism, particularity and change that is evident in lived experience" (ibid., p.15). For example, the concept of heteronormativity can be understood as a binary way of constructing sexuality which normalises one way of being and constructs other ways as deviant.

As discussed in chapter two, the rhizome is a botanical term that is associated with continual and potentially infinite growth and connectivity. A rhizome is always "in the middle" as it has no clear beginning or ending, and it involves thinking in terms of multiplicities. Rhizomatic structures are concerned with transversality[10] and a non-hierarchical approach to social

[10] This understanding of transversality differs fundamentally from the recent policy construction of creativity as a "transversal skill for lifelong learning" (Lucas and Venckutė 2020). Lucas and Venckutė's methodological question is: "Framing creativity — What are the frameworks capturing creativity as a transversal competence/skill/skill set for lifelong learning?" (ibid., p.3). "Framing" and "capturing" creativity in this way is incompatible with the ontological position taken in this thesis. Further, there are inherent problems with depicting creativity as a skill or competence, and the construction of education as lifelong learning has also been subject to considerable critique (Wolf 2001).

relations (Stagoll 2010a). For instance, a school, a classroom or a student's project can be arboreal (top-down, with a central controlling idea given by the teacher to the student) or rhizomatic (involving horizontal, flattened power relations, with teacher and student working together to develop a creative project).

As with Deleuze and Guattari's other contrasting concepts, however, the rhizomatic and the arboreal exist in an interplay. Tree structures can exist within rhizomes, since "[g]roups and individuals contain microfascisms just waiting to crystallise. Yes, couchgrass is also a rhizome" (Deleuze and Guattari 2017, p.14). This reference to couchgrass, an invasive weed, emphasises that the rhizome is a neutral concept and is not inherently connected to goodness or freedom. Although rhizomatic thought can emerge within arboreal structures, the risk is that it becomes incorporated within the tree trunk and thus shores up the way of thinking it originally intended to challenge (Hodgson and Standish 2009).

Another danger for rhizomatic thought is that can become entangled within root systems. This root-thought is described by Deleuze and Guattari (1988/2017) as fascicular, or bundled. It grows out of scepticism regarding Enlightenment grand narratives, whereby it is no longer possible to believe in ideals such as truth and progress. Fascicular thought is a specific response to this uncertainty about what to believe in, whereby thought turns inwards and becomes self-absorbed. Etymologically, fascicular derives from fasces*,* from which the word fascism also stems (Morss 2000). If rhizomatic thought becomes enmeshed within the fascicular, it can find itself ensnared in continuous circular grooves. To break free and progress, thought needs to encounter difference, since engagement with that which is other is necessary to stimulate new thought and ignite the potential for growth. Rhizome-root and rhizome-trunk ensembles (Deleuze and Guattari 2017, p.15) provide a way of understanding how hierarchical thought intertwines with rhizomatic approaches within education, enabling an analysis of the ways in which education policy and practice become stuck in repeat.

Nomadology

The twelfth chapter of *A Thousand Plateaus* (1988/2017) involves a comparison of two different approaches to social organisation: the nomadic and the State (or Royal). The concept of the nomadic, also referred to as nomadology or nomad science (Patton 2018), derives from human geography and the history of technology and warfare. It involves the topological concepts of smooth and straited space, and the war-machine, which refers to the human-technological

ensembles developed by both the State and by nomads for the purposes of control, expansion and defence (Deleuze and Guattari 1988/2017).

Nomadology has influenced theories of nomadic education (Semetsky 2008), educational nomadology (Cole 2014), a minor philosophy of education (Gregoriou 2004), and minoritarian knowledge (Lines 2008). Broadly speaking, a nomadic approach aims to overcome dualisms or binaries in thought (Cole 2014). It emphasises the importance of encountering difference, or that which is minor rather than dominant, in order to "lead out the soul" of education (Colebrook 2008). Thus, it is concerned with subjectivity and becoming other, or the creation of the "people-yet-to-come" (Carlin and Wallin 2014).

Nomadic theory also involves the idea of territory and how it is continually undergoing territorialisation, deterritorialisation and reterritorialisation (Deleuze and Guattari 1988/2017). If we think about education as a territory, whether local or stretching out across the globe, we can begin to see how capitalist forces might wish to deterritorialise it of State control so that it can be opened up to the free market. However, this involves an occupation and a reterritorialisation of educational space.

In this thesis, nomadology is used to move beyond critique, since it is concerned with learning to develop and deploy tactics and strategies for change. To achieve this, a nomadic pedagogy requires a guide (Colebrook 2008). As such, nomadology helps to query beliefs about the adult/teacher as the destroyer of creativity and crusher of children's spirits, themes which can be readily identified in the creativity movement's desiring-productions (discussed in chapter five). The nomadic also offers an alternative construction of learning as an ongoing mapping rather than as a journey to predetermined point, as is the case with learning outcomes, for example.

Smooth and striated space

The concepts of straited and smooth space are used by Deleuze and Guattari (1988/2017) to explore the differences between nomadic and State/Royal knowledge and power. This involves comparing the nomad's expansive mode of thought with that of the State/Royal. The latter involves striated space, which is organised along gridlines of control (ibid.). This has the effect of directing people and how they think, operating through regulations and by establishing pre-set roles. The grid thus necessarily limits movement since it requires governance and order. In

contrast, smooth space involves unrestrained movement, as when the nomad carves out their own path as they traverse the blankness of the desert, steppe, sea or ice (Lorraine 2010b, p.258).

Deleuze and Guattari (1988/2017) use the games of chess and go to explain the differences between smooth and striated space. Chess pieces can only make restricted movements across the chessboard's squares, and they are defined in terms of moves they are permitted to make. If we apply the notion of striated space to education, we can understand it as a territory in which people become defined and constrained by the roles that they are given (high achiever, disengaged student and so on).

In contrast, the go board has intersections rather than squares, and the aim is the "proximal occupation and definition of territory" (Morss 2000, p.194; Deleuze and Guattari 1987). It is a game of tactics, with all pieces free to move in the same way as each other. Smooth space expands the territory of thought through movement (Hodgson and Standish 2006, p.568); it "draws" itself through a "surging, spiralling movement of a critique that enables us to think what we could not think before" (ibid.). A nomadic pedagogy stretches out into the straited space and erases the gridlines, creating a fresh surface on which something new can develop. Thus, smooth space contains within it the potential for escape, or lines of flight, to emerge. These lines are produced through energy and differentiation, in comparison to lines of articulation, which are concerned with order. Lines of flight stretch in all directions across smooth space, but they may be unpredictable and uncontrollable (Deleuze and Guattari 1988/2017). In the study, the idea of smooth space which contains the potential for chaotic lines of flight helps me to analyse the idea of creativity as a risky endeavour.

While the thesis advocates a nomadic pedagogical approach to understanding the creativity-assessment relationship, this is not as straightforward as proposing a smooth space in which creative work may flourish freely, as opposed to a straited space in which creativity is constrained through measurement. As will be recalled from the previous section on the rhizome, Deleuze and Guattari's contrasting notions always need to be understood in relation to one another. Smooth and striated space are inextricably intertwined, so that "the two spaces in fact exist only in mixture" (Hodgson and Standish 2006, p.568). The effect of this is that "smooth space is constantly being translated, transversed into striated space; striated space is constantly being reversed, returned to a smooth space" (Deleuze and Guattari 2017, p. 474).

This interplay of smoothing-striating is important in the analysis. It is not sufficient to aim for smoothness as an end point; rather, the aim is to continually identify and challenge striation so that there is at least some space where new becomings might be possible (Hodgson and Standish 2006). To echo Deleuze and Guattari's warning: "Never believe that a smooth space will suffice to save us" (1988, p. 500).

War-Machine

> [T]o create is to resist. (Deleuze and Guattari 1991, p.110)

Deleuze and Guattari (1988/2017) use the concept of the war-machine to explore the relationship between nomadic and State/Royal power. It is also inherently connected to human innovation, since "every creation is brought about by a war-machine" (Deleuze and Guattari 1988, p.360). It is a theoretical concept which does not literally refer to an armed movement; however, terrorist organisations have been described as war-machines (Hodgson and Standish 2006). For instance, al-Qaeda is a rhizomatic network with no identifiable headquarters (and thus no centre), which has a global spread, is potentially ever-expanding, and can endlessly reform itself (ibid.).

The war-machine is revolutionary in origin and develops in response to the actions of the State/Royal. Morss (2000) describes the war-machine as an ad-hoc ensemble which forms as and when required. It can involve temporary and strategic coalitions, and co-opts the tactics of the State if need be (ibid.). Essentially, the nomadic war-machine desires to occupy and free the space that has been captured by the State, a process that involves breaking down the State's gridlines of power (Deleuze and Guattari 1988/2017). It then repurposes the territory for its own ends, which could be financial, ideological, cultural, or combinations of these.

Cole (2008) identifies hyper-capitalism, punk, anarchism and criminal networks as war-machines. Scientific and artistic movements can also be war-machines (ibid.), with the space they seek to smooth out, or deterritorialise, being that of thought. They may seek to smooth out their own domains in the sciences and the arts by reforming the academy, for example. Fascist war-machines aim to occupy and transform the State according to their own desires (Deleuze and Guattari 1988, p.492). The latter point is important, since war-machines have both negative and positive applications; they are implicated in the interplay of territorialising, deterritorialising and reterritorialising, whereby the war-machine destroys the State's control (deterritorialisation)

only to replace it with a new structure founded on its own beliefs and values (reterritorialisation).

War-machines are not entirely separate from the State, as they make forays into it, occupy parts of it, and may become enmeshed within it (Cole 2008). This is important for the way in which the concept is used in this study. For example, the creativity war-machine captures aspects of the State education system — it applies for and receives State funding, delivers training sessions for State-employed teachers, presents at the State education agency's conferences, and designs teaching and learning materials to be deployed in State schools.

War-machines have three main characteristics: the spatiogeographic; the numeric; and the affective (Deleuze and Guattari 1988/2017). The spatiogeographic describes the nomadic approach to social organisation, in which people are distributed across space. It also refers to the nomad's sojourns through the spaces that lie in-between the straited, readymade paths. The notion of the spatiogeographic is used in this study to map the creativity war-machine's movements across the territory of education. It also informed the principles of caesura (pause, or cut) and continuance, which form part of the methodology I constructed for the data generation as well as the pedagogical principles I propose for fostering and assessing creative work (chapter seven).

The affective aspect of the war-machine refers to the way in which its weapons operate. Nomadic affects take the form of either tools or weapons; the definition depends on their usage (ibid.), and whether they are orientated towards producing something new or destroying that which already exists. Affects that are designed to be projected constitute weapons, since they are akin to missiles fired at the enemy. The analysis of the creativity war-machine *en manoeuvre* (chapter five) uses this notion of the affective to identify the creativity war-machine's targets.

Finally, the numeric refers to the logistic and strategic functions of the war-machine (Deleuze and Guattari 1988/2017). Logistics have an external orientation, in that they are concerned with the outward-facing formations required to defeat the enemy, whereas the strategic is about the internal organisation of the war-machine. The war-machine can also include a special, dedicated numeric body, or elite guard, that spearheads the movement. I refer to this as a "vanguard" in the analysis of the creativity movement as war-machine.

Essentially, then, the war-machine is used in this research project to explain how the State education system finds itself being challenged and occupied by revolutionary forces. As will be discussed, the creativity movement describes itself as revolutionary, or punk. The analysis considers how the creativity war-machine reterritorialises, or striates, the territory it seeks to liberate by turning itself into the official source of knowledge on creativity and its assessment.

According to Deleuze and Guattari, to create is also to resist (1991). The war-machine is also used in this study to suggest how teachers and students might form a resistance to the processes of capture and striation. War-machines are "revolutions and societies of friends, societies of resistance" through which "pure becomings" are created (Deleuze and Guattari 1991, p.110). The teacher-student war-machine involves the teacher as guide or master-apprentice in partnership with the apprentices, or students. This conveys the sense in which teachers are always seeking to expand their knowledge, too; a premise that underpins teacher enquiry. The teacher as a sort of master apprentice must try and clear the way for smooth spaces so that new thought might emerge (jagodzinski 2017, pp.7-8).

Conceptual personae

As will be recalled from chapter one, Deleuze and Guattari use personae to bring their concepts to life. The personae "haunt" philosophy (Deleuze and Guattari 1994, p.24) with a spirit-like essence. Examples include the Evil Demon in Descartes, or Dionysus and Zarathustra in Nietzsche (May 2005). For Deleuze and Guattari, personae are "the real subjects of philosophy" (1994, p.64) who represent thought's ability to expand and disperse itself. The personae thus become more than their historical or mythological roles.

Nietzsche (1993) argued that to live a meaningful life, we should aim to combine both the Apollonian and the Dionysian principles. Apollo's restraint and Dionysus' wild abandon are equally necessary for artistic achievement. Thus, creativity requires a hybrid deity (Kingsbury and Jones 2009). In this study, Dionysus-Apollo helps to illuminate the creativity-assessment relationship, and provides a means of exploring recent policy moves to assess creative dispositions or capacities. Psychometric approaches to creativity (e.g., Lubart 2018, 2019) often focus on the role of emotions (as opposed to affect), which is an instance of the Dionysian. However, the measuring and capturing of emotions represents the triumph of the Apollonian: a desire for scientific mastery over the unruly aspects of life.

I invoke various personae in the thesis, including Minerva, Venus, Fortuna and Good Hope. These are the goddesses of James I of Scotland's poem the *Kingis Quair*, which is a meditation on the interplay of "thralldom" and liberty, as discussed in the geophilosophical mapping of the definitions of creativity in Scottish education over time (chapter five). Minerva represents wisdom, but also strategic or defensive war, art, craft, justice and — appropriately — schools (Bulfinch 2014). Venus signifies love, beauty and desire, but also victory. Fortuna is the goddess of luck, possibility and doubt, as in Fortuna Dubia, but also *virtus*, or strength of character. Last out of the box is Good Hope. Creativity, education, this research project and the thesis itself are all odysseys that are mapped as we proceed; the conceptual personae are invoked to ensure that we do not get entirely lost.

Summary: Interesting, Remarkable and Important?

> Philosophy does not consist in knowing and is not inspired by truth. Rather, it is categories like Interesting, Remarkable, or Important that determine success or failure. Now, this cannot be known before being constructed (Deleuze and Guattari 1991, p.82)

The thesis is supported by a theoretical ensemble that brings together several concepts from Deleuze and Guattari's philosophy to explore the notions of creativity and assessment that circulate within Scottish education. Underpinned by a materialist, relational and empirical ontology of immanence, these resources also help to construct alternative visions of creativity and new principles for assessment, located within a nomadic creative pedagogy.

Deleuze and Guattari's approach to enquiry is not to ask whether something is true, but whether it is "interesting, remarkable and important" (Deleuze and Guattari 1991; May 2005, p.251). As such, this enquiry focuses on that which is interesting, remarkable and important about the creativity-assessment relationship in the context of Scottish education. I do not claim to have found the truth about creativity and assessment. This is in keeping with the view that education is not a journey towards an answer, but rather, towards more problems (Colebrook 2008, p.36). Although it may not be possible to uncover the truth, Deleuze and Guattari (1994) believe it is possible to identify confusions in thought. The dominance of opinion was considered by Deleuze and Guattari as posing a particular danger, both politically and for thought more generally (jagodzinksi 2017). Hence, this study is attuned to the identification of false problems and confused or knotted beliefs and assumptions which can result in irrelevant or even damaging

policy solutions (Bryant 2020). The following chapter explains the research design, methodology and methods used to undertake this task.

Chapter 4: Becoming a research desiring-machine, or: methodology and methods

Introduction

This chapter describes how I created a research desiring-machine (Deleuze and Guattari 1983) to undertake my enquiry. It is divided into several sections, with the overarching theme being that of nomadic movement (Deleuze 2011), which runs through the thesis as a whole. This refers not only to the research process itself, but also to creative and educational journeys that are mapped as they weave their way through phases of harmony, tension, despair and freedom.

The first section describes the route through the “dark wood” towards an appropriate methodology and research design, and the various twists and turns this took. I provide an account of the qualitative approach I developed for the study, nomadic schizo-methodology (Alvermann 2002; Cole 2013; Bradley 2016). I then explain how this informed a new iteration of the research design. Next, I describe the phases of empirical activity and the methods that were used for data generation. An account of recruitment procedures, participants and research sites is provided, along with a discussion of the challenges involved in undertaking research in schools. I then discuss my use of arts-based approaches to data analysis and constructing the thesis, and why this was particularly relevant for a project concerned with the nature of creativity. I conclude with a consideration of ethical issues, and how questions of validity, trustworthiness and reliability can be approached in research with a theoretical orientation that challenges the assumptions of conventional qualitative methodology.

In the beginning: the initial research design

In this section, I discuss the original research design and how and why it changed. This phase represents the transition from starting out “above ground”, with hope and positive intentions, armed with a map and various useful tools, before descending into a tangled underworld of confusion and complexity — the dark wood. Finally, a way out is found, with the help of new tools and a new plan. This led to a place of yet more entanglements and complexity.
As will be recalled from the previous chapter, the theoretical resources that inform the study are founded on a relational ontology which pays particular attention to the way that everything connects, constantly moves, and “becomes” (Deleuze 1988, p. 123). In this perspective, research is not presented as fixed and definite, but rather as disordered, contingent and shifting.

An important aspect of this process is an acknowledgement of how researchers themselves are "entangled within the assemblages they seek to study" (Coleman and Ringrose 2013, p.6). As such, it is appropriate to reflect on the various twists and turns that the research design underwent.

The background to the changes is that I did not develop the initial PhD proposal myself, as it was an advertised studentship opportunity which I applied for. The original design proposed using the methodology of Critical Collaborative Professional Enquiry (CCPE) to generate curriculum-making projects (Drew et al 2016). The intention was to recruit a group of teachers to develop professional enquiry projects on creativity and assessment, which would in turn produce data for the PhD. The co-funder, the Scottish Qualifications Authority (SQA), would undertake the recruitment of this group.

CCPE is informed by teachers' professional knowledge and expertise (Drew et al. 2016). As an innovative approach, it would seem to be particularly fitting for the topic of creativity. However, my studies were suspended while I undertook a three-month internship with the Scottish Government. On return, it emerged that the co-funder was no longer able to recruit participants as originally intended. Taking into account the practical issues relating to the timescale of the PhD and the structure of the school year, CCPE no longer seemed feasible for this particular study. A considerable amount of time is required to develop CCPE-based projects, since dialogical working, engagement with new and complex ideas, and the practical undertaking of enquiries are in-depth processes, and it is inappropriate to speed these up or curtail them (ibid.). Using CCPE as the vehicle for data-generation involved too many time-intensive stages, including the planning and delivery of CCPE training for participants, and then the design and implementation of participants' own projects.

Further, since the project addresses the relationship between high-stakes assessment and creativity, recruitment focused on the Senior Phase of Curriculum for Excellence, which is the stage in which the summatively-assessed National 5, Higher and Advanced Higher[11] courses take place. As such, there was a need for sensitivity to the various pressure-points faced by schools. Ethically, it was important that the data-gathering method did not place additional burdens on teachers and students. Hence, it became necessary to rethink the research design.

[11] For an overview, see: Scottish National Qualifications, Scottish Qualifications Authority. Available: https://www.sqa.org.uk/sqa/79156.html [Accessed: 18 April 2020]

Finding a way through

As explained in the previous chapters, creativity is a key concern in Deleuze and Guattari's philosophy (de Assis 2015). Their emphasis on taking a creative approach to theory and methodology helped me find a way through the curiously tangled terrain of creativity and its assessment.

I was inspired by various educational theories and methodological approaches deriving from Deleuze and Guattari's work, all of which offer an escape route from dominant ways of thinking about research and about education more generally (Semetsky 2008; Lines 2008). Rather than trying to discover what something "is", these approaches ask what is happening and becoming, how this particular understanding was arrived at, and how alternative potentialities might emerge (Hendricks and Koro-Ljungberg 2015, p.275).

Constructing a nomadic schizo-methodology

As will be recalled from chapter one, I decided that adapting and developing my own methodology was in keeping with a theoretical perspective that is inspired by the work of Deleuze and Guattari. Rather than applying guidelines developed by others, Deleuze and Guattari's (1983) philosophical project is concerned with dismantling the frameworks that direct thought along readymade paths. Further, given the nature of this specific project, an innovative approach seemed fitting (Coleman 2008, 2009). Inspiration was taken from research that applied Deleuze and Guattari's theories to interviewing (Cole 2013, 2016; Coleman and Ringrose 2013; MacLure 2013a; Taylor Webb 2015), ethnography (St Pierre 1997; Grinberg 2013), data generation (Hickey-Moody 2013) and analysis (Bradley 2016; Savat and Thompson 2015). Schizoanalysis seemed an appropriate place to start, since it is Deleuze and Guattari's own approach to method; however, it was developed with clinical settings in mind, rather than educational research, meaning that it requires adaptation.

Schizoanalysis

Schizoanalysis is a method for analysing the "social production of desire" (Taylor Webb 2015, p.440). In the case of education, for example, this involves analysis of education policy as "a machine that produces desires about economy and 'becoming' human capital, but also ideas about democracy" (ibid.). This highlights one of the tasks of schizoanalysis, which is to focus on the points where contradictions and tensions arise (Savat and Thompson 2015). It is a

methodology that is particularly relevant to this project, since paradoxes are inherent throughout contemporary discourse about creativity, assessment and education, as identified in the literature review.

Schizoanalysis uses the concept of the desiring-machine as “a means of thinking about the research assemblage, as that which makes connections between different elements” (Coleman and Ringrose 2013, p.17). This involves relations between the human and the non-human (ibid.). Although schizoanalysis brings attention to the material aspects of the desiring-machine, it also emphasises that research questions should be based on what the machine is actually doing, not what it “is” (Savat and Thompson 2015). The focus is on who the machine is for, what it aims to achieve, and also who it is not for and what it does not do. Schizoanalysis has the capacity to identify, understand and potentially eradicate the desire to control and be controlled (ibid.). It is a methodology that offers:

1. “A way of understanding the rules of the ‘new game’ of continuous education and ‘motivation’, corporate expertise, learning analytics, and high-stakes testing, in the name of transforming and augmenting human capital; and,
2. A means of escape from the above” (Savat and Thompson 2015, p.274).

The overarching principles to be borne in mind for any schizoanalytic research project are that it should:

- Disrupt the coding of desire;
- Understand the coding process (identify precisely how and where the “virus” inserts itself into the coding and reproduces its own code);
- Avoid inserting new code (i.e., contributing to the problem) as much as is possible (adapted from Savat and Thompson 2015, p.297).

For Taylor Webb (2015), there are three tasks involved in schizoanalysis:

1. Removing the pre-existing frameworks and analytical lenses through which the world is organised, coded, constrained and controlled (for example, by questioning the developmental assumptions that underpin education policy);
2. Understanding how desires are produced through desiring-machines; and

3. Both intervening against, and learning to live with, our “preconscious desires” (adapted from Taylor Webb 2015, pp.439-40).

Taylor Webb (ibid.) explains the third task in relation to research into high-stakes testing, in which teachers’ micropolitical strategies are analysed as acts of both resistance and surrender to the accountability measures that are insisted upon in control society. This is a particularly relevant approach for the present study.

Fox and Alldred (2015) apply the notion of machinic arrangement to different stages in the research process, and argue that research ensembles should aim to:

- Identify desiring-machines[12] of human and non-human, animate and inanimate, material and abstract, cutting across what are traditionally considered micro and macro levels;
- Explore how elements in desiring-machines affect and are affected, and assess what bodies and other things do, and what is created through these flows;
- Identify territorialisation and deterritorialisation within the desiring-machines (adapted from Fox and Alldred 2015, p.403).

I was also inspired by Bradley’s (2016) applied schizoanalysis, which brings historical and contemporary data together, enabling a political and cultural exploration of the “creative crack-ups, breakthroughs, breakdowns, blockages, neuroses and misunderstandings” in educational contexts (ibid., p.10).

In drawing on the above, I focused on how the methodology could be applied to the design and undertaking of data generation, and not only on data analysis. For this reason, I thought of it as a schizo-methodology rather than a schizoanalysis. I devised the following methodological questions:

- What are the materials and flows (human and non-human) that comprise this desiring-machine?
- Who is the desiring-machine for?
- What does it aim to achieve? Who or what drives it?

[12] Fox and Alldred’s term is assemblage, but for the sake of consistency I have replaced this with my preferred concept, desiring-machine.

- Who it is not for, and what it does not do? What does it make visible, and what is obscured?
- What beliefs and practices (codes) enter the machine, and how? What are they doing?
- (How) can the coding be interrupted?
- What blockages and breakthroughs can be identified?

Nomadic research

Deleuze and Guattari (1988/2017) developed a geophilosophical cartography to explore the social world, and one of the main ideas within this is their distinction between the nomadic and the State/Royal. Nomadic science is a fluid, multiple and alternate or "vagabond" way of knowing and seeing the world (Deleuze and Guattari 2017, pp.422; 469.). This is in contrast to state science, which establishes set identities, fixed categories and binary divisions. Cole (2013) describes how research processes can be nomadic, or on the outside and minoritarian, yet can also intersect with the State/Royal. This was the case with Cole's research, which was sponsored by the Australian government. The tensions arising from this entanglement are of particular relevance to my study, which could also be considered to be officially sanctioned as the national qualifications agency is a part-funder of the project.

Nomadic enquiry takes account of fields that are beyond the scope of traditional ethnography, such as the mental, the textual and the theoretical (St Pierre 1997). To develop this for my own enquiry, I referred to Cole's (2013, p.221) nomadology, which aims to:

- reveal how subjects can be understood in terms of the unconscious;
- pay attention to that which would be considered as falling between the lines or gaps in more conventional qualitative research;
- focus on movement and speeds in thought;
- attune to politics and the power relationships arising from social enquiry;
- recognise how concepts and language can striate thought;
- give attention to "asignification", or the ways in which the subject is agentic, and escapes being reduced or oppressed by the research process;
- rethink the position of the researcher, and actively discuss how engagement with the field changes the researcher;
- maintain an emphasis on multiplicity, and how ever finer-grained analysis can reveal the multiple;

- think beyond normative values.

Nomads deterritorialise space that has been charted, ordered, fixed and closed. A researcher who practises nomadic enquiry “can never be sure of the field and thus has trouble locating it” (St Pierre 1997, p. 372). The field of research can suddenly expand or appear in unexpected places (ibid.). In this study, the field grew, rhizomatically, into unexpected areas during the coronavirus pandemic. I sensed that it was important to follow the new trails and connections, and the affordances offered by the nomadic design meant that I was free to do so. I traced the developments as policy conferences moved online and opened up to a wider audience than would normally be the case. The creativity war-machine moved up a gear, perhaps sensing that that the crisis offered new opportunities for deterritorialisation and territorialisation, and I witnessed the emergence of the creativity war-machine’s new “creative bravery” concept (discussed in chapter six).

Schizoanalysis-becoming-nomadic

The nomadic approaches discussed above had a considerable influence on my thinking about the methodology. I began to think of it not as schizoanalysis or nomadic enquiry, but a mixture of the two. Hence, it became a “nomadic schizo-methodology”. Why? This can be explained by reference to the origins and purposes of schizoanalysis.

Kolyri (2020) was a practitioner at La Borde, the psychiatric institution that Guattari worked at for most of his adult life. Staff at La Borde received training in schizoanalysis; consequently, Kolyri is familiar with schizoanalysis as it was intended to be applied. Her account is particularly useful because Deleuze and Guattari did not publish any case studies of how schizoanalysis was used with patients (Buchanan 2013).

Kolyri (2020) explains that nomadology is schizoanalysis in political mode, the purpose of which is to address the question first posed by De La Boétie (1577) in the *Discourse on Voluntary Servitude*: “Why do people love and fight for their chains?” (cited in Kolyri 2020, p.488). Schizoanalysis-nomadology seeks to dismantle these chains and the “normalisation of self-denial and negation” (ibid.). In undertaking this task, the schizoanalyst aims for “a radical change of perspective towards a ‘nomadic analysis’” (ibid.) In other words, schizoanalysis “becomes” nomadology when it has a political application, with ethics and pedagogy also being a key focus of this shift (ibid.). Consequently, schizoanalysis-becoming-nomadology is

appropriate for a project which seeks to understand the political and structural factors that education is enmeshed within. This provides the rationale for my attempt to bring the two theories together in a way that is relevant for an empirical exploration of policy desiring-productions and how these affect teaching practice in schools and teachers' thinking.

Rhizoanalysis

The nomadic schizo-methodology was also influenced by rhizomatic methodologies. The rhizome is increasingly popular in educational research (St Pierre 2004). For instance, Honan (2001) developed a rhizoanalysis to map and trace the connections between different discourses and subject positions within an educational context. She analysed the relationships between teachers, departmental advisors, and the texts used in syllabus materials. Honan's concept of "official interpreters" (2001, p.15) describes the role of curriculum advisers who "translate" the syllabus for teachers. This idea was particularly helpful for analysing the role of the local authority creative learning officers in translating and circulating policy ideas and texts about creativity.

Rhizoanalysis makes the regulatory functions of policy documents visible, but also highlights how texts can be read in multiple ways (ibid.). Alvermann (2002) describes how a rhizoanalytical approach liberated her to "see" data anew:

> Because rhizoanalysis provides a different and "freeing" way of looking at data, I find it appealing. For unlike some of the feminist and race-based theories of analysis that I have used in the past, rhizoanalysis has made it possible for me to "see" in the data something other than what I went looking for in the first place (p.126).

This reflects my experiences of applying methodology in previous research projects. Although I had good intentions, aiming to investigate under-researched areas and challenge underlying assumptions, I sometimes felt I was trying to force the data into a framework. The data were often vague, contradictory, or ambiguous, and if they did not fit, they were left out. Rhizoanalysis helped me attune to a new way of understanding data. I began to pay particular attention to the seemingly unimportant and unruly aspects of research. These seemed to insist on attention, and even "glow" with resonance (MacLure 2013a). This is explored in vignettes such as *Boring!* and *Buzzers and Bells* (chapter six).

A new research ensemble

Having assembled a methodology, I reconnected with the research questions and aims. Tensions could well have arisen at this point, as there were predefined parameters for the study. However, the questions and aims were presented in a way that they opened up, rather than closed down, potentialities (Hendricks and Koro-Ljungberg 2015). The questions were:

- What are the notions of creativity in current educational policy in Scotland and how have these evolved?
- What is the relationship between summative subject-based assessment and creativity?
- What differences, if any, exist across different subject domains in relation to creativity and the assessment of creativity?
- What are the curriculum, teaching and learning implications of the summative assessment of creativity in subject-based assessments?

The aims, as originally expressed, were to:

- Develop a definition of creativity within the school curriculum that is better informed by empirical research and educational theory.
- Trial and evaluate assessment practices related to creativity in the school curriculum across multiple subject domains.
- Develop assessment principles and practices to inform the assessment of creativity in future curriculum and assessment policy in Scotland.

The second aim changed to better reflect the theoretical underpinnings, and in its final iteration was expressed as:

- Explore pedagogical and assessment practices related to creativity across multiple subject domains.

The revised aim, taken alongside the research questions, suggested that it would be appropriate to gain insight through discussion and observation rather than through trial and evaluation. In other words, I would generate data about education professionals' beliefs and practices in relation to creativity and assessment through interviews, focus groups and

observations. Reflecting the theory of teacher agency, which supports informed, rather than instrumental, decision-making (Priestley et al. 2015), it seemed inappropriate to impose assessment practices on teachers. Models that had been created by teachers through their own professional enquiries would have been a different matter. There are numerous resources already in existence, often featuring strong claims about how the practices will enable creativity to flourish, or enable students' creativity to be measured or captured in some way (Lucas et al. 2013). However, there is little evidence as to whether teachers find these resources meaningful. An analysis of these resources, along with discussion and observation of professionals' practices would enable me to address the last aim:

- Develop assessment principles and practices to inform the assessment of creativity in future curriculum and assessment policy in Scotland.

Arguably, the questions and aims could have been explored through policy document analysis and a critical review of resources alone. However, empiricism plays a pivotal role in Deleuze and Guattari's ontology. Strongly influenced by Spinoza's (Deleuze 1988) understanding of immanence, Deleuze and Guattari's "flattened" world of experimentation challenges hierarchical ontologies of exploration and the notion that research is an uncovering of that which already exists. Creativity is of central importance within an immanent ontology, as the epistemological premise is that knowledge is created through experience and experiment. In the plane of immanence, we generate the enquiry ourselves through creative interactions with the world (Hendricks and Koro-Ljungberg 2015, pp.274-5). Hence, the study needed to be empirical.

I arrived at a design which featured three phases of empirical activity, influenced by Guattari's three ecologies (2000). The spheres of activity were:

- school-based interviews and focus groups with education professionals;
- local authority-level interviews and focus groups;
- engagement in policy events at the local and global levels.

Ecosophy (Guattari 2000) is a way of understanding the different spheres of social existence and how they interact with each other. Specifically, it is attuned to the processes by which Integrated World Capitalism (IWC) "infiltrates and saturates the unconscious" (ibid., p.7). Ecosophy comprises the three ecologies of the macroscopic (environmental, or global); the

molecular (mental, or subjective); and the *socius* (intermediary, or social). In my analysis, globalised policy-influencing bodies are understood as being enmeshed within the macroscopic; the national education system and the local authorities are part of the intermediary *socius*; and the molecular is the realm of the individual education professionals.

In ecosophy, social existence is akin to an expanded web in which everyone and everything is inextricably connected. This is what Guattari refers to as transversality (ibid.). The significance of transversality for educational research in general, and for this project in particular, is that it is inherently concerned with what it means to learn and to create (Guattari 1995). Transversality was influenced by Guattari's involvement in Marxist movements, and it aims to redress the "pyramidal hierarchisation" of power relations (Guattari 1984, p. 23). The purpose is to create a collective or group subject which has a transformative potential (Guattari 2000).

Teaching is a profession, and research evidence suggests that teachers hold shared beliefs and values, or a professional discourse (Priestley et al 2015). To analyse teachers' beliefs and values, I use the phrase "ensembles of enunciation"[13] (Guattari 2013, p.17). This refers to machinic arrangements of people and their utterances (Goffey and Pettinger 2014), and bears comparison to Foucault's concept of discourse, which is an admittedly more concise and widely understood term. However, Goffey and Pettinger (ibid.) argue that, compared to discourse, "ensembles of enunciation" places greater attention on the micropolitics of desire. I use this concept to consider how macroscopic and *socius* desiring-productions of creativity and assessment become internalised by teachers. I considered what the teachers' vocabulary suggested about their beliefs regarding creativity, or the purpose of education more generally, and how this connected to ideas and views held by their colleagues and the wider profession. To understand group and trans desiring-machine relations, Guattari's "cartography of ensembles" (2000, p.20) was used to map the connections between and in desiring-machines, based on an understanding of subjectivity as multiple and relational.

The design was intended to be iterative, or nomadic, meaning that the different stages of the research process were not conceived of as linear and self-contained. Rather, I thought of them as expanding yet also entwined, similar to the three "interlacing" spheres representing the

[13] This phrase is usually translated as "assemblages of enunciation". Reflecting the problems that have been identified with "assemblage" as a translation of *agencement machinique* (Wilson 2016), I use the terms ensemble or arrangement.

“pathways of power, knowledge, and self-reference” in Thompson and Cook’s adaptation of schizoanalysis (2015, p.414). These spheres “don't stop mixing together in a strange ballet” (Guattari 2013, p.3). The challenge was to try and map the movements of this strange dance. I now discuss the three interlocking research spheres (Thompson and Cook 2015) within the territory of education in which I gathered data: policy, schools and local authorities.

The sphere of policy

To recap, the first research question is:

- What are the notions of creativity in current educational policy in Scotland and how have these evolved?

To answer this, I undertook a policy analysis. This involved an exploration of the *socius,* or intermediary, level, which in this case means the Scottish school system. I analysed the policy documents and resources produced by Scottish Government, Education Scotland, Creative Scotland and other relevant national bodies. It was also necessary to address the global, or macroscopic, policy codes in relation to creativity and assessment, and how these entwine with local developments. As discussed in the preceding chapters, a supra-national consensus on creativity and assessment has emerged, driven by powerful actors such as the OECD. Reflecting this, particular attention was paid to the recent moves to develop a creativity test as part of the next round of PISA assessments and to the growing influence of the creativity movement as a war-machine; a nomadic or mobile policy network (Williamson 2016).

The sphere of schools

This phase was designed to address the following research questions:

- What is the relationship between summative subject-based assessment and creativity?
- What differences, if any, exist across different subject domains in relation to creativity and the assessment of creativity?
- What are the curriculum, teaching and learning implications of the summative assessment of creativity in subject-based assessments?

The school-based element of the empirical study was undertaken over a period of 10 months, and involved visiting six secondary schools, located in four different local authority areas. In total, 19 teachers from these six schools contributed to the study.

I aimed to recruit professionals either currently teaching in, or with relevant experience of, the senior phase of the Scottish school system. This comprises the secondary school year cohorts of S4-S6. During this phase, students undertake National Qualifications, which form part of the Scottish Qualifications Certificate offered by the Scottish Qualifications Authority. Since the project aims to explore the relationship between creativity and high-stakes assessment, particular attention was given to the National Qualifications that are externally examined, and which are generally required for higher education admission: National 5, Higher and Advanced Higher. The aim was to recruit teachers specialising in a range of different subject disciplines, not just those traditionally associated with creativity. This would help answer the research question regarding what differences, if any, exist between subject disciplines in relation to creativity. The intention was to recruit 3-5 teachers from each school, as this would enable analysis of different teachers' approaches within the same school context.

The teachers and their school contexts

An overview of the participants and their schools is provided below; to protect anonymity and to try and ensure that comments cannot be traced back to participants, details have been kept to a minimum, identifying information has been removed, and generic pseudonyms have been used.

The Scottish Government School Information Dashboard[14] was the source of the data about the schools. This site contains statistics, updated annually, for all schools in Scotland, including information about demographics and attainment. The Scottish Index of Multiple Deprivation (SIMD) is used in the statistics. SIMD is the Scottish Government's methodology for identifying deprivation and is used across all policy areas. It involves the creation of data zones, ranked from most to least deprived. The Dashboard uses quintiles, with Q1-3 representing the "most deprived" zones, and Q4-5 the "least deprived". These refer to the areas in which students' residences are located. The attainment statistics are a measure of the school's actual performance compared to a "virtual comparator" predicting what the attainment level "should" be, given the demographic context and historic patterns of attainment. There is much that could be said and indeed challenged about all of this, but it is not relevant to this discussion. The

[14] Scottish Government School Information Dashboard. Available: https://public.tableau.com/profile/sg.eas.learninganalysis#!/vizhome/SchoolInformationDashboard-Secondary/Introduction [Accessed: 21 March 2020]

statistics are included to provide an “objective” account of the schools, rather than just my own descriptions and assumptions about them.

- Burgh High: located in local authority A, a mixed urban/rural area in the central belt with a population of approximately 100,000.

  School characteristics: non-denominational[15]; school roll approx. 1000; affluent socio-economic demographic (70-<80% of students live in the most affluent SIMD 5 datazones, compared to the national average of 20%). The school has a high level of attainment (above the national average of 88% students attaining 1+ awards at SCQF level 5 or better). It is located in a new private finance initiative (PFI)-funded building on the outskirts of a small town (population approx. 10,000). The school is surrounded by countryside.

  Data generation: Two visits. One interview with a class teacher (James, English teacher); one workshop-style focus group with the same class teacher and three other class teachers (Catriona, Biology; Kirsty, English and Business Studies; Lyndsey, Physics). The intention was to undertake an observation of the S4 English class, but this was not possible due to the pandemic.

- Parkview Secondary: located in local authority B, a mixed urban/rural area in the central belt. The school is set within a housing estate (mixed private and council housing) in one of the main towns in the area (population approx. 20,000). It is a post-industrial area with pockets of high deprivation, the traditional industry having closed down in the 1980s. The area borders onto a much larger urban local authority.

  School characteristics: non-denominational; small school roll of approx. 700; mixed socio-economic demographic but the highest percentage (30->40%) live in datazones in the more deprived SIMD Q2. The school has below national average attainment (less

[15] In Scotland, local authority (state)-funded schools are either denominational or non-denominational. There are currently 367 local authority-funded denominational schools (out of a total of 2,476 schools), of which the majority are Catholic. Denominational schools are open to students of all denominations and faiths (or none) and are run in the same way as other local authority schools. The Curriculum for Excellence is taught in all local authority-funded schools regardless of whether they are denominational or not. Denominational schools have been part of the state sector since the introduction of the Education (Scotland) Act 1918.

than 88% students attaining 1+ awards at SCQF level 5 or better). The school is located in a traditional Victorian-era building with 1970s-era extensions (the school condition is classified as “poor”).

Data generation: Two visits: one interview with the acting headteacher (Gordon, subject specialism: Psychology); one interview with a class teacher (Emily, Art and Design). Assessment resources, collated on a website they had created themselves, were shared with me by another class teacher (Charlie, Music), who opted not to participate in an interview.

- Glen Academy: located in local authority C, a mainly rural area in the north of Scotland with a population of approximately 100,000. The school is based in the largest town in the local authority (population approx. 20,000). Employment in the town is centred around a traditional industry, which many of the students’ families work in.

  School characteristics: non-denominational; small school roll of approx. 700; less affluent socio-economic demographic (0->10% of students live in the most affluent datazone, SIMD Q5). The school’s attainment is below the national average (less than 88% students attaining 1+ awards at SCQF level 5 or better). It is set in a 1970s-era building within a residential area (mixed private and council housing).

  Data generation: Two visits. One interview with the head teacher (Isabel) and depute head teacher Graham (subject specialisms: English and Photography); one workshop-style focus group with class teachers (Dana, English; Peter, Maths; Laura, English and Media Studies). A follow-up online interview was held with one of the focus group participants (Laura, English and Media Studies). The intention was to undertake two classroom observations with the other two focus group participants’ Higher classes, but this was not possible due to the coronavirus pandemic.

- Lochside Academy: located in local authority C, a mainly rural area in the north of Scotland with a population of under 100,000.

  School characteristics: non-denominational; school roll approximately 900. The school has below national average attainment (less than 88% students attaining 1+ awards at

SCQF level 5 or better). It is located in a new PFI-funded building on the outskirts of a small town (population approximately 10,000). The school has a large catchment covering the surrounding rural area.

Data generation: Focus group with depute head teacher and four class teachers (specialisms: Beth, English; Callum, English; Jacqueline, maths; Helen, physics). The intention was to return to this local authority and deliver a further workshop with the teaching and learning group, which included teachers from Lochside, but this was cancelled due to the pandemic.

- St Drostan's Academy: located in local authority D, a large urban area in the central belt with a population of over 350,000. It is located in one of the major towns in the area (population approximately 40,000).

  School characteristics: denominational; less affluent socio-economic demographic (the majority of students live in the most deprived datazones of SIMD Q1-3). The school has high attainment (over 88% students attaining 1+ awards at SCQF level 5 or better). The school roll is approximately 1,000. The school is based in a large town (population <50,000). The school is located in a refurbished 1970s-era building.

  Data generation: one focus group with head teacher (Matthew, specialism: music) and a class teacher (Mhairi, drama) which was joined by the depute head from St Medan's.

- St Medan's High: located in local authority D, a large urban area in the central belt with a population of over 350,000.

  School characteristics: denominational; less affluent socio-economic demographic (the majority of students live in the most deprived datazones of SIMD Q1-3). The school has high levels of attainment (over 88% students attaining 1+ awards at SCQF level 5 or better). The school roll is approximately 1,000.

The school is set in a new PFI-funded shared campus[16] with a non-denominational school, community education centre and extensive sports facilities, on the outskirts of a large town (population approximately 50,000). It is a post-industrial area with pockets of high deprivation, the traditional industries having closed down in the 1980s and 1990s. Interview with depute head teacher (Claire, specialism: drama). The depute also participated in the focus group at St Drostan's. The intention was to return to St Medan's and undertake interviews or a small focus group with class teachers, but this was not possible due to the pandemic.

As can be seen, the research involved a diverse range of schools, located in both rural and urban areas, with higher and lower levels of affluence and with different patterns of attainment. The schools are a mix of large and small, denominational and non-denominational. The towns and areas in which the participating schools were located were varied, too: this included densely-populated post-industrial areas; rural areas where the majority of students' families were employed in traditional industries; and affluent towns where students' parents were described as "professionals".

The sphere of the local authorities

Two focus groups were held with education professionals working within local authority E, a small local authority located in the central belt with a population of under 100,000. These groups were facilitated by the local authority's creativity policy lead, who provided meeting rooms and catering and used their email distribution list to circulate an invitation to participate. In total, seven participants were involved: one secondary school teacher (Robert), one local authority education officer (Rachael), two education consultants (Lewis and David), a further education lecturer (Eleanor) and two early years practitioners (Joanne and Gail). This group met twice, once in person and once online during the pandemic. The online meeting focused on how ideas about creativity and assessment, and education more broadly, were changing and adapting in response to the ongoing public health crisis. Seven participants were involved in the first focus group, and five took part in the online meeting.

[16] The Scottish Government's shared campus policy has been promoted since the 2000s. In this model, a denominational and a non-denominational school (or two schools of different denominations) share facilities such as dining halls, gyms, libraries, sports facilities and playgrounds, but retain their individual identities in all other respects. Source: http://www.schoolsworkingtogether.co.uk/documents/education-and-a-shared-future.pdf [Accessed: 23 January 2019]

As discussed above, the original intention was to hold several focus groups that would bring together professionals from different local authority areas. The model agreed with local authority E was that the focus groups would provide a “safe” space for education professionals to share ideas in an enabling environment. This approach reflected local needs and provided some sustainability, as participants built on this in various ways, for example by undertaking their own, independent creativity initiatives. Thus, this method can potentially contribute to breaking down hierarchical approaches (Drew et al. 2016).

Official interpreters

Two local authority officers with responsibility for promoting and supporting creativity in schools were also interviewed as part of the research. One, from local authority E, facilitated the focus groups described above; the other was from local authority F, a large urban local authority. These were semi-structured interviews, both conducted in public locations since this was convenient for the participants. The purpose of these interviews was to understand how education policy desires are produced and coded within the local government sphere, and then how these connect into to schools and individual teachers. The previous phases of research had made me aware of the vital intermediary role that local authorities play in driving forward the State education desiring-productions, and I needed to find out more about how this was happening; hence the rationale for including the officers in the research.

Negotiations

Obtaining permission from local authorities to undertake research in schools and with teachers was a lengthy and complex process. The first step was to identify which local authorities to approach, and then seek permission from them to contact their schools and teachers. This was necessary since state schools in Scotland are owned and administered by local authorities, and teachers are employed by them. From my experience in undertaking other education research projects, I was aware that headteachers would not give permission to undertake research in their schools without evidence of prior agreement from the local authority.

There are currently 32 local authorities in Scotland; contacting all of them was impractical, so I aimed for five. The selection of the five local authorities was practical and opportunistic in that I took advice from my supervisors, who had recent experiences of undertaking research in different areas across Scotland. This provided insight into which local authorities were more

likely to have a positive view of research requests, and where there were departmental connections that might be utilised.

Gaining access involved extensive negotiations with gatekeepers. I also had to comply with each local authority's external research processes and ethical procedures. These varied considerably and were time-consuming. Local authorities approved the request on the condition that the research involved minimal interruption. For example, I was not requiring students to undertake any additional work. Fieldwork had to be restricted to a limited number of interviews or focus groups with a small number of staff who volunteered to participate, provided that the head teacher gave permission for this. The application process did cover the possibility of observations in addition to interviews and workshop-style focus groups, but local authorities were clear that this was something that would need to be negotiated with teachers and headteachers.

Once permission was granted, the next stage was to promote the research to secondary schools within the authority. In most cases, the invitation was circulated by the local authority. Some local authorities gave me permission to contact schools myself. In total, I gained permission from five local authorities, although only schools from four of these local authorities ultimately agreed to take part.

Selection and recruitment

Gaining permission through this route raised the possibility of bias, as there was a risk that local authorities might direct me towards their "success story", highest-attaining schools, or those most likely to present an overly positive view regarding the current state of play in education. As my approach was to attend to the micropolitics and maintain an awareness of who and what is silenced in research (Taylor Webb 2015), I tried to balance this by drawing on approaches to qualitative case study methodology informed by Deleuze and Guattari's theory. Wood and Ferlie's (2003) Deleuze-inspired research used a set of criteria to facilitate case study selection from a range of possible options. Using data from the Scottish Government's School Information Dashboard[17], I deliberately selected schools with different contexts and characteristics, in the hope that this would provide diversity.

[17] Scottish Government School Information Dashboard. Available: https://public.tableau.com/profile/sg.eas.learninganalysis#!/vizhome/SchoolInformationDashboard-Secondary/Introduction [Accessed: 4 April 2020]

One way of escaping from the local authorities' control was to gain access through a molecular crack (Coleman and Ringrose 2013); namely, the local authority officers with responsibility for creativity policy. They were often more receptive to my research requests, and since this was their area of responsibility, it was possible for them to grant approval. This was the approach in local authorities A and E. The creativity officers circulated the research invitation to their contacts in schools, so that the information reached class teachers directly, rather than via senior management. However, class teachers ensured that senior management were always informed about the research.

A particularly thorny issue concerns how the research entwined with the arboreal hierarchies of schools. Members of senior management may have been enthusiastic about the project, and as such gave permission to recruit in the school, but in one instance it transpired that the class teachers who took part in a focus group had not been fully informed about the research and had not seen the information sheets I provided. The vignette *Provoking and Provoked* explores this in detail.

Motivations

Generally, senior management were interested in participating if they had a background in research, or if they specialised in an expressive arts subject. There was no identifiable pattern to the class teachers' motivations, other than a general interest in discussing education policy.

The teachers specialised in a variety of subjects although, perhaps surprisingly, only one art and design teacher participated. However, there are many subject areas that were noticeably silent. There were no representatives from social studies, modern languages, physical education, food and craft technology or computing. I did not always know in advance what subjects the class teachers who volunteered to participate in the focus groups would specialise in, as headteachers would typically circulate a notice about the research opportunity to all teachers and then whoever wished to participate would turn up on the day. The presence of both STEM and arts teachers in the same focus group facilitated the generation of particularly rich data into the differences and similarities in creativity across different disciplines.

Methods

Interviews and focus groups as desiring-machines

> Thinking the practice of interviewing with a Deleuzian ontology requires that I produce practices that are entangled in order to allow the collision of forces to join other enactments and assemblages. (Mazzei 2013, p. 738)

The interviews and focus groups were thought of as desiring-machines (Deleuze and Guattari 1983), meaning that I envisaged them as ensembles of material elements, both human and non-human. This included the interviewer and interviewees, the school buildings, classrooms, teaching resources, assessment models and policy documents. They also involved non-visible components such as beliefs and experiences, as well as those aspects of the ensemble which were vital but not physically present in the interviews — the students, their parents, policy makers and politicians, for example. Seeing interviews as desiring-machines enables the researcher to identify the flows of meaning and affect (Wilson 2016), and to identify how these desiring-machines connect to other ensembles.

The interviews and focus groups were all variations on a theme. In *Difference and Repetition* (1994), Deleuze suggests that repeating a method produces variation and newness rather than sameness. I invoked this dance of repetition and difference by undertaking repeated visits to research sites (where possible, prior to the lockdown) and re-interviewing and re-engaging with participants at different times and in different places. The intention was to see what differences were produced by reassembling with the participants but in different contexts — for example, a one-to-one interview following a focus group session, or a second focus group held online mid-pandemic, which had a very different dynamic from the physical meetings held pre-pandemic.

It might be expected that creative methods would be used for the fieldwork. However, the interviews and focus groups had a fairly conventional format. During one interview, I discussed this with a participant, who believed that traditional methods were appropriate:

> That fits well with schools. They understand those methods. [Isabel, Headteacher, Glen Academy, Visit 1, Interview 1]

This was reassuring to hear. Additionally, persuading local authorities to grant permission to undertake the research was a struggle, as discussed above. Conventional methods were

viewed positively by the local authority external research request panels since these were familiar to them and easier to communicate to schools.

The interviews comprised face-to-face, semi-structured discussions, with a topic guide to help ensure that the same issues were raised on each occasion, for the sake of internal coherence (appendix C). The focus groups typically began with an informal presentation that introduced the issues to be discussed, and had slides containing images of the provocations, or elicitation devices. There were then three or four questions for the groups to discuss, depending on the time I had available, but these questions were a guide; participants took the discussions in all manner of rhizomatic directions, as they deemed appropriate. The questions were open enough for participants' talk to roam freely around the themes of creativity and assessment. The fieldwork took place in school offices, classrooms and meeting rooms. Before proceeding, the information sheets and consent forms I had provided in advance of the meeting were discussed, and any questions about ethics procedures were answered.

Provocations

Elicitation devices, or provocations, were used during interviews and focus groups. As Wilson (2016) argues, "images serve as connection points, as ways to plug into a multiplicity of knowing, feeling and desiring-machines" (p. 56). The aim was to disrupt the readymade *frayages* of dominant opinions, which give rise to illusions and false perceptions (Colebrook 2008). Provocations help achieve this, since they interrupt thought by introducing difference, as well as embodied reactions (pleasure, anger, disinterest, puzzlement).

I used images from creativity movement literature and assessment models in which the themes of difference and repetition were evident. I wanted to see how the professionals interacted with the images, and what flows of affect and desire, and what intensities, could be mapped. Did the images encourage discussions to flow and gather speed, or did they fail to provoke interest, grinding the machine to a halt or slowing it down as participants struggled to find any relevance in the images? Did the images provoke an intense reaction, of either like or dislike? Was consensus or discord evident?

Wheels and webs

The rationale for selecting Lucas et al.'s (2013) creativity wheel as a provocation (fig.3) was that it appears in different iterations across various policy documents and in the grey literature, as

well as being shown on slides during presentations at policy events. In each iteration, the wheel is altered for the specific educational context, but always retains its essential components. The wheel aims to provide educators with a means of assessing the student or rather, "creative learner" who displays the five habits of mind (Lucas et al. 2013). The construction of these five habits as creativity is discussed in detail in chapter two; the focus here is on how images of the wheels were used to generate data. Wheels also invoke the cogs of the machine, reinforcing the machinic metaphors that inform the enquiry.

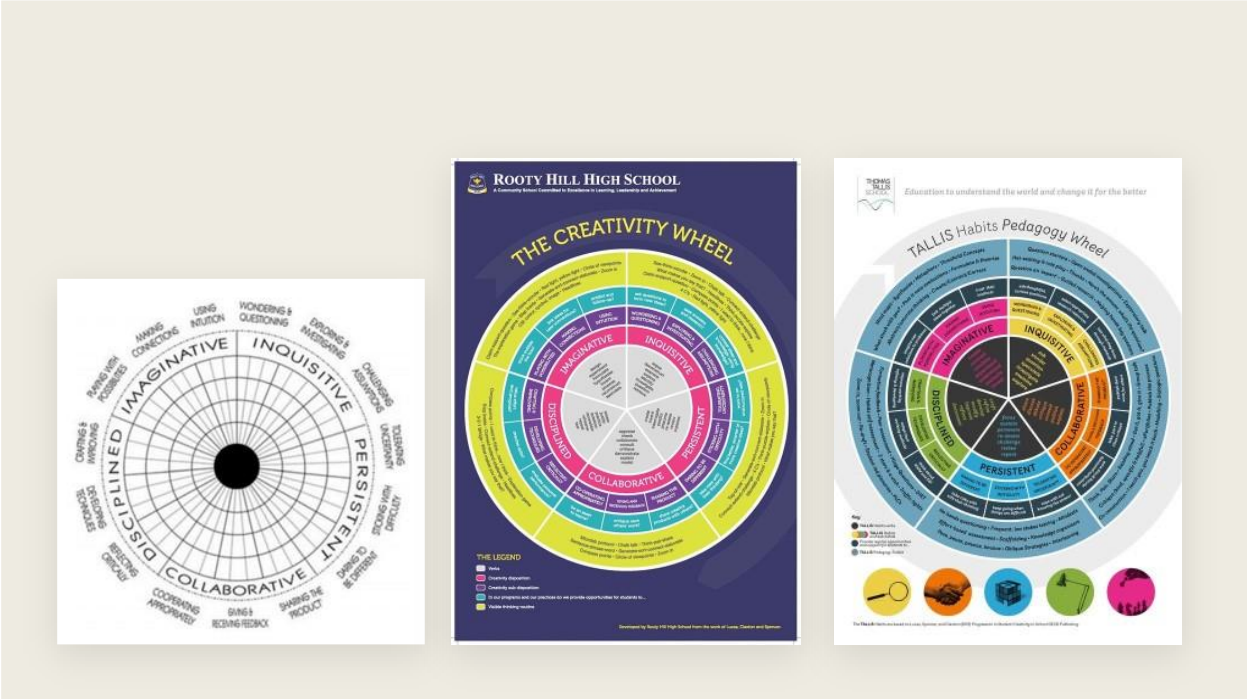


Figure 3: Analytical collage: Creativity wheels[18]

The last two wheels (fig.3) are colourful, vernacular adaptations of the original (reproduced in the OECD document *Progress in Student Creativity in Schools* (2013)). For the Thomas Tallis school, creativity is constructed as "habits and sub-habits"; in the Rooty Hill High School version, these become "dispositions and sub-dispositions". The words and phrases used for the habits/dispositions and sub-habits/dispositions are identical; difference occurs in the outer circle, which is labelled "visible thinking routine" for Rooty Hill, but which becomes the "pedagogy toolkit" in the Tallis model. This section of the wheel reflects differences in local education systems and curricula, as well as school-specific policies and practices.

[18] Sources: Lucas (2016) "Creative Habits of Mind"; Thomas Tallis School (Kidbrooke, England) "Habits Pedagogy Wheel" and Rooty Hill High School (New South Wales, Australia) "Creativity Wheel" (OECD 2013)

In Scottish education policy, the wheel becomes a spiderweb. The web expands or contracts in response to what the individual records on it. It is referenced throughout the plateau *Shrinking and Growing* (chapter six):

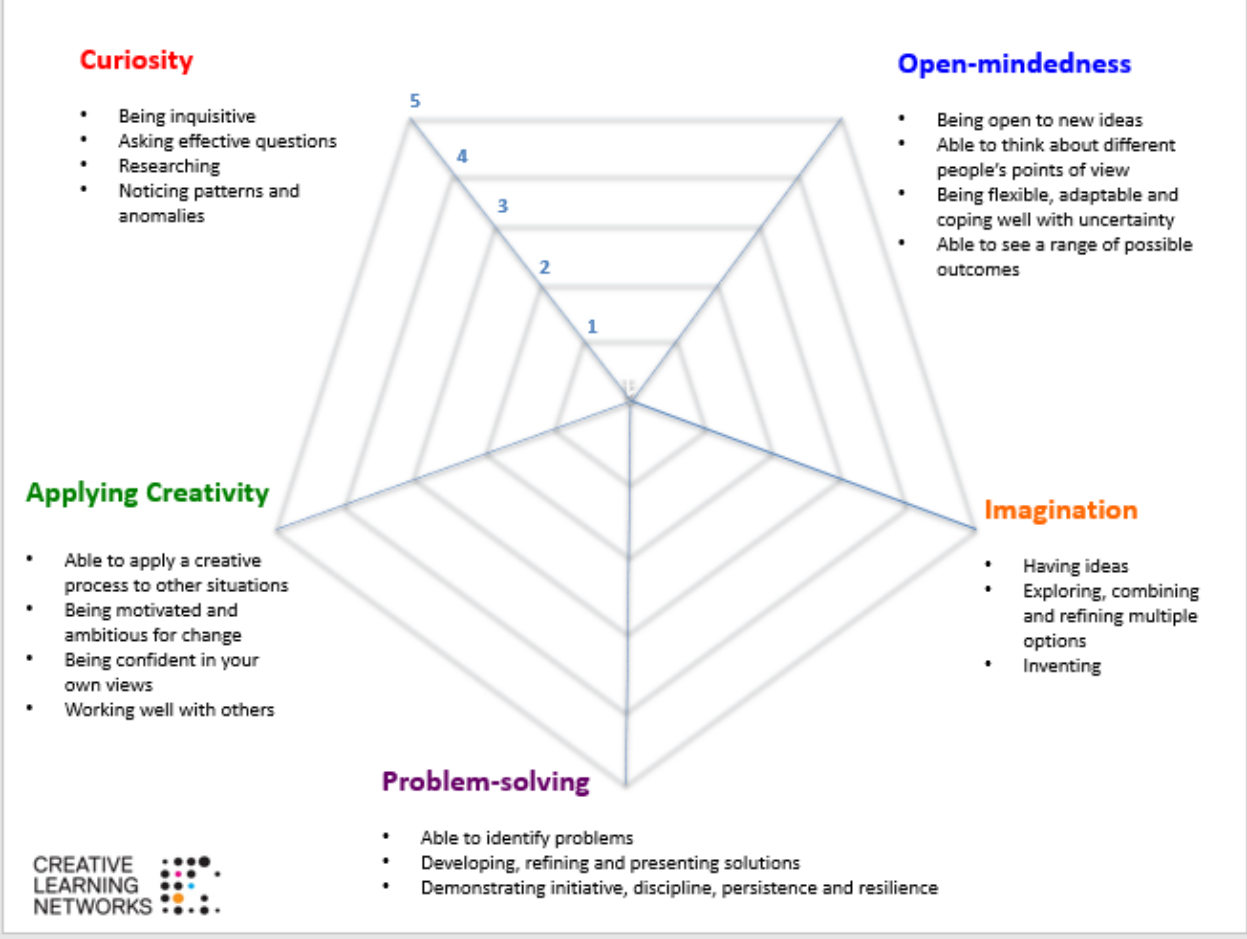


Figure 4: Education Scotland. Spider Web[19]

Data analysis: Pickaxe and torch

> Images constantly act on and react to one another, produce and consume … We are thus held in a chain of images, each in its place, each in itself an image, and also in a web of ideas which function as words of command. (Deleuze 1978, n.p.; cited in Wilson 2016, p.58).

The territory of education is full of repeated, insistent yet slightly varying images and texts in relation to creativity and its assessment. These are conveyed via channels such as policy and

[19] Available: https://education.gov.scot/improvement/self-evaluation/planning-for-and-evaluating-creativity [Accessed: 3 February 2020]

guidance documents, grey literature, social media posts, and policy and practice events. These policy messages are then translated in sometimes contradictory ways by education professionals. Resistance to these “words of command” (Deleuze 1978, n.p.) were also evident.

To analyse and re-present this interplay between control and resistance, I developed the concept of the pickaxe/torch. This derives from a comment made at a conference on creativity and education. One of the organisers exhorted all those involved in education, including (or perhaps especially) researchers such as myself, to bring a torch, not a pickaxe, to the creativity agenda. This implied that the pickaxe, or critique, was a negative and destructive act, whereas people should be positive and pass on a “torch of light” instead. The organiser was an education consultant and member of the creativity war-machine, and I had encountered them in other contexts, so they were familiar with my views. I respond to this potential criticism by using the pickaxe as a means of finding a way through the tangled mess, and the torch to illuminate what is happening in the undergrowth. However, I also reflect on how these can be used for positive, constructive acts as well, and develop the pickaxe/torch into one of the principles for a nomadic, creative pedagogy.

Nomadic analysis

Cole (2013) provides examples of how a nomadic data analysis differs from a conventional approach. It is attuned to signs of unconscious forces that may settle in forms of otherness. Phrases used in the research interviews take on new life in nomadic analysis, with particular attention given to strange, contradictory or puzzling phrases, which Cole describes as cracks in normative language where possible meanings expand outwards and create a plane of becoming or immanence (ibid.).

The nomadic is related to the ways in which, like a stranger in an unfamiliar land, meanings and actions can be misunderstood, or ignored (ibid.). Nomadic analysis can provide a means of connecting different worlds. In an extract from Cole’s interview transcripts, an interview is disrupted by a “male interrupting”, who starts haranguing Cole and the participant about politics and religion. Cole describes this as a “voice that designates the passage to another world of conflict and violence” (2013, p.230). In the findings, I attempt to achieve a connection to other worlds through the vignettes, in which figures from other worlds sometimes appear.

Nomadic analysis involves a social cartography that extends and plays with the forms of the real (Cole 2013). While such issues present insurmountable problems for state science, they are accepted as an integral aspect of nomadic science (Hodgson and Standish 2009, p.323). Nomadic analysis acts as a "kind of magnetism, drawing out the elements of the data with the greatest speeds and potential for transformation that is non-sedentary" (Cole 2013, p.225). This involves paying close attention to the seemingly unimportant throwaway comments, moments and asides, and seeing them instead as important and vital (ibid.). The vignette *Boring!* explores this theme.

Schizoanalysis

Guattari's (2012) diagram for schizoanalysis is an aesthetic model, and has been applied in educational research in various ways (Bradley 2016; Cole 2016). Guattari's model explores how subjectivity is shaped by ideas, technologies, structural flows, and the environmental context in which we live (Cole 2016; Walkerdine 2013).

As discussed above, there are four divisions of the diagram, relating to the existential (Territory and Flow) and the incorporeal (Universe and Phyla). Territory is used by Deleuze and Guattari in the sense of the territories which animals create through continual patrolling, the process of which generates, maintains or extends invisible boundaries (May 2005). In this study, Territory refers to the global terrain of education, but is also used at the molecular or micro level to describe the teachers' and local authority officers' worlds. In the case of local authority officers Rachael and Fiona, for example, Territory encompasses the local authority that employs them, the colleagues they work with, and all the students, teachers and education settings that lie within the local authority boundary. As I spent a necessarily short amount of time with the people who participated in the research project, I only gained a limited view of their worlds, gleaned from what was mentioned to me in the interviews. It should be acknowledged, then, that these are only partial maps. They are also iterative, or nomadic: for instance, when I returned to Parkview for a second time, my understanding of the Territory changed considerably from the map I had (mentally) sketched on the first occasion.

Flow (F) is used by Cole (2016) to describe the fluctuations of social experience. I use this term to analyse factors such as the flow of capital. For instance, this can refer to education funding streams, which are channelled at the national and the local government levels. Flows fluctuate, constrict and produce difference. One local authority might have access to additional money

from the national government for programmes aimed at improving children's attainment. Another local authority, facing budget difficulties, might cut funding for programmes such as music instrument tuition. This is the varied state of play across the local authorities within the Territory of the Scottish state education system. Flows also carry directives from the national level regarding the teaching profession, its pay and terms of employment, for instance.

Universe refers to the realm of thought (Walkerdine 2013). Ideas from the Universe crystallise in the form of beliefs about creativity as the ability to problem-solve, for example, which in turn is developed into actual, often digitised, artefacts. These form the Phyla (Φ), and can take the shape of attainment data, algorithms, online "creativity skills" modules, and social media posts. They are machinic in the sense that they are ensembles of the more-than-human (Piotrowski 2020), involved in producing and conveying desires to and from the local and global spheres. For instance, Cole (2016) uses Phyla to analyse the new identities being shaped in and through the online presences of young Sudanese-Australians. The direction of the relations between the four divisions can be portrayed in various ways, with one example provided below (fig.5).

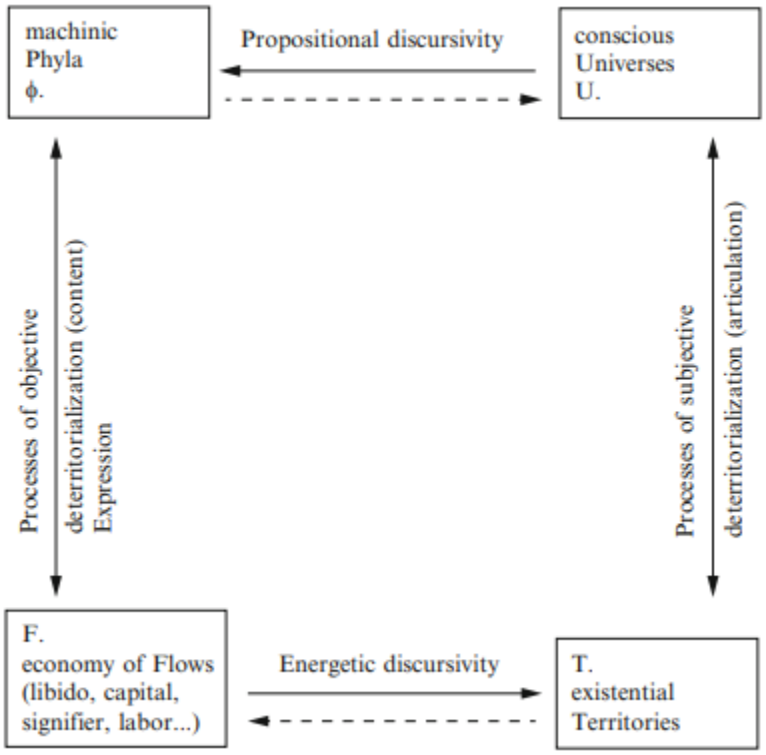


Figure 5: Guattari's schizoanalytic diagram[20].

[20] Available: https://diagramworkshop.wordpress.com/2011/12/07/diagramming-guattarideleuze/ [Accessed: 4 November 2019]

In terms of applying the model, I kept in mind the following analytical questions:

- What is this territory?
- What are the flows, and what has particular intensity? What are the manifestations of desire, capital, labour…? What has insistence?
- What might disrupt and smooth this territory? Are there any molecular cracks visible?
- What are the ideas here, and where are they emanating from? What desires motivate and propel these drives?
- Where are the limits of the boundaries, and when do these become “visible”? What happens when they are pushed up against? What transformations occur at such pressure points?

In relation to State and global, or socius and macro, policy drives, Thompson et al. (2021)’s reworking of assemblage theory proved particularly useful. It is explicitly aimed at policy analysis and poses six analytical questions, along with associated sub-questions (fig.6). These are described as “strategies for orientation, a map of the assemblage that enables experimentation” (ibid., p.8), and can be rearranged as required for the purposes of the research.

Number	Question	Sub-Questions[1]
1	*What is the territory of the assemblage?*	What problems does policy-making address? (properties) How do those problems lay claim to importance? (de- and re-territorialisation)
2	*What strata does the assemblage face?*	What are the values underpinning what policy-making aims to address? (axiomatics) How is that policy problem sustained? (stratification)
3	*How does the assemblage make consistent the multiplicities of desire that operate within the individual, the collective and the organisation?*	What does the policy make desirable? (plane of consistency) How are multiple and competing desires identified, organised and reconciled? (segmentation)
4	*How are bodies, actions and passions related to the collective assemblage of enunciation?*	What can the policy maker and the policy-making organisation do? (ethology) What can the policy text do? (pragmatics) How do the two interact? (articulation)
5	*What incorporeal transformation does the assemblage produce?*	How does the act of policy-making change the meaning of bodies? (sense) How are the capacities of bodies limited or expanded? (event/intensity)
6	*What is the limit point of the assemblage?*	What changes render the policy-making assemblage incoherent? (lines of flight) How does the policy-making assemblage act to reconcile differences and produce coherence? (coding)

Figure 6: Thompson et al.'s assemblage theory policy analysis questions[21].

Since Thompson et al. (2021)'s methodology is attuned to the analysis of global education policy, it was particularly relevant for this study, and is used in chapter five to explore Education Scotland's construction of creativity, and the OECD PISA creativity assessment instrument.

Rhizo-textual analysis

I applied ideas from rhizo-textual methodology (Alvermann 2002; de Freitas 2012; Honan 2001) to the texts I analysed. Conventional linguistic theories do not apply in a rhizo-textual analysis. Instead, the focus is on what texts do, and how they produce change. This recognises that texts, like rhizomes, connect with readers and other texts (Alvermann 2002, p.117). Hence, I considered how creativity and assessment texts connect with other people and things, and what it is that they desire to do, what affects they are producing.

Taking inspiration from Wilson's (2016) and Honan's (2001) enquiries, I analysed the data as I went along, making notes on the transcripts as I typed up the audio recordings. Using Guattari's schizoanalytic cartography (2013) to diagram the terrain, I observed that some desiring-productions emerged as more significant and powerful than others. These insights into what was "becoming" informed the development of subsequent phases of the study. Many tensions

[21] Source: Thompson et al. (2021, p.8).

and confusions also emerged in the analysis. These are referred to as rhizomatic knots (de Freitas 2012). The knotted tangle could potentially be cut, as represented by the idea of the caesura, and could potentially grow in a rhizomatic fashion again, if the environment is conducive (Deleuze 1994, p. 172). For Deleuze, a paradox can have a positive force, in that it can be a stimulus to thought. Hence, an important stage in the analysis is recognising where the knots are.

Telling tales

> I believe that writing always means becoming-something… I believe that one writes because there is life going through you… (Gilles Deleuze from A-Z, 2011, E for Enfant)

As will be recalled from chapter three, Deleuze and Guattari (1994) describe how ontological confusions arise out of our milieu "like vapours from a pond" (p.49). If there is no solid ground, no fixed truth or reality on which attempts to know the world though research can be built (Law 2004), then notions such as generalisability are illusions. In the findings and discussion chapter, I use vignettes as a way of acknowledging that my ways of knowing cannot pin down or ensnare reality "in the webs of inquiry" (Law 2004, p.8). There are only temporary moments in the fluxes that comprise existence (ibid.). By reworking data into stories, I explored the foggier parts of my attempts to understand the research events.

The vignettes are a form of analysis and are assembled from fieldnotes, participants' views as recorded in interviews and then turned into transcripts, and my own reflections. They re-present incidents that were especially puzzling, that had an insistence, and which gave me pause. These instances of awkwardness, interruption, confusion, amusement or irritation are also used as a means of questioning the self through the research process (Cole 2013) — as, for example, in *Provoked and Provoking.* Other vignettes such as *Boring!* explore the ways in which subjects break in unexpectedly, or escape being captured by the research.

The use of vignettes in enquiry derives from arts-based approaches, and from the literary arts in particular. Narrative methods provide an alternative way of presenting research, one that does not attempt a neutral account from an Archimedean point, or as Haraway (1988) describes it, the "god-trick of seeing everything from nowhere" (p.189). The stories help to reveal that research is always positioned and partial. They call attention to the power dynamics inherent in the production of knowledge (ibid.).

I use an arts-based approach in Barone and Eisner's sense (1997), which is about an orientation rather than a strict outline of what this approach should contain. They describe seven characteristics of arts-based enquiries: "creating a virtual reality; ambiguity; expressive language; contextualised and vernacular language; promoting empathy; the researcher/writer's personal 'stamp'; aesthetic form" (Barone and Eisner 1997, p.73). The ability of such approaches to cope with, and invoke, doubt and indeterminacy (Swanson 2004) was particularly appealing, since I wanted to trouble prevalent assumptions about creativity, assessment, research and education more generally.

Writing as a means of undertaking enquiry is "a way to end up thinking something you couldn't have started out thinking" (Elbow 1998, p.15). Instead of coding, I wrote about the data. I kept a research journal, added analytical comments to the transcriptions as I went along, drew maps which connected the data to theory, and played with rewriting the data as different stories, experimenting with different tone or bringing in other characters, or widening the parameters of the scene by including things that happened just before or after the event being described.

This arrangement of text into narratives is consistent with the theoretical underpinnings of the study, as narrative "causes us to question our values, prompts new imaginings of the ideal and the possible. It can even stir action against the conventional, the seemingly unquestionable, the tried and true" (Barone 2001, p. 736). Narrative enquiry methods are also appropriate for a study that uses an ontology of the multiple. Readers make sense of a story from their own perspectives, and the writer expects that there will be various interpretations by many different readers (Coulter and Smith 2009).

Narrative places an emphasis on emotions (Denzin 1992). I observed the presence and impact of emotion in the fieldnotes and transcripts, whether this was through interviewee's tone, repetition of words for emphasis, stumbling over words, body language, laughter, sighs, echoing of other participants' words, eye rolling, and other signals. The vignettes bring this to life more effectively than short quotes from transcripts alone.

The question of representation through vignettes is inherently connected to post-structuralist concerns with truth. Whether vignettes convey what actually happened is not the point, since the attempt to look for truth derives from the positivist paradigm, which is not relevant to narrative enquiry (Richardson 2000). The stories are contextually embedded, and oriented to

the connections between events, since “[t]he connections between the events is the meaning” (ibid., p.13). This precisely what I attempted to achieve: a tracing of the rhizomes linking the research events, and how these informed and changed my thinking and the research itself.

Vignettes use the literary device of point of view as the lens through which the tale is told. This may seem like an instance of the “godlike” position critiqued by Haraway (1988), in that the writer controls the story and decides who will speak and which events will be portrayed (Coulter and Smith 2009, p.579). However, this is also the case with conventional research accounts; the difference lies in acknowledging that this is happening. Swanson (2006) argues for a critical reflexive approach to methodology as a way of navigating the ethical, political and moral complexities of research, and advocates an alternative and more empowering approach to representation and voice. I do not claim to be empowering those who have shared their views with me, but I maintained an ethical stance towards participants throughout the process. In the analysis and the presentation of findings, I aimed to be fair and to convey the range and complexity of opinions expressed. For instance, I considered where participants expressed a more nuanced or qualified version of an opinion, acknowledging that a short extract may not give a balanced representation of an individual’s beliefs. The vignettes are a way of addressing this through uncertainty, layers of description and introducing different voices.

Honan’s (2001) rhizo-textual analysis invokes the idea of innumerable possible tracings and mappings, or interpretation, of data:

> It is not that one reading is successful and the other is a failure, but that each reader searches for her own way through the rhizome of the texts (p.9).

Different readings are not right or wrong, better or worse. They are merely alternative approaches to what is presented (Honan 2001, pp.35-6). I attempt to acknowledge this by including moments that were especially puzzling or contradictory, or that were challenging to me in some way. This aims to disrupt the “truth-telling” (ibid., p.16) approach to writing a thesis. To help this process, Honan uses self-critique to address potential criticisms of her analysis. I attempt something similar by exploring the uncomfortable encounters in the fieldwork, and how these ran through my mind like *ritournelles*, constantly in the background like a tune that will not shift, bringing in doubt and leading me to question my certainties.

As noted in chapter one, I experimented with retelling moments from the research, using different tones, changing the perspective by including what happened immediately before and after the specific extract, and focusing on the seemingly small and unimportant aspects of the event, such as an interruption by a phone call. I selected the versions that seemed to work best for the thesis, but there are other ways of telling these tales, and to add a further twist, there are also tales within tales, as participants also recounted stories and acted out scenes from their lives, as if reading from a screenplay they had written. This is particularly noticeable in the accounts given by Fiona, local authority officer, and Kirsty, a teacher at Burgh High, where they use hypothetical, script-like exchanges with teachers (in *Courgettes and Peppers*) and students (in *Discomfort*) to make points about creativity and assessment. Teachers told anecdotes about students, as in Emily at Parkview's tales about high-achieving and under-achieving students in her art class (*Marked Up and Down*). In *Discomfort,* James recounted a tale about a drama performance at a national policy event to his colleagues in the focus group at Burgh High (which, in yet another rhizomatic twist, I had also witnessed). His take on what was being enacted and conveyed though the performance opened up lines of thought which had not previously occurred to me. Hence, I am not the only teller of tales in the thesis, since the teachers also used different personae, varying tones, and dramatic methods to convey their thoughts.

The iterative, or nomadic and rhizomatic, research design facilitated different readings, self-critique and ethical engagement with participants. I encountered participants in different contexts such as policy conferences, and discussed emergent findings with them and arranged follow-up interviews or subsequent focus groups where they had the opportunity to clarify or express different views (e.g., "at the conference the other day, your group mentioned that teachers were a barrier to creativity…", explored in chapter six). Participants also received the recommendation report and were able to provide feedback on this. This was approached in several ways: individuals were emailed, and the creative conversation groups, which evolved independently out of local authority-facilitated focus groups, provided input into the recommendations. All of this enabled different voices, tones and emphases to enter the narrative.

Cartography

Geophilosophical cartography is a mapping of events that aims to understand the "present-becoming" (Deleuze and Guattari 1988/2017; Semetsky 2008, p.vii). In Grinberg's (2013) study

of pedagogical apparatuses, mapping is used to articulate the ongoing struggle between the molar and the molecular, or the minor and the dominant: “[the] tension between the forces of stratified power relations and the forces of what is in the process of becoming, of subjects in action, in struggle” (p.206). Education research is a territory of tension between forces. Mapping is part of a theory of action, of charting and tracing flows and particles of energy that “disrupt repressive regimes” (Ringrose 2011, p. 614).

Alvermann (2002) uses tracings and maps to re-explore the data from a study on reading groups for young people. She describes the initial data analysis as a tracing and the rhizoanalysis as map-making and discusses the necessity of “putting the tracing back on the map” (p.123). In doing so, areas of silence are surfaced: things that were missing from the initial analysis, or topics that participants did not speak about (ibid.).

The spatial turn in sociology has influenced the development of these “new cartographies” (McKinnon 2011, p.456) based on metaphors, rather than conventional mapping techniques. Such approaches are oriented to material flows. Thus, mapping is no longer about fixing reality and producing official State versions of what exists (ibid.), but refers to an analytical mapping. This supported an understanding of the creativity movement as a marauding war-machine whose movements can be traced across the global Territory of education, drawing its own map.

Collage

I wanted to find a way of depicting the ways in which policy desiring-productions of creativity use repeated, yet slightly different, words and images to convey their messages. For example, social media posts and presentations at policy events made repeated use of images of human and robotic hands; production lines and conveyor belts; wheels; and environmental catastrophes. Rather than describing the affect of these repeated yet varying images in words, I created collages. These are analytical, rather than aesthetic, devices.

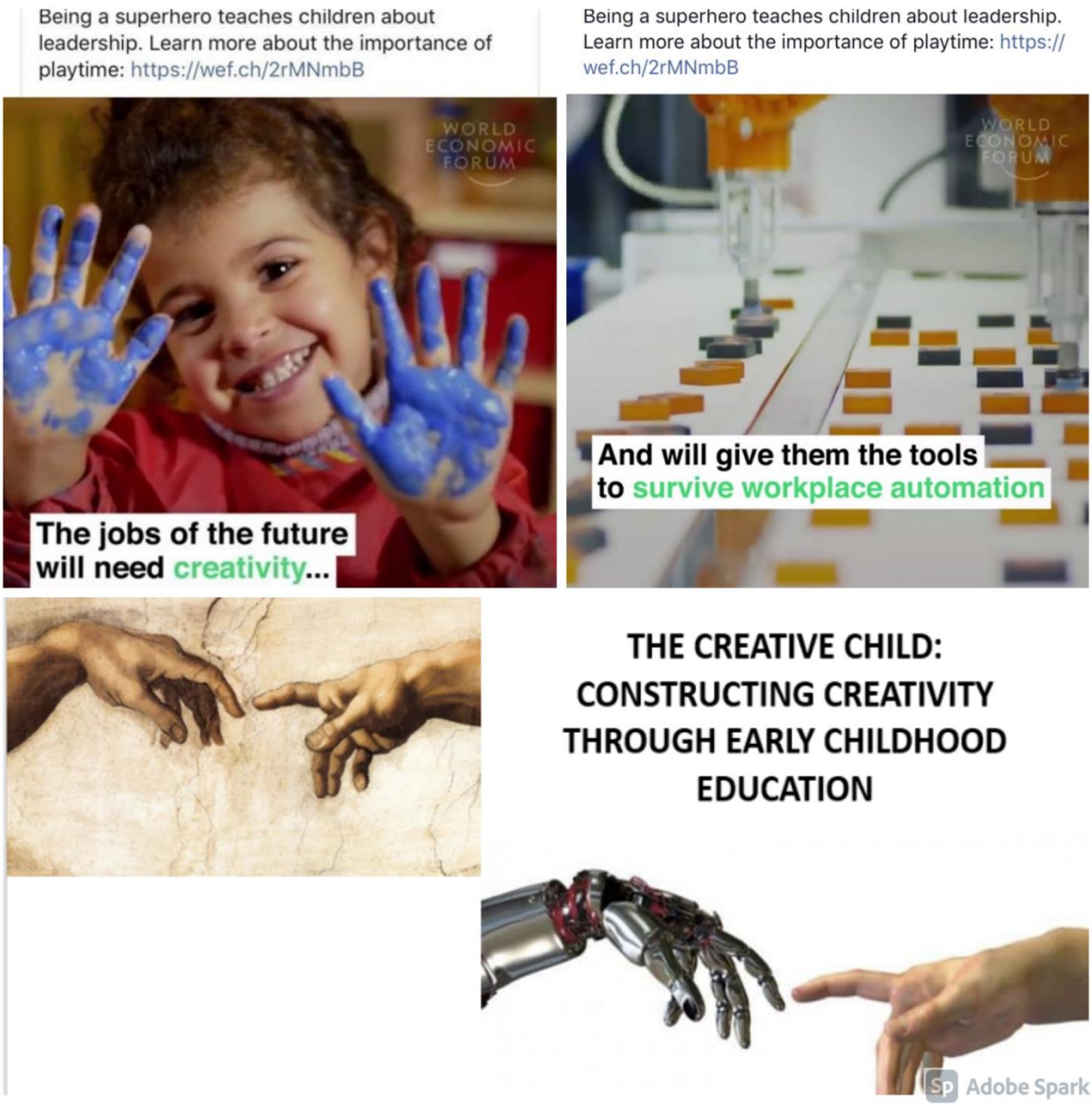


Figure 7: Analytical collage: Human and robot hands in creativity discourse.[22]

[22] Sources: World Economic Forum Facebook; Education Scotland/Creativity Portal Available: https://creativityportal.org.uk/?q=&t=,ncln-annual-event-2019-are-we-offering-a-creative-curriculum and https://www.facebook.com/worldeconomicforum [Accessed: 5 May 2021]. Made with Adobe Spark

Figure 8: Analytical collage: Wheels and conveyor belts[23]

In terms of copyright issues arising from the use of these images, Butler-Kisber (2008) argues that there is insufficient guidance on using found images in collage-based enquiry. Opinions vary from complete acceptance of found images, to the view that without legal permission such images should not be used at all. Solutions include replacing the actual images, such as

[23] Source: City of London Corporation Presentation, "Future Skills", Creative Bravery Festival July 2020. Available: https://www.youtube.com/watch?v=Mt5Luj52N2Y [Accessed: 3 November 2020].

presentation slides, with copyright-free images. However, if the original images cannot be used, this limits the impact of the analysis (ibid.).

As such, the question of whether to use actual slides from conference presentations is an ethically grey area. The presentations I refer to are all in the public domain, and the URLs are provided so that readers can view the slides in their original context. I also took the power dynamics into account. These desiring-productions are intended to influence thought, shape education practice, and affect teachers' and students' experiences. Reproducing these slides here is, I would argue, ethically justifiable. The inclusion of social media posts by organisations such as the WEF and the OECD was less controversial, as these posts were designed to be seen, "liked", commented on and shared by a wide audience. This is the position taken by Wilson (2016) in a study of images shared on Twitter by professionals.

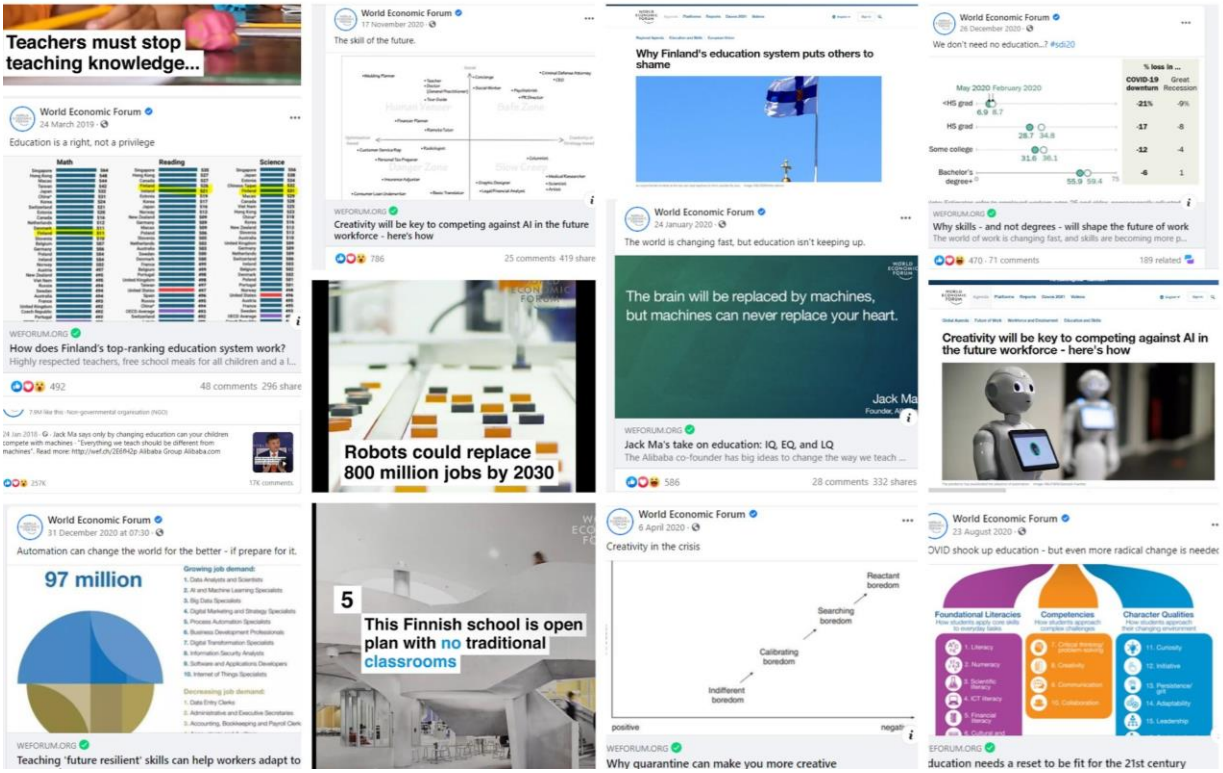


Figure 9: Analytical collage: WEF social media posts [24].

[24] Source: WEF Facebook. Available: https://www.facebook.com/worldeconomicforum [Accessed: 17 March 2021]

Ethical entanglements

Ethical approval for the study was granted by the General University Ethics Panel (ref: 666) and the study adhered to the British Educational Research Association's ethical guidelines (BERA 2018), as well as to the principles set out in the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights. However, I regarded ethics an ongoing event, rather than something that was signed-off and forgotten about. The overall aim was to embed an ethical approach throughout the entire project, and not only in data generation (St Pierre 1997).

Throughout this chapter, I have acknowledged where ethical issues arose in the various stages of the research, and how I dealt with these. For example, I followed the principles of data minimisation, by not collecting unnecessary personal information from participants which increases the risk of individuals being identified. As such the only personal data gathered was about which subjects the teachers taught, how many years they had been in the profession, and how long they had been in their current post for.

With regards to the principles of non-traceability, anonymity and confidentiality, consideration was given to how to balance these commitments with the decision to present the findings in vignettes, since these can potentially include a considerable amount of contextual information. It was necessary to present the stories in a way that did justice to what individuals said and did, but without leaving traces that could lead back to them or their workplaces. Although pseudonyms are provided, it is theoretically possible for participants to identify themselves and others (particularly in the case of those who participated in focus groups) from what is reported; however, the risk of identification by outside parties, such as employers, is low. This is further mitigated by sensitivity to the nature of what was said by participants. Where comments could be regarded as especially sensitive, these are not reported verbatim. For example, I did not include a teacher's entertaining anecdote about a parental engagement event "gone wrong", even though it provided insight into the dynamics of the parent-school relationship and how this impacted on students' subject choices.

The information divulged in the interviews will not be shared with third parties, with the exception of anonymised extracts in this and any further project outputs. In discussions with local authorities, headteachers and class teachers, I provided examples of how I would describe the school, and clarified that any identifying information would be removed. For example, I

cannot include images or quotes from the music composition model created by Charlie at Parkview Secondary, since this is in the public domain and would identify the school and leave a trail that could be followed back to the individual teachers who took part in interviews. Details about the data protection procedures were provided in the informed consent and information sheets (Appendices A and B). The anonymised accounts of policy events that I attended do not name other participants or provide any identifying information about them, nor do I quote anyone verbatim. I do however name presenters and use examples from their presentation slides, but only where these are in the public domain, and the conference was a national or international-level policy event.

In terms of data protection, local authority external research departments sought reassurance that the data would be handled, stored and disposed of appropriately. Fieldnotes and transcripts of audio recordings are securely stored on the University of Stirling X Drive. The original audio recordings were then deleted. All raw data is only accessible to the researcher and is not shared with third parties or partners. It will be deleted ten years from last access or publication (I maintain a spreadsheet with dates for deletion for this purpose).

Although gaining permission through local authorities and school senior management teams meant that the research became entangled with hierarchies, this process also resulted in a robust interrogation of the ethics procedures for the study, since there were several rounds of official scrutiny. My ethics procedures were also reviewed by the head or depute head of each school I requested to visit, thus providing another layer of interrogation. In turn, class teachers had their own questions about anonymity, non-traceability, and how their data would be handled.

Another issue concerns whether the methods I used can support the development of a collective (teacher) subject. Guattari (2000) regarded ecosophy as having an “ethico-political” orientation, with the aim being to reform current social, aesthetic and political conditions. It achieves this by enabling a “nascent” group subjectivity to develop (ibid., p.57). However, transformation is only truly possible when this becoming is located within a *socius* that facilitates change. Hence, there is a particular responsibility on those working in the *socius,* for example in education, health, culture, sport, the arts, and the media, to act at both individual and collective levels (2000, p.39). The development of the collective subject requires “an organisational technique characterised by open communal spaces, social interaction, communication across

ranks, role reversals, and workspaces that flow into living spaces" (Watson 2018, p.20). This is what I attempted to facilitate through the local authority creative conversation groups.

Deleuze rejected the idea of research that represents others or speaks for them, since this merely generates yet more hierarchical power structures (Deleuze and Foucault 1972, p.209). Transformation, not reform, should be the aim, and this task must be undertaken by the affected groups themselves:

> Either reforms are designed by people who claim to be representative, who make a profession of speaking for others, and they lead to a division of power, to a distribution of this new power which is consequently increased by a double repression; or they arise from the complaints and demands of those concerned (ibid., p.209).

Hence, the pedagogical principles proposed in chapter seven arise out of the "complaints and demands" (ibid.) of teachers themselves, as expressed in the interviews and focus groups. Further, there is a recognition that this work should be taken forward *with* students as part of a collective teacher-student desiring-machine — an ethico-politically aligned group subject with revolutionary potential. The teacher-student desiring-machine is concerned with creativity as "re... creation" (Pope 2005, p.8) rather than co-creation, since the latter term tends to be associated with corporate strategies that merely involve service users.

Following Wilson (2016), my understanding of validity is that it is about internal coherence: methods, theory, data and analysis all entwine together. Post-structuralist approaches have queried conventional accounts of reliability and credibility and their relevance to qualitative research, particularly when this is underpinned by methods which derive from the quantitative paradigm, such as triangulation. As Wilson argues (2016, p.103), "Things may be believable (and, indeed, believed) and yet be inaccurate or worse. It is not obvious to me that observations must be (immediately or easily) generalizable to be valuable."

Summary

In order to reject the readymade paths and find my own way, I constructed a nomadic schizo-methodology which enabled me to "see" with Deleuze and Guattari's concepts. The ontological orientation of this methodology is that it is relational, immanent, empirical and has a focus on materiality (Deleuze 1988 p.123; Law 2004). It is attuned to the multiple, and to what is becoming. Inspired by arts-based practices, and narrative methods in particular, I re-present

data as vignettes. The following chapter discusses the next phase of the voyage, my forays into the land of the creativity movement and what I found there, before moving on to the findings from the interviews and focus groups.

Plateaus 2 and 3: The Stress and The Despair

Chapter 5: Creativity is Everywhere/Erehwon

Introduction

This chapter presents three plateaus which explore events in contemporary education policy and practice in relation to creativity and assessment. In the first plateau, I undertake a geophilosophical exploration of the definitions of creativity in Scottish education, revealing the pattern of difference and repetition visible in these definitions across time. The second plateau delves into the details of the forthcoming OECD PISA creativity test, which involves a number of "knotted" (de Freitas 2012) issues, the most fundamental of which is how to define creativity in order to measure it. I argue that the OECD evidently found this to be an impossible task, and thus circumvented it. The third plateau is an analysis of the workings of the creativity war-machine. This comprises a mapping of some of the creativity war-machine's movements across the macroscopic (global) Territory of education. This mapping exercise produced two short case studies: the first concerns Sir Ken Robinson's influential TEDtalk videos, and the second investigates FORM, a creativity programme currently operating in Australian schools.

These three plateaus provide the context for the analysis and discussion of the findings from the empirical study (chapter six). Overall, I contend that creativity is everywhere in school education, yet at the same time nowhere: an idea that is conveyed in a term used by Deleuze, Erehwon[25], or "nowhere" backwards (Deleuze 1994). This is because what is being promoted through these desiring-productions is a "designer capitalism" (jagodzinski 2013, p.112) lacking in specificity and substance.

The point of all this is to enact the pedagogical and nomadic schizo-methodological principle of map/trace by following the trails and digging beneath the landscaped surfaces of the Territory of education. These explorations involve an interpretation of signs and symbols, understood as signifying chains and codes, to reveal the nature of the policy desiring-productions of creativity that are currently being promoted to and within national school systems. It is an enactment of

[25] The term originates from the title of the novel *Erehwon, or, over the range* by Samuel Butler (1872)

the second positive task of schizoanalysis (Deleuze and Guattari 1983), which is to identify the capitalist interests that (unconsciously) shape and drive these policy desires.

A View From Here (and There)

In this plateau, I identify and analyse the definitions of creativity that are currently flowing through the Scottish education desiring-machine both now and in the near-past. This reflects the first research question:

> What are the notions of creativity in current educational policy in Scotland and how have these evolved?

Barseghian and Kristensen (2017) use the notion of the ghost to convey "the expressive rhythmic relation of a subject (individual or collective) to a person's land and the people who live there" (pp.341-2). This notion of the ghost helps me to identify and analyse the manifestations of creativity that haunt and possess the present territory of Scottish education, and which also reach out into the future.

In 1826 the Inverness School Society enthused at length about the advantages that education brings to the development of the nation:

> The universal diffusion of a right education should be ardently promoted by patriots and politicians, because the universal intelligence of the people is the best safeguard of social order, of freedom, and of peace; because it is the stimulus of enterprise,—the creative source of public wealth,—the most stable foundation of political greatness and glory;—and because our present imperfect progress in it is the distinction to which we mainly owe our proud rank among the nations. Men of learning and taste should cherish it, because the elements of education are the instruments which can bring into full action that boundless extent of genius and of intellectual endowment, which Providence has scattered so profusely and so impartially among every rank of men; they are the paths by which the Newtons, and the 'mute inglorious Miltons' of the hamlet may reach the heights of usefulness and of fame: and philanthropists should strive to advance it, because it presents the means most easy and most effectual, to meliorate the condition of mankind,—to soften their manners,—to refine their pleasures,—to multiply their comforts,—and to extirpate their most baneful and degrading vices
>
> (cited in Anderson 1995, p.174)

In the codes visible in this narrative, education is the vehicle for achieving the intertwined aims of moral and social progress, order and compliance, a new national identity ("the United Kingdom" of which Scotland was now a part) and economic growth. In this construction, creative

potential is scattered throughout the population. By educating everyone, this latent capacity might come to fruition, and the nation can benefit humankind as a whole.

In contemporary Scottish education policy, creativity continues to be framed within a narrative which connects individual ambition to the survival of the nation-state, and to economic and moral progress more generally:

> [T]he creativity of Scots – from the classroom to the boardroom – is the edge we need in a competitive world (Scottish Government 2004b).

Creativity advocates such as Keir Bloomer (2012) express views about how:

> In the 21st-century global economy, developed high-wage countries like Scotland can be competitive only if a large and ever-growing proportion of the workforce is capable of operating […] in occupations that add value through creativity (ibid., n.p.).

A further example can be found in a video resource on Education Scotland website. This forms part of the National Improvement Hub's practice exemplars for teachers:

> In Scotland as in most advanced industrial countries, there is a… growing emphasis on creativity within the educational process. Now I think that is really born of a realisation in the 21st century, that the knowledge economy will require people to be creative thinkers — people who can think out of the box, who can look at problems differently and who can bring solutions to unanticipated events and so on. So that most countries are looking at creativity — including those who are amongst the most successful educationally. Somewhere like Singapore, for example, which consistently comes very high up any league tables that are created.[26]
>
> (Brian Boyd, Education Scotland National Improvement Hub 2021)

This desiring-production conveys key creativity war-machine beliefs, including the idea that creativity is essential for surviving in the 21st century, since the knowledge economy requires workers who can "think outside of the box", be flexible and solve problems. Further, there are nations that are already succeeding in implementing creative education systems, and who should be emulated. The evidence for Singapore as a creative nation is that it ranks highly in

[26] Education Scotland National Improvement Hub. "Creativity and stickability - Brian Boyd" 21 January 2021. Available: https://education.gov.scot/improvement/practice-exemplars/creativity-and-stickability-brian-boyd [Accessed 12 April 2021]

“league tables”, which refers to the OECD PISA rankings, specifically those that derive from their new measures of 21st century or transversal skills.

This desiring-production of creativity as skill of the future and as national imperative also involves notions of creativity as everyday or “little”. Creativity is constructed as a problem-solving disposition which is primarily concerned with resilience:

> [Howard Gardner] has helpfully suggested that there is something called a “small c” [sic] creativity to which everybody can aspire. And I think that’s more of a disposition; it’s a way of thinking about problem solving. For example, if you come across a real difficult situation, what's your attitude to that —what’s your response?
>
> (Brian Boyd, Education Scotland National Improvement Hub 2021)

If we return to the Inverness School Board’s eulogy about education and strip out the archaic language, a strong chain of connection can be identified from past to present, suggesting a consistent value system, or incorporeal universe (Guattari 1992), in Scottish education. Despite a gap of almost 200 years, the same signifying semiological components are present: these are accounts of creativity as a societal and moral good which has an improving function on individuals, contributes to progress and enhances the capacity of the nation to compete on a global scale.

However, there are also significant differences. The 1826 text emphasises that the potential for greatness is randomly distributed in the population. This is a form of democratic creativity (Banaji et al. 2010); however, it differs considerably from contemporary democratic notions, specifically the “Big C/little c” theory (referred to in the Education Scotland video as “small c”), which constructs creativity as a two-layer, hierarchical strata, with only the modest and everyday “lower” version accessible to most of the population, with “higher” genius-level creativity something that only an elite few can ever hope to attain (Gardner 1993; Craft 2000).

Further, the 1826 text references the famous lines in Gray’s poem *Elegy Written in a Country Churchyard* (1751) to signify the equal value of creativity in the arts and humanities (represented by Milton) and innovation in science, technology, engineering and mathematics (represented by Newton). However, contemporary Scottish education narratives tend to prioritise the latter, severing creativity from its original association with the arts (Banaji et al.

2010), as exemplified by the skills-based construction of creativity referenced in the Education Scotland video.

If we reach back even further, using a geophilosophical cartography (Deleuze and Guattari 1988/2017), we find the older Scottish notion of the *makar* (Crawford 2007). The makar is an arts-based understanding of what it means to be creative, since it originally referred to poets or musicians, but always carried within it the idea of actively making or composing (ibid.). It is also connected to notions of State/Royal power, since the makar served at the royal court. James I of Scotland was himself a makar; *The Kingis Quair* is his exploration of the interplay of thralldom and liberty, reflecting his ambiguous relationship to captivity. McCaffery (2014) draws on Percy Bysshe Shelley's "unacknowledged legislator" to develop the concept of the "radical makar" who poses a challenge to state authority, yet also acknowledges that entanglements with power are inescapable.

Over the past few decades, there has been an explosion of creativity-related developments and initiatives in Scotland, including the establishment of the organisation Creative Scotland, action plans such as *Education, arts, culture and creativity: an action plan* (Scottish Government 2010), and a Creativity Portal (www.creativityportal.org.uk) (Drew 2013).

Curriculum for Excellence (CfE) reflects and reinforces these policy desiring-productions. CfE was launched in 2004 and implemented in schools in 2010-11. A desire to ensure the new curriculum was aligned to globalised policy trends in relation to creativity was apparent (Drew 2013); however, this was "ill-defined from the outset" (ibid., p.102). The original CfE document discusses creativity in relation to students' engagement, stating that children should be "active in their learning and have opportunities to develop and demonstrate their creativity" (Scottish Executive 2004, p.14). To achieve this, "time and space for innovative and creative teaching and learning" (ibid., p.16) is required.

A subsequent policy document, *Building the Curriculum* (Scottish Executive 2006) emphasised economic imperatives, and located creativity within the context of the sciences and business. It stated that "young people will develop important transferable skills to prepare them to be enterprising and creative adults" (ibid., p.30). Further, students should be provided with opportunities "to be creative and imaginative… to find imaginative solutions to problems" (ibid., p.10), thus emphasising the construction of creativity as problem-solving. The relationship

between assessment and creativity is given rather scant attention, aside from an assertion in *Building the Curriculum 5* that "a greater emphasis will be placed on the teaching and assessment of higher order skills, including creativity" (Scottish Government 2011). The use of "will be" delays this to an unspecified point in the future.

Skills Development Scotland, the national skills agency, produced a policy document, *Skills 4.0* (2018), which references creativity. It is couched in rather paradoxical terms: "we cannot predict the future, [but] we can prepare for a future that is increasingly unpredictable" (ibid., p.3). How is it possible to prepare for the unknown? The document suggests that the solution is to promote "meta-skills", which as might be expected are primarily focused on workplace learning. These are grouped under three headings:

- Self-management (manage the now): Focusing, Integrity, Adapting, Initiative
- Social intelligence (connect with the world): Communicating, Feeling, Collaborating, Leading
- Innovation (create our own change): Curiosity, Creativity, Sense making, Critical thinking (ibid, p.8).

Creativity is defined as: "the ability to imagine and think of new ways of addressing problems, answering questions or expressing meaning and is another quality we are born with" (Skills Development Scotland 2018, p.15). This suggests that creativity is an innate capacity; however, this contradicts the definition in the forthcoming PISA assessment background questionnaire, in which it is stated that creativity is not an inherent capability but is something that is learned, and which develops over time. An answer stating that creativity is innate would score poorly (see below).

The Education Scotland Definition (Present/Past/Future)

Education Scotland's current (soon, no doubt, to become past and obsolete) definition of creativity appears on the Creativity Skills section of their website:

> Creativity can be thought of as the colour that brings Curriculum for Excellence to life. The four core creativity skills run throughout the four capacities and are integral to the meta-skills which are increasingly important in today's workplace.[27]

[27] Education Scotland National Improvement Hub. Available: https://education.gov.scot/improvement/learning-resources/what-are-creativity-skills [Accessed: 17 January 2021]

In this ensemble, creativity is an energy, or the life force itself. It can transform that which is inert – namely, the curriculum, presented here as dead — into something that lives. The next sentence suggests that creativity is a multiplicity, since it comprises four "core creativity" skills. Confusingly, these core creativity skills are also components of the meta-skills, of which creativity is just one. And in yet another twist, the meta-skills are in the process of *becoming* "increasingly important" for the workplace of today. Interestingly, this is not positioned as "the workplace of the future", but of the here and now. However, in the next paragraph, we find the following:

> The World Economic Forum states that by 2020[28] creativity will be the third most needed skill, with associated skills, complex problem solving and critical thinking, filling the top two spots. Creativity is the skill of the future.

Creativity is now positioned as a future skill, yet it is also located in the past ("by 2020"). This was recently updated to "by 2025". This conveys a sense of a future that is continually pushed back, always out of reach, in which creativity is never actualised. The influence of the World Economic Forum (WEF) is apparent in this text. This provides a rationale for the thesis' focus on the WEF's messaging around creativity, for example through the analytical collages of the Forum's social media posts on this topic (fig.9).

The next section of the Education Scotland webpage states:

> Here in Scotland we define creativity skills in a way that educators across all sectors can identify, value and discuss with learners:
> - Curiosity
> - Open-Mindedness
> - Imagination
> - Problem solving
>
> The development of creativity skills is a responsibility of all educators and the infographic What are creativity skills? offers a succinct starting point. Every school and early learning centre in Scotland has received posters of the visual…

The definition of creativity that flows through the national education desiring-machine is a strange hybrid. It is nailed-down, definitive and declarative ("here in Scotland we define

[28] This was what the website stated when I accessed it in January 2021. It was subsequently updated on 26th July 2021, with 2020 changed to 2025.

creativity as…") yet at the same time open, vague and nebulous (as in the "Everything is creative" infographic promoted on the Creative Scotland portal; see fig.10). Further, who are "we", and how did "we" arrive at this definition?

Figure 10: Education Scotland "Everything is Creative" visual[29]

Problem-solving is listed in the website's first paragraph as a skill that is closely related to creativity — "creativity will be the third most needed skill, with associated skills, complex problem solving and critical thinking, filling the top two spots" — which suggests that problem-solving is not the same as creativity. However, problem-solving is then listed in the next paragraph as one of the four core creative skills that *comprise* creativity. This builds a confusing picture, with several impossibly tangled rhizomatic knots (de Freitas 2012) evident on the one webpage.

[29] Available: https://www.easel.ly/educationscotland [Accessed: 3 May 2020]

The phrasing of “The development of creativity skills is a responsibility of all educators” conveys authority and an insistence that “educators” comply. The visual (fig.11) has been dispatched to every school and early learning centre in the country. This might be construed as helpful; it could also be interpreted as a transmitting of code (Thompson et al. 2021), carrying with it the implication that teachers have no excuse for not knowing the official policy line on creativity skills.

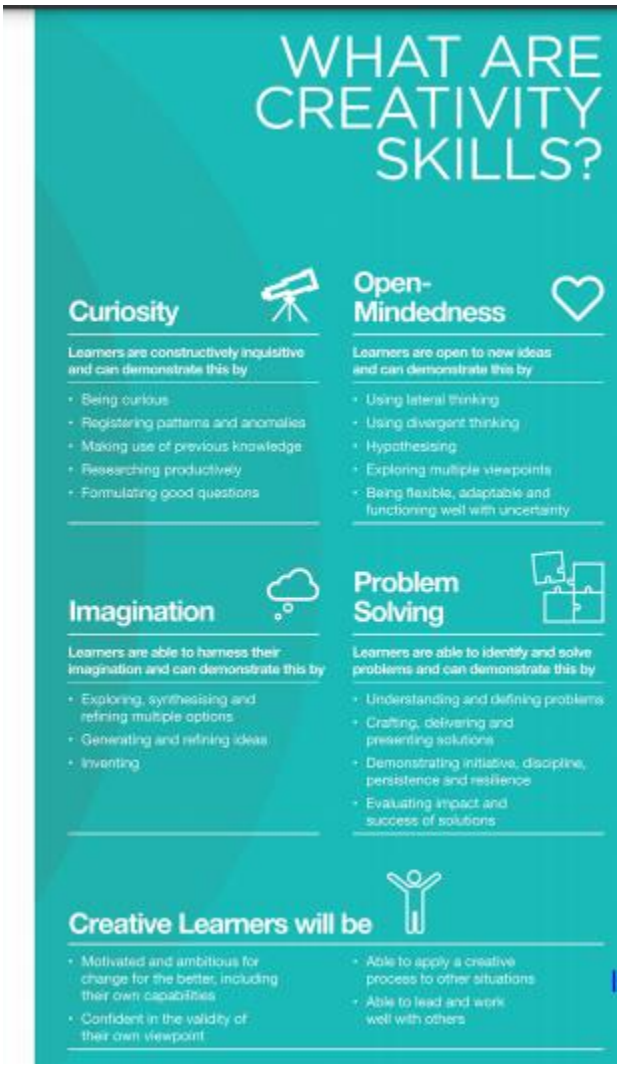


Figure 11: Education Scotland. “What Are Creativity Skills?”[30]

[30] Available: https://education.gov.scot/media/ciaevgez/whatarecreativityskills.pdf [Accessed: 18 January 2021]

As can be seen in this visual, the definitions of the meta-skills lack clear-cut edges and instead collapse into each other in a circular fashion, representing an instance of Guattari's circles of deadening repeat (2000). For example, one of the meta-skills is Curiosity, which is unhelpfully defined as "Being curious".

Education Scotland's tools for the planning and evaluation of creativity include the spiderweb (fig.4) and a creative learning survey for students that "encourages learners to reflect on creative learning experiences, the skills they have developed and why those skills might be useful to employers". The next page provides open answer questions (fig.12).

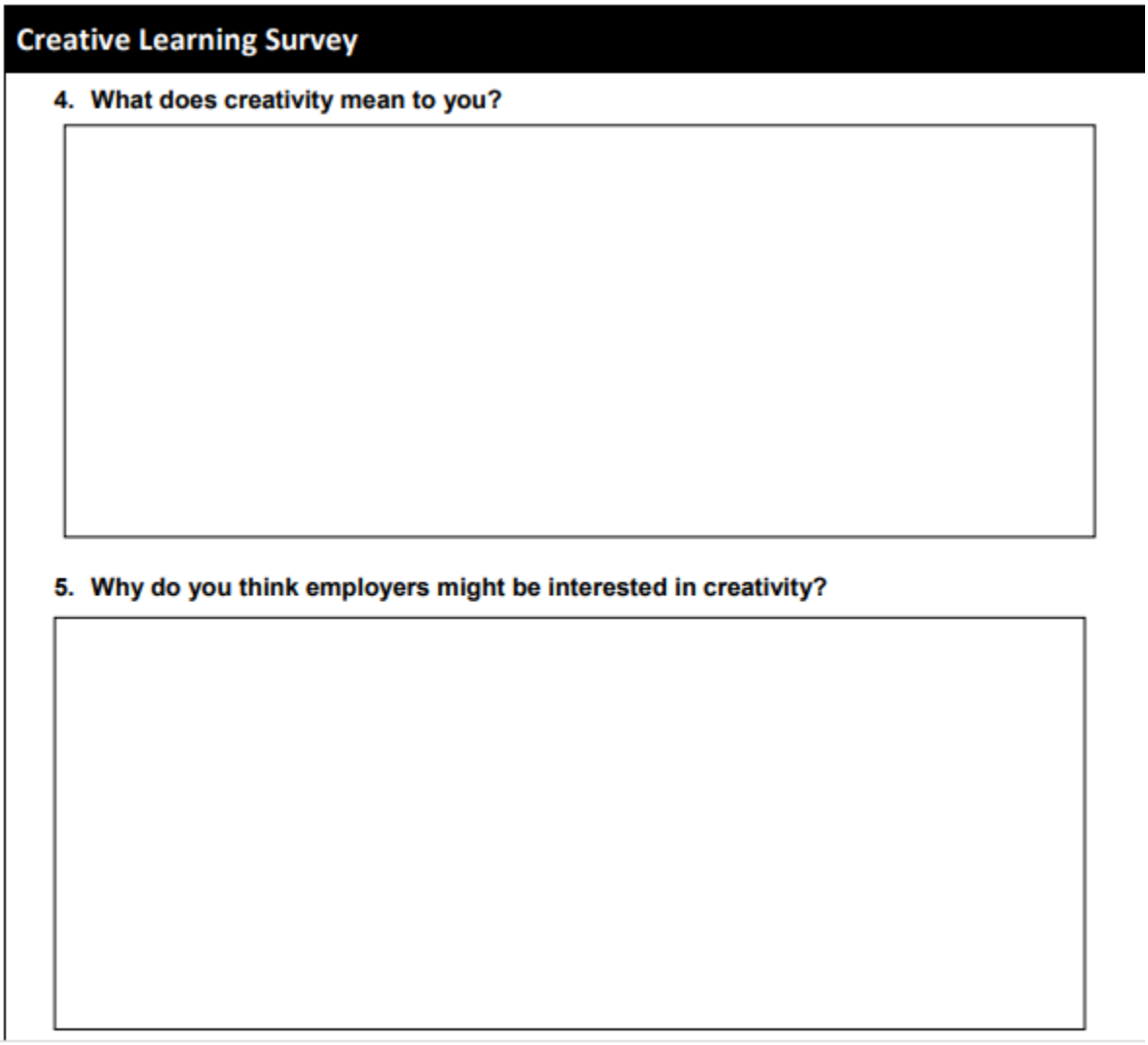
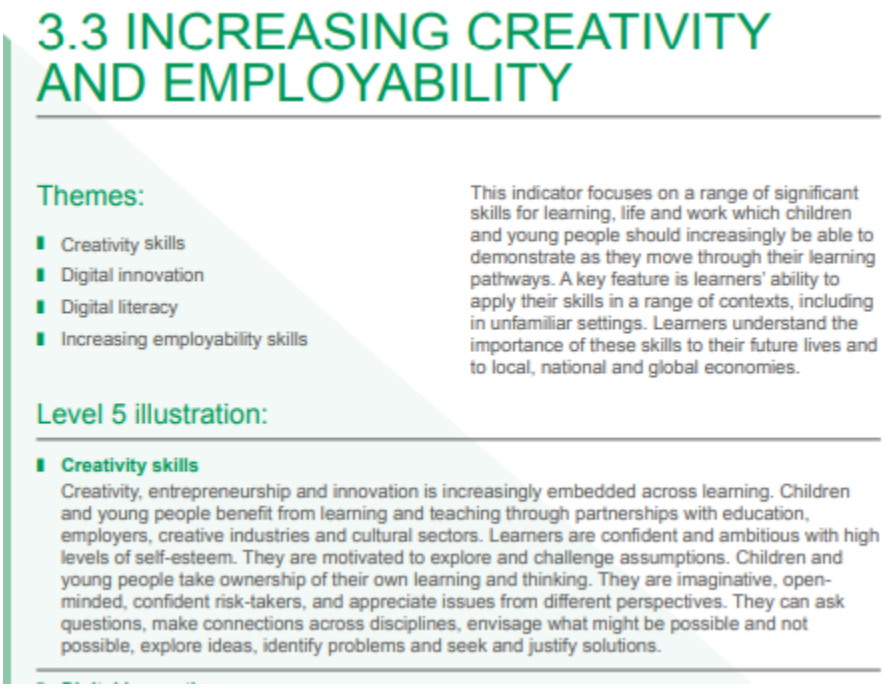


Figure 12: Education Scotland Creative Learning Survey for Pupils[31]

[31] Available: https://education.gov.scot/media/4jphxnle/creativelearningsurveyforpupils.pdf [Accessed 17 January 2021]

The construction of creativity as an economic imperative and workplace skill is strongly evident here. This is also the case in the HMIE self-evaluation framework for schools, *How Good is Our School?* In the fourth iteration of the framework, creativity is always mentioned alongside workplace skills in the Quality Indicators, as for example here, in Quality Indicator 3.3, "Increasing creativity and employability":



3.3 INCREASING CREATIVITY AND EMPLOYABILITY

Themes:

- Creativity skills
- Digital innovation
- Digital literacy
- Increasing employability skills

This indicator focuses on a range of significant skills for learning, life and work which children and young people should increasingly be able to demonstrate as they move through their learning pathways. A key feature is learners' ability to apply their skills in a range of contexts, including in unfamiliar settings. Learners understand the importance of these skills to their future lives and to local, national and global economies.

Level 5 illustration:

- **Creativity skills**

Creativity, entrepreneurship and innovation is increasingly embedded across learning. Children and young people benefit from learning and teaching through partnerships with education, employers, creative industries and cultural sectors. Learners are confident and ambitious with high levels of self-esteem. They are motivated to explore and challenge assumptions. Children and young people take ownership of their own learning and thinking. They are imaginative, open-minded, confident risk-takers, and appreciate issues from different perspectives. They can ask questions, make connections across disciplines, envisage what might be possible and not possible, explore ideas, identify problems and seek and justify solutions.

Figure 13: Education Scotland. How Good Is Our School 4[32]*.*

In terms of policy documents specifically relating to creativity, Education Scotland's *Creativity Across Learning* (2013) impact report also connects the notion of creativity to economic demands and the "world of tomorrow" narrative:

> Scotland needs to prepare its young people for life and work in an uncertain economic and social environment if they are to thrive in an era of increasingly rapid change.

The document describes "enquiry, critical thinking, learner project management and learner self-efficacy" as constitutive of creativity and argues for clearer and more consistent processes to help students identify and track their skills development (which includes creativity). In some

[32] Available: https://education.gov.scot/improvement/Documents/Frameworks_SelfEvaluation/FRWK2_NIHeditHGIOS/FRWK2_HGIOS4.pdf [Accessed: 3 February 2021]

places, the document states that creativity should be rooted in content knowledge; in others, it describes creativity as a “broad skill” (p.12).

The Creative Learning Plan (2013) also frames the debate about creativity within the economic imperative ensemble of enunciation, or discourse. However, it encompasses environmental, social and cultural factors, defining creativity as:

> [T]he capacity to generate ideas that have value to the individual, to look at familiar things with a fresh eye, to examine problems with an open mind, make connections, learn from mistakes and use the imagination to explore new possibilities. Ultimately creativity is the ability to make the world anew, to shape the future and enrich the here and now (ibid., p.9).

This is a more expansive description of creativity than the workplace skill-based constructions. Where it becomes undone is in relation to assessment. One of the aims is to develop “ways to assess creativity” and ensure “more flexible assessments” that will “make sure that creative learning is encouraged and rewarded, that assessment at all levels demands creativity” (ibid.). However, there is a silence: the question of how this can be achieved is not addressed.

Summary

The notion of creativity in Scottish education policy is a desiring-production comprising disparate and sometimes contradictory elements, and haunted by ideas from the past. This policy construction is constantly shifting and reforming, as is evidenced by the recent update to the official definition on the Education Scotland website. This amendment pushes the horizon forward from the recent past of 2020 to the soon-to-be-obsolete “future” of 2025. This recalls Alice’s conversation with the White Queen in *Through the Looking Glass*: Alice can have jam (creativity) yesterday and tomorrow, but never today. Moreover, the White Queen (control) wants to hire Alice (the student) to work for her on the basis of a promise (she will be rewarded with jam/creativity) which can never be fulfilled.

The Education Scotland definitions fold into one another, creating a sense of meaninglessness: there are three skills that will be important for the future, and creativity is the third most significant of these; yet creativity is also a meta-skill, which comprises four different skills, including one of the three “most important” skills identified in the previous sentence on the same webpage. The four skills that constitute creativity are themselves meta-skills. All of this reads like an example of the nonsense utterances that abound in Carroll’s *Wonderland* books. As will

be discussed in the findings, education professionals held unclear and at times contradictory views about creativity; given the knotted definitions in the policy texts and resources, this is understandable.

Generally, however, the current Scottish policy definition of creativity is narrowed down to a discourse which emphasises the contribution of creativity to economic and social development. Individuals can contribute to this through expressing their "little" creativity. How this happens is unclear. An analysis of the policy desiring-machine reveals limited (or no) space for anything more dynamic than this humble creativity.

An exception to this is the more expansive definition in the Creative Learning Plan (2013), which speaks of making the world anew. This plan states that assessment should "demand" creativity. How might this be possible? To consider this, I now analyse an assessment that could indeed be construed as "demanding" creativity, and which will certainly influence Scottish education policy: the forthcoming PISA Creative Thinking test.

Competently Creative: The PISA "Creative Thinking" Assessment

In September 2019, I attended the OECD conference on creativity and assessment[33]. The Centre for Educational Research and Innovation (CERI) researchers used the following slide in their presentation:

[33] In a strange rhizomatic connection, I only knew about this conference because Todd Lubart had presented at the BERA conference earlier in 2019 and mentioned that the OECD event would be worth attending if I wanted to find out about the PISA test.

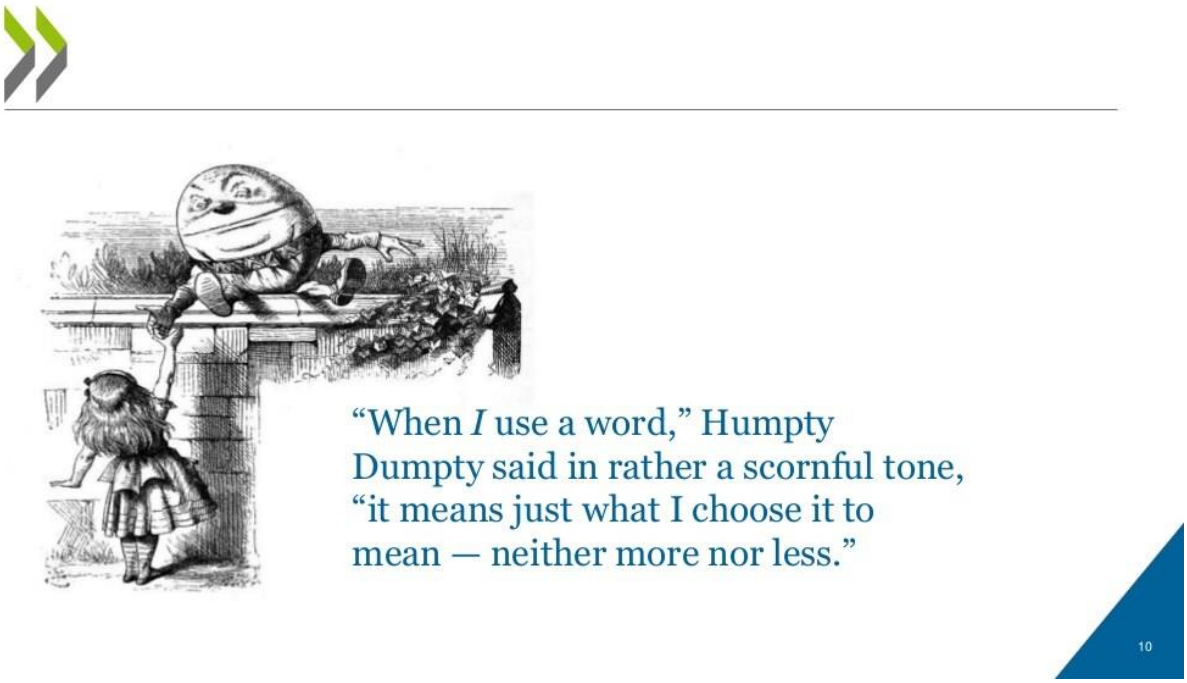


Figure 14: CERI Alice and Humpty Dumpty slide[34]

This reference intrigued me as it suggested self-awareness on the part of the CERI researchers. However, the slide did not include the full quote, which ends:

> "The question is," said Alice, "whether you can make words mean so many different things." "The question is," said Humpty Dumpty, "which is to be master — that's all."

The power to control the meaning of things ("to be master") and for master-words to form dominant, arboreal trunks helps reveal how words are implicated in coding and creating chains of command. Guattari describes this as the voice or pathway of power (2012). In this plateau, my analytical questions are: what definitions of creativity underpin the PISA test; and how does the test propose to measure this construct of creativity? The more fundamental question of why the OECD conducts PISA has been covered in chapter two.

It should be noted that the test has been postponed until 2022, and the results will not be available until 2024 at the earliest. It has been in development since 2013 and has undergone

[34] Source: "Fostering Students' Creativity and Critical Thinking Skills: What it Means in Schools", OECD conference Creativity and Critical Thinking Skills in School: Moving a shared agenda forward" 24-25 September 2019, London. Available: https://www.oecd.org/education/ceri/presentations-creativity-critical-thinking-skills-in-school-moving-a-shared-agenda-forward-24-25-september-2019.htm [Accessed: 4 August 2021]

numerous changes since the outset (see Lucas 2013; OECD 2015, 2019). It is quite possible that there have been further changes.

PISA definitions of creativity

An analysis of the framework (OECD 2019) reveals that what the assessment intends to measure is "creative thinking", and not creativity:

> PISA employs a definition of creative thinking that is relevant to 15-year-old students around the world. Creative thinking in PISA 2021 is defined as the competence to engage productively in the generation, evaluation and improvement of ideas, that can result in original and effective solutions, advances in knowledge and impactful expressions of imagination (OECD 2019, p.8).

However, the framework then conflates the two concepts:

> While creative thinking is still an emerging construct, the broader yet intrinsically related construct of creativity has a strong research tradition. Plucker, Beghetto and Dow (2004[5]) define creativity as "the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context", reflecting its multidimensional and social nature (ibid.).

This statement recognises that the concept of creative thinking lacks a research tradition; hence the reliance on creativity literature. Yet the two are not synonymous. Why not avoid such confusions and just have an assessment of creativity?

Plucker et al.'s (2004) definition is just one of hundreds available in the literature, as discussed in chapter two. All definitions of creativity can be contested, and this raises difficulties in relation to the operationalisation and validity of any attempts to measure creativity. In contrast, creative thinking is the OECD's own concept; they control how it is defined, measured and analysed, thus circumventing potential criticisms of how creativity has been conceptualised. This reflects the intentions of the OECD's Director of Education and Skills, Andreas Schleicher, to

> build and improve our metrics… because you won't improve what you do not measure. When we do not have eyes and ears to see progress on those dimensions, it's unlikely that teachers are going to pay attention to this, that schools pay attention to this (Deeble 2017, n.p.).

In other words, what is measured is what is important. The new concept of creative thinking will become important precisely because it has been measured.

What theories underpin the concept of creative thinking? Despite recognising that the new term is not creativity but is "related" to it, the "Big C/little c" theory of creativity is referenced:

> "[L]ittle c" or everyday creativity (e.g., creatively arranging family photos in a scrapbook; combining leftovers to make a tasty meal; or finding a creative solution to a complex scheduling problem at work (Kaufman and Beghetto, 2009[26])) can be achieved by nearly all people capable of engaging in creative thinking… The PISA 2021 test of creative thinking will thus focus on tasks related to this "little c" creativity in order to minimise the importance of innate talent for performance (OECD 2019, pp.8-9).

Is arranging photos or combining leftovers truly creative? The vignette *Courgettes and Peppers* (chapter six) explores this construct of everyday creativity in greater depth.

The assessment instrument is divided into two elements: a test and a background questionnaire. The test involves tasks in four domains: writing, producing visual artefacts, scientific problem-solving, and social problem-solving. The background questionnaire gathers data on other "enablers of students' creative thinking, including creative attitudes (openness, goal orientation and beliefs), perceptions of their school environment, and activities they participate in both inside and outside the classroom" (OECD 2019, p.18).

Many questions arise from this. Will students who take part in numerous activities outside the classroom be constructed as "more creative"? Access to such opportunities depends on many factors, including the students' socio-economic position. Will a dislike of the school environment be correlated to lower "creative thinking"? It is impossible to know this without further detail on how the data will be analysed, and the theoretical assumptions which underpin this.

The background questionnaire is comparable to conventional psychometric measures of creativity. Although it is not explicitly stated in the framework, the questionnaire was developed by the company ACT. ACT's assessments derive from the same psychometric family as Lubart's Evaluation of Potential Creativity (EPoC) assessment (Lubart 2019). The survey is informed by "the extensive literature on the relationship between personality and creativity, as well as the existing inventory of self-report personality measures that have been used in previous empirical studies of the 'creative person'" (OECD 2019, p.45). It also explores

students' beliefs about creativity by asking whether they believe that creativity can be taught or whether it is innate; and whether it is inherently a good thing in all contexts (ibid.). All of these are contested notions. For example, the idea that creativity can be taught conflicts with Skills Development Scotland's (2018) definition of creativity as innate.

The assessment instrument involves both divergent, evaluative and convergent aspects, since students will be required to generate original ideas, but also adapt and suggest improvements to ideas, based on prompts. It is not clear how test scores will be balanced: what if there is a high score in one domain and a very low one in another? All that is said is:

> The balanced coverage of four domains will make it possible to investigate the extent to which students who are proficient in one area of creative thinking can also demonstrate proficiency in others (OECD 2019, p.23).

The hypothesis would seem to be that creative thinking is a transferable skill. However, the framework acknowledges that the tasks require domain-specific knowledge, as is explained in relation to the scientific problem-solving tasks:

> The importance of domain readiness is clearly an issue that inevitably arises with most tasks that can be imagined in this domain. Originality has little value without validity (i.e., appropriateness), and validity in turn requires at least some level of background knowledge or understanding of basic scientific principles (ibid. p.22).

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Further, the knowledge and skills required when "composing a poem and considering viable scientific hypotheses to explore in a laboratory" are described as being "somewhat different" (p.23). This would seem to be an understatement, as it problematises the whole notion of an assessment of creative thinking as a generic disposition. Why, then, are the PISA authors so keen to find transferability? I would contend that this is due to the OECD policy desiring-production which insists on defining creativity as generic and transferrable, regardless of evidence from the literature or the domain-knowledge based assumptions built into the assessment instrument itself.

Fig.15 provides an example of one of the three writing tasks that will be set. Students are allocated five minutes to complete each task.

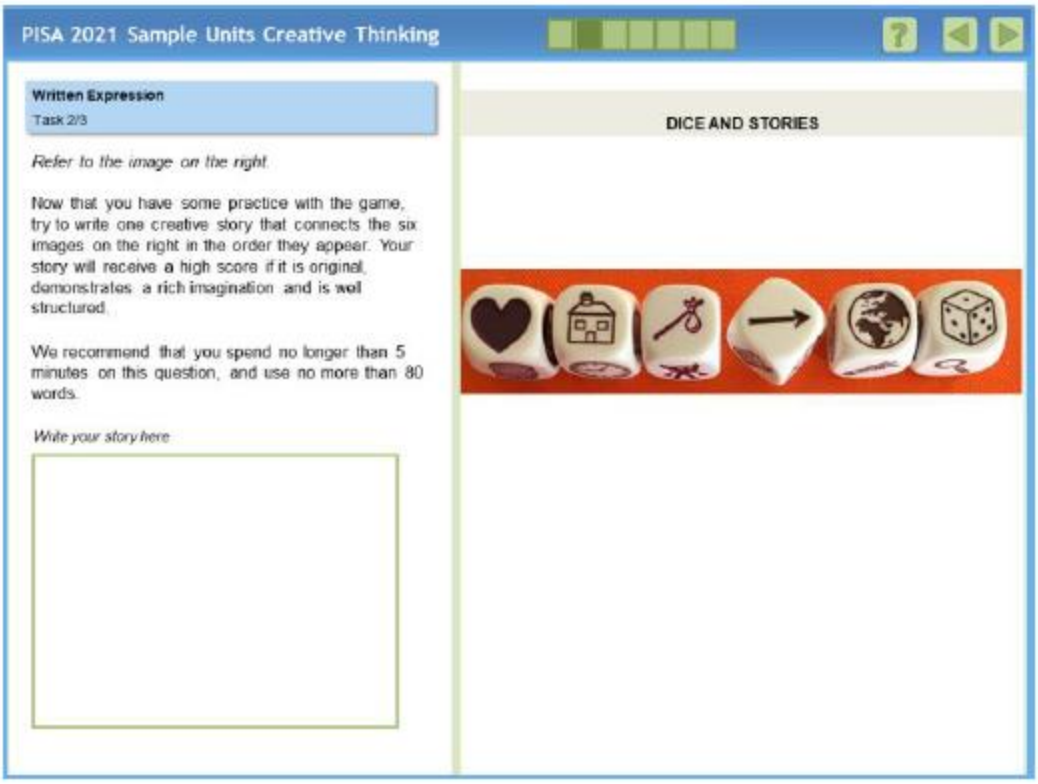

Figure 15: PISA Creativity Thinking test. Written expression task 1[35].

"Human raters" will assess the creativity of the students' responses in relation to how original they are perceived to be:

> To determine "originality", the coders will refer to the task-specific coding guide to determine whether the student's response is considered unconventional, either in theme or approach. Examples of conventional response themes for this item could be: (1) the story is about a heart that starts travelling; (2) the story is about a person looking for love and leaving their house; (3) the story is about someone who does not feel happy at home and decides to leave. If a student's response can be categorised within a conventional story theme, then it can nonetheless be considered original if it employs an unconventional approach (the plot includes original details or has unexpected twists) (ibid., p.33)

This suggests that, ultimately, the score depends on the "human raters'" subjective view of what constitutes originality. This conflates creativity with novelty, which is paradoxical since the assessment aims to combine divergent, evaluative and convergent aspects of thinking.

[35] Available: https://www.oecd.org/pisa/publications/PISA-2021-creative-thinking-framework.pdf [Accessed: 21 November 2021]

The test involves the use of a Visual Tool, which enables students to produce visual artefacts (fig.16):

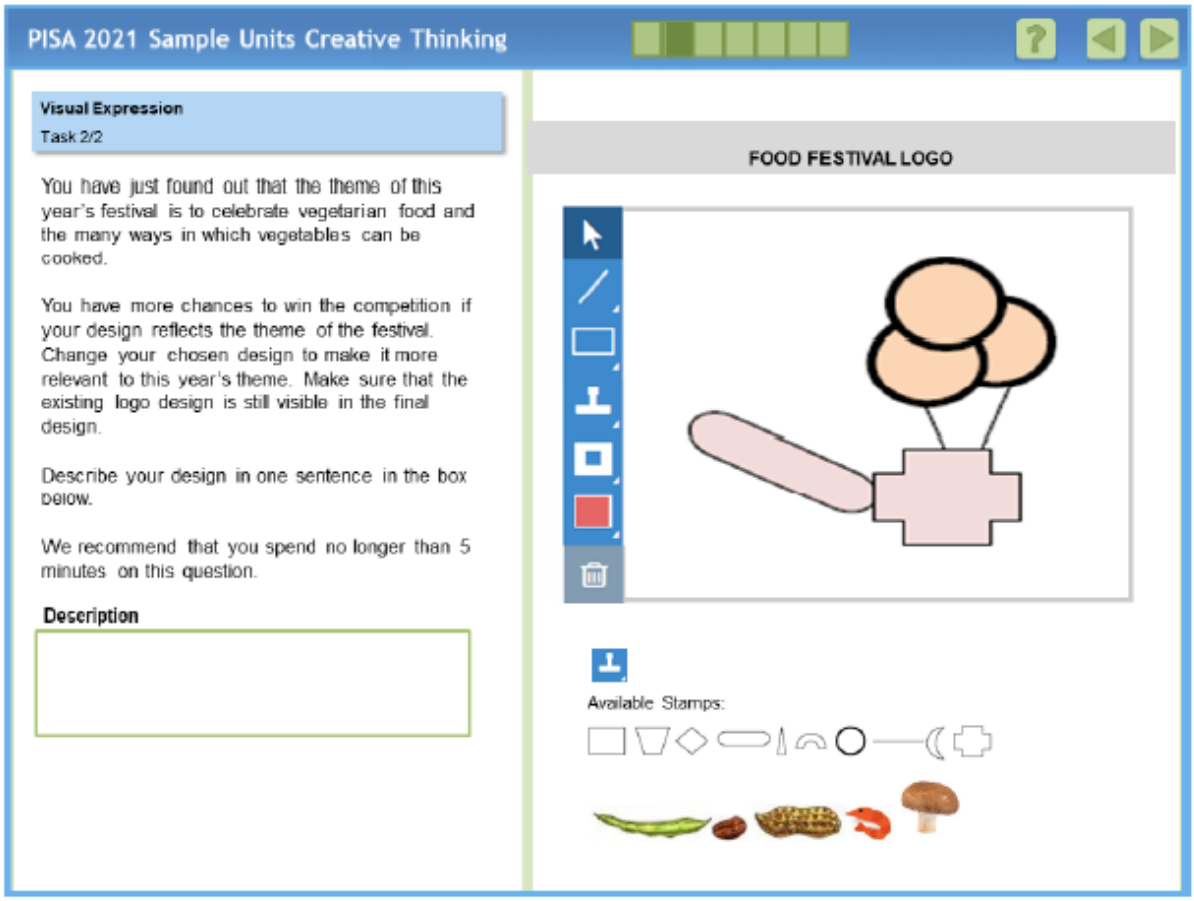

Figure 16: PISA Creativity Thinking test. Visual expression task 3[36].

The visual expression sample unit tasks, in comparison to the writing tasks, seem rather unsophisticated, especially since the target audience is fifteen-year-olds. It is difficult to envisage how students could devise a suitably original design based on the very limited functions available in the Visual Tool.

Measured competence

The framework states that the assessment will measure students' "tangible competence" (OECD 2019, p.6) in three facets: "generating diverse ideas"; "generating creative ideas"; and

[36] Available: https://www.oecd.org/pisa/publications/PISA-2021-creative-thinking-framework.pdf [Accessed: 16 May 2021]

"evaluating and improving ideas" (ibid., p.22). The difficulty is, these are so open and vague that the test units are likely to produce increasing amounts of guidance and rubrics, reflecting Wolf's critique of the spiralling bureaucracy required to specify what constitutes a competency (2001). Coding rubrics will be provided, which will go through a process of verification to ensure they lack cultural bias (OECD 2019). All raters involved in the trial stages will be asked to assess "anchor" responses to ascertain whether there are differences in ratings across countries. Guidance on managing these differences will have to then be produced (ibid.). It seems, then, that a relatively open approach will become increasingly bureaucratic as the assessment moves towards being actualised.

Summary

The analysis in these plateaus has revealed a number of paradoxes, breakdowns and disjunctures regarding how creativity is defined in the territory of education policy. The OECD's decision to use a new concept of creative thinking seems likely to add to the confusion about what creativity "is". Why yet another creative construction? The answer may be that the OECD's concept of creativity needs to be one that they can measure through PISA. Whether this has any meaning is another matter, since the assessment itself seems to be confused about whether creativity is domain-specific or generic. As Kristeller predicted several decades ago:

> If present trends continue… we may look forward to methods of measuring and testing creativity, and if the term continues to defy precise definition, we may end up with the profound claim advanced some time ago by the testers of intelligence, namely, that creativity is what is tested by a creativity test (1983, p.108).

The Creativity War-Machine

In this plateau, I analyse how mantras about creativity and assessment stemming from business theory, neoliberalism and (supposedly) progressivist educational ideas weave together to form a desiring-production. I draw on Williamson's (2018) case study approach to identifying the actors and networks[37] involved in the creativity movement. I use a rhizomatic mapping of transversal connections to explore what the creativity war-machine is producing.

Roots, trunks and branches

According to Troman et al. (2007), the creativity movement developed out of an amalgam of progressive educational theories, knowledge industry ideologies about the power of the

[37] For the reasons outlined in chapter three my analysis uses the concepts of the rhizome, desiring-production and the war-machine, rather than actors and networks.

“creativity of the worker” as a resource for 21st century employers, and policy developments originating in the arts sector which were specifically aligned to future-orientated economic imperatives.

Loveless and Williamson (2013) trace the roots of the present creativity movement to policy developments dating back to the 1990s (although, as I have argued in chapter two, there is a longer trajectory stretching back to the 1950s and the Sputnik panic). The following policy documents are identified as contributing to the creativity drive (ibid.):

- UNESCO (1995) *Our creative diversity*
- National Advisory Committee on Creative and Cultural Education (1999) *All our futures* (England)
- Department of Culture (2001) *Culture and Creativity* (UK Government)
- QCA (2004) Creativity: *Find it, promote it - creativity in the curriculum* (England)
- Department for Culture, Media and Sport (2006) *Nurturing Creativity in Young People* (England)
- Creative Partnerships (2002) *What is Creative Partnerships?* (England)
- NESTA/Mulgan (2007) *Ready or not? Taking innovation in the public sector seriously*
- Demos/Bentley and Gillinson (2008) *A D&R System for Education*

Recent global education policy documents relating to creativity include, but are not limited to, the following:

- European Commission (2020) *LifeComp: Personal, Social and Learning to Learn Key Competence Framework*
- OECD (2019) *Learning Compass 2030*
- EURSC (2018) *Key Competences for Lifelong Learning in the European Schools*
- PISA (2018) *Global Competence Framework*
- UNICEF (2017) *Reimagining Life Skills and Citizenship Education in the Middle East and North Africa: A Four-Dimensional and Systems Approach to 21st Century Skills*
- World Economic Forum (2016) *The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*
- World Economic Forum (2015) *New Vision for Education Unlocking the Potential of Technology*

- UNESCO/ERI-Net (2015) *School and Teaching Practices for Twenty-first Century Challenges*
- UNESCO (2013) *Intercultural Competences: Conceptual and Operational Framework*
- UNESCO/Brookings (2013) *Global Framework of Learning Domains*

There is no space here to go into all the definitions of creativity constructed in and through these documents. In a recent policy literature review which includes most of the above documents, Lucas and Venckutė (2020) conclude that:

> [C]reativity appears in many different guises, sometimes as a transversal competence or skill for lifelong learning… sometimes [it] stands on its own as a robust concept and sometimes sits alongside other related ideas including critical thinking, inventiveness, innovation, entrepreneurship, persistence, grit and curiosity…. Each different word used to describe creativity come[s] freighted with semantic associations (p.44).

Nevertheless, the strongest desiring-productions in evidence are those of creativity as competence and as a workplace skill. In terms of what the policy desiring-machines are doing (Thompson et al. 2021), the constant repetition of assertions about economic necessity produces an affect whereby it becomes near-impossible to express an alternative view.

In terms of academic research and grey literature, two of the most influential creativity movement writers are Howard Gardner and Sir Ken Robinson (Munday 2014). Gardner's work has already been discussed in chapter two. Robinson's work is frequently cited by creativity advocates, and it also surfaced in the research findings (chapter six). My contention is that Robinson's desiring-productions have created powerful signifying chains (Deleuze and Guattari 1988/2017) and coding, and that this can be evidenced throughout the flows of desire — the utterances, texts and images — encountered during the course of this research.

Hogan and Thompson's (2020) analysis of the shift from publicness to privatisation in State education provides a means of understanding *why* and *how* some of these processes have occurred. Essentially, the notion of education as a social good which forms part of the relationship between the state and its citizens (Rawolle et al. 2017) has been disrupted. This derives from the turn to neoliberalism in the 1980s, whereby the state was constructed as inefficient and unproductive compared to the supposedly innovative private sector.

Very briefly, the key tenets of neoliberal discourse are: consumption; individual responsibility; a value-free definition of the self; surveillance; and autonomy (Davies 2005, pp.9-11). From the late 20th century, governments across the globe sought to limit public expenditure and extend privatisation. Public education was reshaped into a commodifiable and contractible form, a process that was achieved through marketisation, privatisation and commercialisation (Hogan and Thompson 2020). This results in a blurring of the dividing line between public and private. Examples include academy schools in England, charter schools in the US and New Zealand, free schools in Sweden and England, and independent public schools in Australia (ibid.). Ball (2012, p.112) describes how this drive for efficiency has resulted in "the private sector now occup[ying] a range of roles and responsibilities with the state… contractors, consultants, advisers, researchers, service providers and so on … selling policy solutions and services to the state, sometimes in related ways." I now explore how these ensembles of enunciation regarding supposedly inefficient state education connect to Robinson's depiction of public schools as "Victorian".

Case study 1: Education as the Victorian Workhouse

Robinson's TED talks on creativity were mentioned several times during the research by participants and also by people asking about my project. The videos of the talks are available online, and are: *Do schools kill creativity?* (2006); *Bring on the learning revolution!* (2010a); *Changing education paradigms* (2010b); and *How to escape education's Death Valley* (2013). At the time of writing, *Do schools kill creativity?* has 71 million views on the TED Talk website[38]. The following collage (fig. 17) comprises screenshots taken from the animated version of *Changing education paradigms* by RSA (Royal Society of Arts) Animate (2010), which currently has 16 million views on YouTube.

[38] TED Talk. Do Schools Kill Creativity? Available: https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity. [Accessed: 14 November 2020]

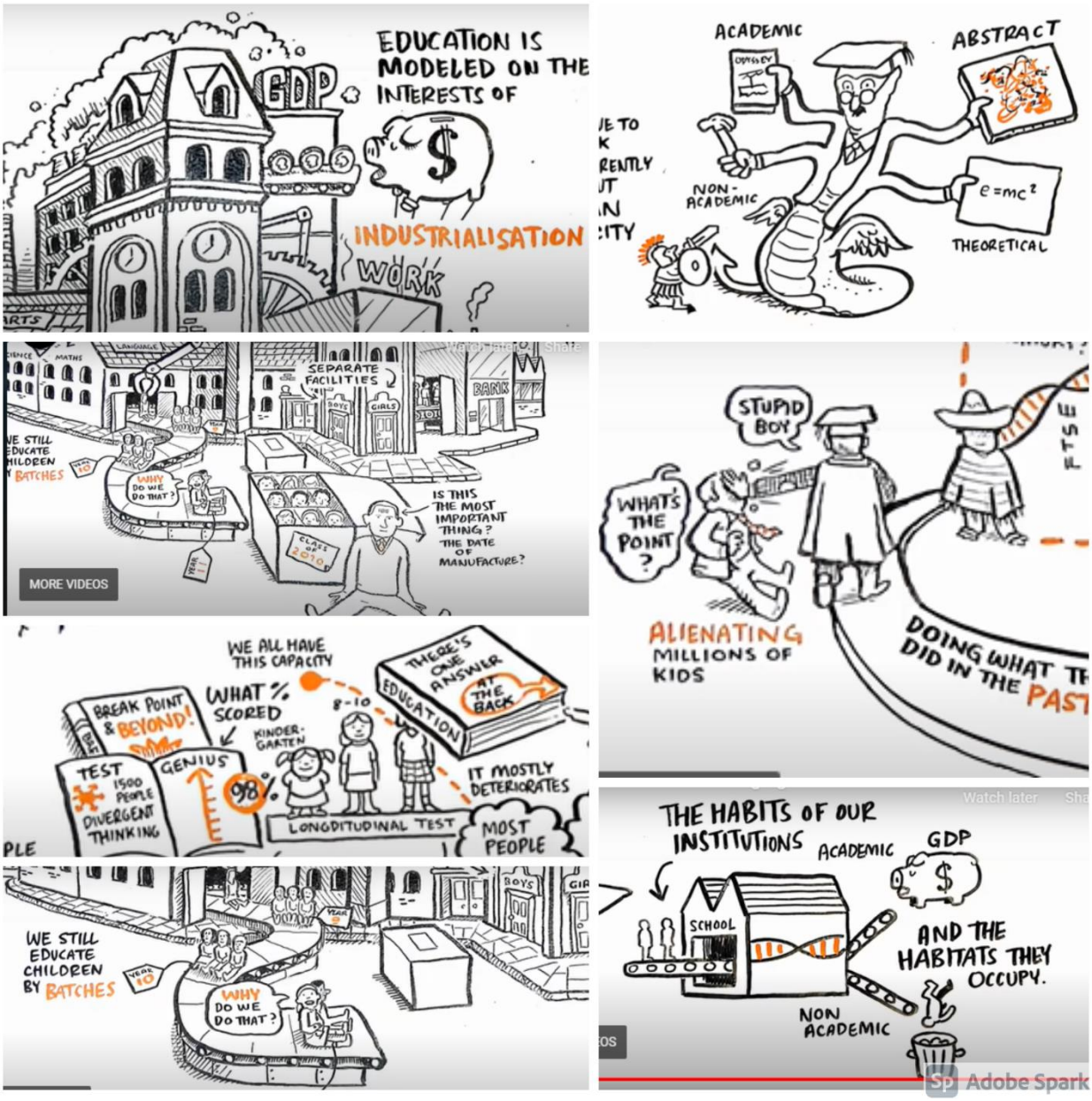

Figure 17: Analytical collage: Robinson, "Victorian" schools.[39].

The collage features chains (Deleuze and Guattari 2008/2017) that convey desiring-productions about creativity. One chain involves the idea that children's innate creativity diminishes as the child ages and moves through the corrupt, adult world and its oppressive institutions, which include the State school system (fig.17).

[39] Source: Changing Paradigms, RSA Animate (2010) Available: https://www.thersa.org/video/animates/2010/10/rsa-animate---changing-paradigms [Accessed: 20 May 2020]

A further chain is that of the school as factory, represented by the images of the production line and the conveyor belt. In the commentary, Robinson explains that the origins of public education lie in industrialisation, and schools are manifestations of this outdated Victorian-era model of production (fig.17). Schools insist on a false dichotomy of academic and vocational, yet they are only truly interested in the academic. Despite this emphasis on academia, however, schools actually produce conformity (represented by children as “batches”, fig.17)

The next signifying chain is that of the teacher as an oppressive, destructive entity. A teacher in the form of the Death Star from the Star Wars films (fig.18) suddenly materialises and destroys students with a death ray. The Death Star-Teacher wears a Victorian-style mortarboard, as does the Monster-Teacher (fig.17), who also sports a three-piece tweed suit with elbow patches, tie, moustache and round glasses. This depiction is near-identical to Teacher in the Bash Street Kids cartoon strip in the *Beano,* a popular children’s comic (a cultural reference that is only likely to make sense to people who grew up in the United Kingdom). The RSA animation also features a teacher using physical and verbal violence to oppress students (fig.17), by calling a child “stupid” and pushing them over.

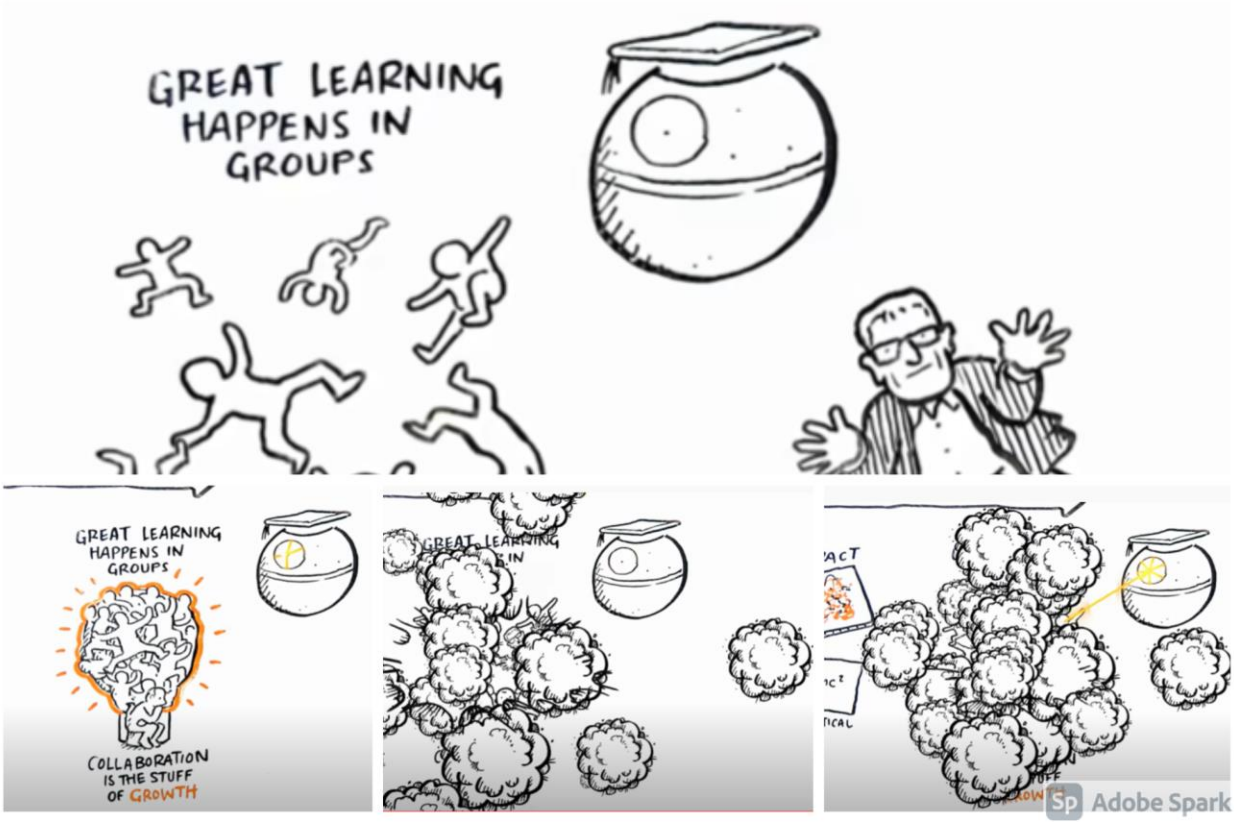

Figure 18: Analytical collage: Robinson, Death Star-Teacher sequence[40].

Essentially, Robinson's argument is that reform is insufficient to overcome the "Victorian paradigm" (Bradley 2015, p.1026) of "antiquated and anachronistic education models, which by and large alienate schoolchildren *en mass* [sic] through irrelevant curricula focused on the economic imperatives and goals of a past era" (ibid.). The text used in the talks reinforces this messaging:

> Reform is no use anymore, because that's simply improving a broken model. (Robinson 2010a)

> Our children are living in the most intensely stimulating period in the history of the earth… and we're penalising them now for getting distracted. From what? Boring stuff at school, for the most part. (Robinson, 2010b)

[40] Available: https://www.thersa.org/video/animates/2010/10/rsa-animate---changing-paradigms [Accessed:3 October 2019]

Robinson's imagery[41] and language has, as Bradley (2015) notes, strong echoes of Pink Floyd's *Another Brick in the Wall* (refrain: "We don't need no education"), the video for which features children entering a school building and then marching in unison through a meat grinder.

However, the desiring-productions evident in the TED talks and the animation become tangled knots (de Freitas 2012), as it is unclear which education system is being referred to — the US, some or all of the education systems within the UK, or Western education more generally. The references to ADHD and Ritalin in *Do schools kill creativity?* (2006) suggest that the context is North America. Yet Robinson's work is informed by extensive empirical research undertaken in England (National Advisory Committee on Creative and Cultural Education 2001). Victorian-era school buildings with now-obsolete separate entrances for girls and boys[42] are common throughout the UK (fig.17). Corporal punishment was banned in state schools in all nations of the UK by 1986. Hence, the images reference an outdated experience of schooling, perhaps reflecting the author's and/or artist's childhoods. It is a depiction of education that is likely to be unrecognisable to younger generations. However, this mixing of cultural references from different times and places results in a sense of timelessness and a feeling that this critique could apply here, there and everywhere, or Erehwon (Deleuze 1994).

Robinson's mantras can be identified throughout popular discourses on creativity. For instance, an article written for the WEF by the CEO of the Lego Foundation describes Western society as "fractured" and in need of fixing through creativity, which outmoded school systems cannot foster (Goodwin 2018, n.p.) since "education systems […] stifle creative thought". Further, "[t]he solution for this is more - but better - creativity/innovation" (Cea and Rimington 2018, n.p.). The insistent messaging continues: "creative thinking scores have significantly decreased in typical Western education systems" as a result of conventional schooling "dumbing down the creative genius we were born with, according to a test developed by NASA [no reference given]" (Weicht 2018, n.p.).

[41] There is a question as to whether the imagery is entirely that of the artist, or whether it was produced through a desiring-machine ensemble of artist, author and commissioning organisation. Presumably, Robinson would have been consulted on the cartoon, and would have given final approval. The RSA would also have had oversight of the final content, since it was published on their website. These assumptions may be incorrect, but nevertheless, the point is that this is how Robinson's message was interpreted by the artist, and the imagery is in keeping with the tone and language used in Robinson's other talks and publications, as Bradley also observes (2015).

[42] Separating children by gender in this way has long since been eradicated in all state schools in the four nations of the UK; however, the signs remain as they have been literally carved in stone.

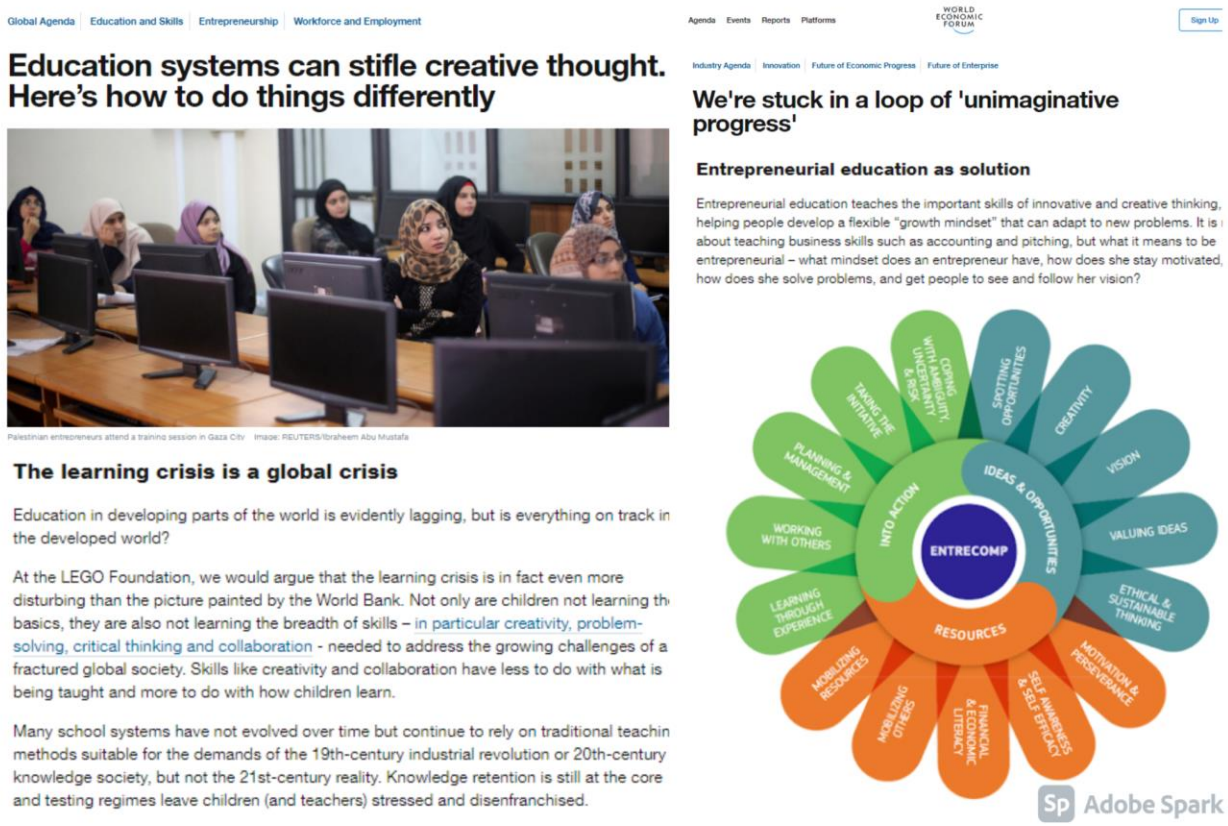

Figure 19: Analytical collage: WEF Learning Crisis social media posts[43].

Robinson's codes about adults/teachers as oppressors finds an echo in a recent publication by the Lego Foundation, *Assessing Creativity* (2020). In one chapter, Rinaldi (ibid.) deploys a quasi-spiritual tone, presenting an idealised view of early childhood that involves declarative, impassioned statements:

> We know that children think in creative ways; there is no question of this... [children] are born creative. Our ethical responsibility, then, to children's beautiful uniqueness, is to listen and observe carefully for the way that they themselves express their creativity – not to determine it for them (ibid., p.18).

The chapter includes a poem in which "They" (adults, in the form of "the school and the culture") repress children and their creativity (fig.20).

[43] Available: WEF Facebook: https://www.facebook.com/worldeconomicforum [Accessed:14 March 2021]

IT

Il bambino
è fatto di cento.
Il bambino ha
cento lingue
cento mani
cento pensieri
cento modi di pensare
di giocare e di parlare
cento sempre cento
modi di ascoltare
di stupire di amare
cento allegrie
per cantare e capire
cento mondi
da scoprire
cento mondi

da inventare
cento mondi
da sognare.
Il bambino ha
cento lingue
(e poi cento cento cento)
ma gliene rubano novantanove.
La scuola e la cultura
gli separano la testa dal corpo.
Gli dicono:
di pensare senza mani
di fare senza testa
di ascoltare e di non parlare
di capire senza allegrie
di amare e di stupirsi
solo a Pasqua e a Natale.

Gli dicono:
di scoprire il mondo che già c'è
e di cento
gliene rubano novantanove.
Gli dicono:
che il gioco e il lavoro
la realtà e la fantasia
la scienza e l'immaginazione
il cielo e la terra
la ragione e il sogno
sono cose
che non stanno insieme.
Gli dicono insomma
che il cento non c'è.
Il bambino dice:
invece il cento c'è.

EN

The child
is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking.
A hundred always a hundred
ways of listening
of marveling of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds

to invent
a hundred worlds
to dream.
The child has
a hundred languages
(and a hundred hundred hundred more)
but they steal ninety-nine.
The school and the culture
separate the head from the body.
They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at Easter and at Christmas.

They tell the child:
to discover the world already there
and of the hundred
they steal ninety-nine.
They tell the child:
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together.
And thus they tell the child
that the hundred is not there.
The child says:
No way. The hundred is there.

^Loris Malaguzzi, Invece il cento c'è / No way. The hundred is there. Translated by Lella Gandini. From Loris Malaguzzi et al., The Hundred Languages of Children, exhibition catalogue, Reggio Children, Reggio Emilia, 1996

Figure 20: Poem "Invece il cento c'è"

Williamson (2018; 2021) argues that the narrative that public education is "broken" is ubiquitous in the "edu-business" (Hogan 2016) critique of public education. Originating in the US, this discourse claims that there is a crisis in the State school system (Berliner and Biddle 1995), which can be remedied by replacing state provision with the supposedly efficient and ingenious private sector. State schooling is devalued in order to justify and promote market-based solutions. However, this is a manufactured crisis (Williamson 2018). What is "becoming" here? As Cole (2008) suggests, "[i]f we dig deeper into the nomadic otherness… we find the commercial mores that characterise late or fast capitalism" (p.29). "Nomadic otherness" is synonymous with the war-machine. The war-machine operates through strategy; it aims to deterritorialise and smooth out the territory of State education, but in doing so, it occupies and striates the landscape. I now consider an example of this from the Australian school system.

Case study 2: Mining the Education System

During the course of this project, I noticed that Western Australia was being tagged in Twitter posts relating to creativity and education (@capabilities_wa). Following the tag revealed that Western Australia featured as a case study in the creativity advocates Bill Lucas and Ellen Spencer's latest book, *Zest for Learning* (2020). @capabilities_wa is linked to a creativity programme, Creative Schools[44], which is delivered in Western Australian schools by an organisation named FORM. Creative Schools involves school visits by artists and other creative practitioners to encourage students' "preparation for the world of work" (Creative Schools, n.d.). It is designed to complement the new Western Australian curriculum, which is aligned to Lucas and colleagues' construction of creativity as five habits of mind (or "habits of learning"):

> We use creative teaching and learning strategies to cultivate student agency, and engage students in deep learning of the Western Australian curriculum, the General Capabilities and the Five Habits of Learning: being imaginative, inquisitive, collaborative, persistent and self-disciplined.[45]

Creative Schools involves interaction between students, teachers and creative practitioners over the course of an academic year. The aim is to "reimagine" the curriculum by using "the power of creativity to teach any subject selected by the school" (Creative Schools, n.d.). The programme (described as "magic") involves training and professional development, which is delivered by "global thought leaders and academic creativity experts". These are Lucas and a number of creativity consultants based in Scotland and England, including associates working for Creativity, Culture and Education (CCE), which in a previous iteration was the New Labour programme, Creative Partnerships.

In terms of where the money flows to and from, FORM is funded by both the Australian Department of Education and the Western Australian Government[46]. FORM is also supported by private sector partners, including: The Crown Resorts Foundation (which in turn "works with the Packer Family Foundation"), Wesfarmers and BHP Billiton[47]. FORM's board members

[44] Creative Schools (n.d.). Available: https://creativeschools.com.au/ [Accessed: 4 March 2021]
[45] Creative Schools (n.d.). Available: https://creativeschools.com.au/about#about-whatisit. [Accessed: 4 March 2021]
[46] FORM (n.d.) Available: https://www.form.net.au/our-partners [Accessed: 4 March 2021]
[47] Source: FORM (n.d.) Archived website: https://web.archive.org/web/20140311015626/http://www.form.net.au/our-organisation/executive-board/ [Accessed: 7 March 2021]

include Stedman Ellis, a former BHP executive[48], and philanthropist Paul Chamberlain, a former tobacco industry executive[49].

Why does any of this matter? BHP is the world's largest mining company (based on market value)[50]. The corporation is implicated in a range of unethical practices. It is the 19th-largest corporate environmental polluter in the world. It is listed as one of the 90 fossil fuel companies responsible for two-thirds of greenhouse gas emissions since the start of industrialisation (Heede 2014). BHP's relations with indigenous populations are controversial, and it was successfully sued in Papua New Guinea for causing environmental degradation to indigenous lands[51]. BHP has been found guilty of corruption and was ordered to pay $25 million to the United States Securities and Exchange Commission in 2015 in relation to its hospitality programme at the 2008 Summer Olympics[52]. In terms of industrial relations, BHP's policies in Chile prompted a major workers' strike in 2017 (Burton and Stringer 2017).

FORM is currently in receipt of substantial amounts of government grants, often from more than one funding stream. In the most recently available accounts (FORM Financial Report 2019, available by request only) FORM received the equivalent of £1,368,850 in grants from state and federal government funds. This is only broken down by grant source, not by project; however, it is reasonable to assume that the Department of Education grant of £250,000 supports the Creative Schools programme. Other sources of public funding were provided by the Department of Local Government, Sport and Cultural Industries; Australia Council for the Arts; Department of Communication and the Arts; Department of Industry, Innovation and Science; the Lotteries Commission; and Healthway. Additionally, it received £925,000 funds from "private sector partners and sponsors" (unspecified).

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[48] "Chief Operating Officer for the Australian Petroleum Production & Exploration Association (APPEA) – Western region since 2010. He was previously the Deputy Director General Strategic Policy with the Western Australian Department of Mines and Petroleum... Stedman's relationship with FORM goes back to his days at BHP Billiton, where his last position was Vice President External Affairs. In this role he was instrumental in nurturing BHP's long-term relationship with FORM". Archived website: https://web.archive.org/web/20140311015626/http://www.form.net.au/our-organisation/executive-board/ [Accessed: 7 March 2021]

[49] Source: Impact 100 WA. Available: https://www.impact100wa.org.au/about-the-committee/biographies/; https://www.businessnews.com.au/Person/Paul-Chamberlain [Accessed: 7 March 2021]

[50] Source: Statista. Available:https://www.statista.com/statistics/272706/top-10-mining-companies-worldwide-based-on-market-value/. [Accessed: 1 June 2021]

[51] Source: Multinational Monitor. Available: "The Big, Ugly Australian Goes to Ok Tedi". *Multinational Monitor*. [Accessed 27 July 2021]

[52] Source: Carter Newell Lawyers. Available: "Foreign bribery update: A harsh lesson for a global miner" [Accessed: 29 July 2021].

I mapped the rhizomatic trails of the creativity war-machine's vanguard (prominent individuals in the movement) to a think tank based in England, Rethinking Assessment. The advisory group members include Bill Lucas and the CCE associates. Other members of the advisory group include Kenneth Baker, the former Conservative Cabinet Secretary for Education; a speechwriter to New Labour Prime Minister Tony Blair; an education entrepreneur whose biographical entry on the site features a quote from neoliberal theorist Milton Friedman about how crises bring opportunities; and the headteachers of several elite private schools (Eton, Bedales, and St Paul's Girls' School). Quotes on the website from the advisory group members include: "If a plumber comes to your house you don't want them to write you an effective essay"[53]. Applying the schizoanalytic map to this think tank reveals the capitalist social class interests that are invested here, since the quotes on the site strongly suggest a neoliberal and elitist ideological orientation.

The rhizome can be mapped to Scotland, as one of the FORM Creative Schools "creativity experts" is involved with Daydream Believers, who produce a "Creativity Skills" module for use in Scottish secondary schools and further education colleges, along with free teaching and learning resources, which are available on their website[54]. At the time of writing, the module and website resources were being promoted by Education Scotland at national conferences. The resources include lesson plans by design agencies, in which students are asked to replicate the adverts produced by multinational corporations, such as the "Dream Crazy" campaign by Nike. This campaign appropriates identity politics, particularly the Black Lives Matter movement. Nowhere are students encouraged to critique this messaging. Arguably, this is "Creativity Skills" specifically for marketing, advertising and design; however, it is presented as a package of transferable skills applicable across all domains.

Summary

This chapter has explored manifestations of the creativity war-machine in Scotland and across the globe, and attempted to make some of the rhizomatic connections visible. It also reveals the capitalist interests that inform the movement's desiring-productions. The dominance of advertising and marketing constructions of creativity recalls Gibson's (2010) argument for a non-heroic term to describe commercial creative products, "creatine" (discussed in chapter one).

[53] Rethinking Assessment. Available: https://rethinkingassessment.com/advisory-group/ [Accessed: 23 June 2020]
[54] Daydream Believers. Available: https://daydreambelievers.co.uk/ [Accessed 14 September 2020]

This has an equivalent in Deleuze and Guattari's (1991) term Merz. Deleuze and Guattari use Merz to describe the concepts produced by advertisers and marketers, who present themselves as "creatives" with the solutions to the world's problems (ibid.):

> How could philosophy, an old person, compete against young executives in a race for the universals of communication for determining the marketable form of the concept, Merz? (Deleuze and Guattari 1991, pp.10-11)

This chapter provides a bridge between the previous chapters and the findings, and gives context to the study by exploring the ways in which the creativity war-machine is influencing and reshaping public education. The brief case studies highlight some of the ways in which the creativity war-machine is successfully territorialising education. The analysis of the PISA assessment and the Robinson talks, in particular, provide important context for the discussions that follow next.

Chapter 6: Tangled Tales

Introduction

> Something in the world forces us to think. This something is an object not of recognition but of a fundamental encounter (Deleuze 1994, p.139)

This chapter presents the findings from my research encounters in the territory of education, namely the interviews and focus groups held with teachers and other education professionals. It also features some tales from the education policy events I participated in.

The central image of thought in the thesis is that of the desiring-machine (Deleuze and Guattari 1983). To reiterate, the research events are desiring-machines; the entire project is a desiring-machine; so is education itself, as is each school I visited and all the individuals I spoke to. So am I. What is crucial here is the notion of transversality (Guattari 2000), which is to say, that all these desiring-machines intersect and interact. The point of the analysis is not merely to note the connections, but to consider the desires that are being produced through them.

Most of the individuals quoted here are teachers; all of them operate within the Territory of Scottish state education. Teachers are a profession and as such can be considered an example of Guattari's (2000) concept of the collective or group subject. However, the analysis is "not about generalising about the groups in question but understanding their inner workings through research" (Cole 2016, p.148). The concept of the desiring-machine helps to grasp the constantly interconnecting, breaking and re-forming relations between individuals, schools, local authorities, education consultancies and the education system more generally. Following Guattari's schizoanalytic cartography (2012), the concepts of Territory (T), Flow (F), Universe (U) and Phyla (Φ)[55] are invoked to understand these relations: a "meta-modelling of trans-Assemblage relations" (ibid., p.20). The focus is on the desiring-productions of creativity that are circulating in and through school education.

The chapter is structured into plateaus which feature the most insistent desiring-productions from across the data. Within these sections, there are vignettes, and these have a more in-depth, narrow focus. Analysis can be understood as a process of separating out and splitting up

[55] I use the formula (e.g. F→U→Φ→T) sparingly. My stylistic preference is to avoid the overuse of formulae as it can be off-putting for readers.

data and this is, as Cole explains, the "*schiz* of schizoanalysis itself" (2016, p.9). I selected moments in the data where tensions and passions intersect, crystallise, fuse, or boil over due to reaching a peak of intensity (Deleuze 2004, p.53). The accounts presented here are collage-style but in words. The plateaus are also haunted by various conceptual personae, who help me to analyse what is "becoming".

It is important to note, as discussed in chapter four, that these tales are just one possible way of interpreting what the participants said to me. My process involved writing and rewriting, experimenting with methodology and theory, re-presenting the data from different angles, expanding and contracting the excerpts, bringing in other voices, and varying the tone and emphases. However, readers will bring their own understandings, and will see different things in here from what I saw. I do not claim to have the final word.

Under Control

Bound

This section looks across the data to identify a *ritournelle* which typically emerged in the initial stages of the interviews and focus groups. When participants started to articulate their thoughts about creativity and its relationship with assessment, they often began with notions of constraint. The following short quotes, disjointed and out of context, convey this sense of repetition and intensity. I begin with a quote from the Lochside Academy focus group, which comprised Callum (English teacher), Helen (Physics teacher) and Jacqueline (Maths teacher):

> Jacqueline: [Teachers] don't have space to be creative. You're bound by the constraints [Lochside Academy, Visit 1, Focus Group 1]

Teachers at the same schools often echoed each other's language, a tendency which reflects the dynamics of focus groups, but also points to the shared beliefs held by colleagues: an instance of a collective or group ensemble of enunciation (Guattari 2013). I noted that the Lochside Academy teachers used the term "bound" several times, each time expressing a variation on the theme of constraint:

> Helen: There's no scope for [creativity] in science. We're bound…. [Lochside Academy, Visit 1, Focus Group 1]

And, later in the discussion:

> Helen: Creativity is, I think, much easier for primary. In secondary, you're bound by the SQA's requirements, by the logistics of the timetable, by [subject] siloing....[Lochside Academy, Visit 1, Focus Group 1]

Another instance of this can be seen in the following quotes, taken from two separate fieldwork sessions at Glen Academy: firstly, an interview with the headteacher and the depute; and secondly, a focus group, held on a different date, with three class teachers:

> Peter (maths teacher): In the exam system, there's no room to be creative. [Glen Academy, Visit 2, Focus Group 1]

> Graham (depute head): We've seen where assessment is blocking creativity. [Glen Academy, Visit 1, Interview 1]

Again, this suggests a collective ensemble of enunciation (Guattari 2013) among the staff I spoke to at Glen, in this case regarding the negative impact of the qualifications system on creativity. Similar enunciations manifested in other contexts, for example in the focus group at Burgh High where teachers expressed the idea of creativity "coming up" against a barrier:

> Catriona (Biology teacher): We're promoting creativity in the BGE, and then we come up against exams.

> Lyndsey (Physics teacher): Pupils come up to [the secondary school] in first year, and the system dulls [creativity]. They're inhibited from being creative…[Burgh High, Visit 2, Focus group 1]

These similarities indicate a rhythmic insistence emanating from a shared incorporeal Universe of ideas (Guattari 1992), enunciated through a group body within the Territory of education (U → F → T). Evidence regarding the similarities in teachers' beliefs across different research settings and contexts attests to this idea of a shared professional discourse (Priestley et al. 2015).

These ideas (Universe) suggest that creativity flourishes in the earlier stages of education (whether this is understood as early years, primary school education or the Broad General Education (BGE) more generally), but once students enter the Territory of secondary school, and the Senior Phase in particular, this creativity is constrained. The cause of this is identified as "exams", "assessment" or "the system" more generally. Further, there is a construction of the

sciences as a domain where creativity faces particular difficulties: there is simply no room for it to exist.

Sometimes, it appeared to be teachers themselves who were responsible for this constraint:

> Kirsty (English and Business Studies teacher): We squeeze all the creativity out. [Burgh High, Visit 2, Focus group 1]

This description of creativity as "squeezed out" brought to mind the coils of a constricting snake — the serpent that represents control society (Deleuze 1992, p.3). However, some professionals used imagery that was even more violent than this:

> Fiona (local authority officer): [Teachers] are stepping in and crushing [creativity].... Teachers are destroying it, but it's not their fault. [Local authority F, Visit 1, Interview 1]

Fiona's words conjured up images of the teacher as a giant "stepping in" to crush children's creativity underfoot. Fiona is a former depute head, now employed as a local authority "official interpreter" (Honan 2001), and her account perhaps reflects a hierarchical frustration at what she perceives as class teachers' reluctance to embrace the creativity agenda and be open to change.

Notions of blockages, restraint and destruction had a rhythmic insistence across the data. For this reason, the conceptual persona who haunts this first plateau is Prometheus. In the original Greek myth, Prometheus is a Titan who steals fire (which represents civilisation or enlightenment) and gifts it to humanity. Zeus punishes him for this act by chaining him to a rock. In Percy Bysshe Shelley's *Prometheus Unbound,* a reimagining of Aeschylus' *Prometheus Bound*, Prometheus is more of a human than a divine figure, and represents love, hope, doubt and desire, as well as creation and knowledge. He does not reconcile himself to Zeus (or power), as is the case in Aeschylus' original (Jung 2006). For the purposes of this analysis, Prometheus represents the notion of creativity as something that is bound. Prometheus helps me analyse the ensembles of enunciation regarding constraint, repression and violence used by education professionals in the discussions.

However, constraint and containment were not the only metaphors deployed by the teachers. The following extracts explores education as an unhealthy, festering Territory.

Festering not fostering

In some of the discussions, teachers presented education as a Territory in which creativity struggled to grow. This was particularly noticeable at the joint focus group held at St Drostan's Academy:

> Claire (depute head, St Drostan's Academy) You need to be adventurous. Otherwise, you get stagnation, and a stunting of creativity. So, the question is, how do we keep things *fresh*?
>
> Matthew (headteacher, St Medan's High): We have a system which stifles creativity… It's over-prescriptive to the detriment of young people's creativity. [Joint focus group St Medan's High and St Drostan's Academy]

This is schooling as a Territory where growth is "stunted" and "stifled" to the extent that it is difficult to breathe. This invokes the enveloping, choking vapours described by Deleuze and Guattari (1994): the fog of illusions and false assumptions that are produced by the plane of immanence itself. This is school education as a kind of mud swamp or polluted environment.

Under siege

Teachers' words often pointed to the confusions, or knots (de Freitas 2012) that arise when creativity is situated within the context of control society and its striated educational structures. I visited the high-attaining Burgh High, located in an affluent area within local authority A, on two occasions. James, one of the English teachers, had a keen interest in research and in creativity, which no doubt explained his interest in participating. During my first visit, his opinions about creativity and assessment resonated with the theme of violence that is woven throughout these findings:

> James: Conflict is inherent in the system. The government, for example, totally misunderstands CfE [Curriculum for Excellence]. It has the potential to be progressive, but they totally misunderstand it. [Policy makers] carry on behaving in the same way, but there is a lack of belief. That's why nothing changes. They lack belief that it will. The situation is that you have a reactionary curriculum, with confused staff, hunkering down. It's overwhelming. [There's a] love of management — not leadership, because there is none! — a love for accountability. To, essentially, create meaningless things. [Burgh High, Visit 1, Interview 1]

The phrase "hunkering down" invokes images of sheltering in a bunker to protect oneself from assaults from above. In later discussions, James was optimistic about the transformative

potential of teacher agency (Priestley et al. 2015). In this first interview, however, his views were bleaker:

> What you have is chaos. The system is chaos. Hence [the] scramble to rework policy all the time…. Are politicians ever going to be able to divorce themselves from their love of bureaucracy, and are we ever going to have a system that *allows* you to be the way you want…? [Burgh High, Visit 1, Interview 1]

James' notion of "meaningless things" reappears in the section which takes us to Wonderland, a world in which nonsense abounds. For James, policy outputs are the products of an inherently disordered and malfunctioning system. Those enmeshed in the policy desiring-machine not only love their own oppression ("their love of bureaucracy") but insist on inflicting the microfascisms (Deleuze and Guattari 1988/2017) of performativity on others. The phrase "rework[ing] of policy all the time" invokes Guattari's (2000) circles of deadly repeat, in which nothing substantial ever changes.

Loops and hoops

While some education professionals identified "the system" itself as the source of constraints, others specifically mentioned performativity, or synonyms such as accountability, managerialism or bureaucracy. The metaphor of jumping through a hoop, or a loop, was deployed to convey what this means for teachers and students:

> Gordon (headteacher): The accountability basically [means you have to] jump through a hoop. [Parkview Secondary, Visit 1, Interview 1]

> Joanne (early years practitioner): We're driven by practice-based knowledge, we're driven by child development and observations of learning, and professional noticing and all that sort of stuff… We can gather all that evidence of achievement and learning without having to jump through hoops that schools have to do. [Local authority E, Focus Group 1]

Joanne believes that schools have less freedom than early years settings, yet she also describes the domain of early years as being "driven" by theories. In other interviews, the word driven was used to suggest an engine-like, inhuman process. For Joanne, "drive" represents an energetic forward movement. But her account also illuminates how official policies and practices, founded on sacrosanct theories such as child development, form signifying chains of techno-scientific and subjective semiotics (Guattari 2000, p.48), which then direct professionals' thinking.

Loops and hoops have a strange echo in the World Economic Forum's (WEF) social media posts about broken education. In this narrative, Western school systems are "stuck in a loop of 'unimaginative progress'" (fig.19). The chains and codes being projected by the WEF become visible when a schizoanalytic mapping is applied. The WEF's desiring-productions involve the use of machinic Phyla (social media, in this case) to convey the idea of education as a Territory in crisis (U → Φ →T). However, this is a manufactured crisis serving the interests of Integrated World Capitalism (Guattari 2000; Williamson 2018; 2021). The desire is for State education to be deterritorialised, so that it can be territorialised by the private sector.

Emily, art and design teacher at Parkview Secondary, also spoke of hoops when drawing on her experience of marking Highers and Advanced Highers:

> [Marking] at Advanced Higher, we would get folios in from schools where they'd [recently] switched from doing A Level to Advanced Higher, and we'd be absolutely blown away by them, because the depth and quality, it was extraordinary and really, really, really mature. And my assumption is that if they're able to get that out of them at A Level, whatever they're teaching them... it's obviously doing something that's more in line with creativity than this little train track that SQA expect people to be on. And that's rewarded in a particular way. What *is* rewarded — I'm finding myself having to jump through loops, jump through hoops and produce work that, erm, is *pedestrian*. [Parkview Secondary, Visit 2, Interview 1]

Emily's use of the word "pedestrian" conveys the idea of slowness and mediocrity. This characterises the type of work Emily regards as receiving good grades within the current Scottish qualification system, specifically in Higher Art and Design. Thus, assessment creates the conditions for pedestrian work, and awards it accordingly. In comparison, the work that was submitted for Advanced Higher by schools that had until recently offered A level Art was, she believed, significantly more sophisticated. Emily makes use of repetition to emphasise this point: "really, really, really mature". There is an idea within Emily's account of reaching out beyond the ordinary and towards grown-up-ness (Biesta 2017), as well as towards difference and becoming other: a minoritarian education (Lines 2008).

Emily uses the striking phrase "this little train track that SQA expect people to be on" to compare the students plodding along on a narrow line with those who are speeding ahead towards a potential line of flight. The little train track brings to mind images of narrow-gauge miniature train lines, of the sort that appeal to very young children, suggesting immaturity and a lack of agency.

The engine is a machine of control, running on the little track with no variation or choice in terms of where it can go, other than in a closed loop. Speed features throughout the conversations with Emily. Sometimes she uses velocity to describe a positive phenomenon (accelerated maturity, which contributes to the production of exceptional work), and sometimes it she uses it in a negative sense — the relentless "mechanical device" that is the Higher, which requires a two-term drive that she describes as "brutal" and which is accompanied by a pressurised marking regime which leaves little space for professional reflection.

Like clockwork

Mechanical metaphors also featured in the interviews with Gordon, headteacher at Parkview Secondary, and Fiona, local authority F "official interpreter" (Honan 2001). I identified a rhizomatic connection between their constructions of teachers as pressurised production line workers, simultaneously lacking autonomy and out of control. It is perhaps not a coincidence that Gordon and Fiona have a shared experience of working in senior management in schools.

Gordon commented on the difficulties faced by a deskilled profession in the context of delivering a challenging policy agenda:

> [Creativity] needs to be visible, it needs to be values-based. [But] teachers are black and white. The focus of assessment, right now, it requires mere technicians. It's deskilling…. Some teachers are just clock-watchers. I'm working 60 hours per week at the moment…. There's no professionalism. You need ethical, moral purpose. Not a workforce handed down on a platter. [Parkview Academy, Visit 1, Interview 1]

After a wide-ranging discussion on different approaches to assessment, Gordon reflected that:

> With assessment at the moment, they're trying to do something mechanistically for something complex. You need assessment that is suitable for feedback and process, that provides direction and challenge. Then, with attainment, [what we] do want is clarity about progress, about level-measuring. Teachers here [are] not good at that.

Gordon believes that a moral and values-based approach to assessment would be meaningful and transformative, but that this requires a subtlety in thinking that is not possible for the robot-like teacher who thinks in black and white. Current assessment processes require "mere technicians", producing the incorporeal transformation (Thompson et al. 2021) of teacher into automaton. Gordon, on the other hand, is "working 60 hours a week", which is hardly desirable or sustainable; this perhaps explains the ambivalent attitude he holds towards the teachers in

the school, as he does not regard some of them as working hard enough. Gordon's account reflects the pressures placed on senior management and the hierarchical, arboreal tensions produced in schools as a result.

In the trenches

The conceptual persona who haunts this particular section is Denys l'Auxerrois. In The Stress, the second tapestry in Phoebe Anna Traquair's *The Progress of a Soul*, Denys is torn to pieces in a frenzied act of *sparagmos*, a sacrificial dismemberment that formed part of Dionysian rituals (Turney 2019). This rather melodramatic image is used to explore the theme of the teaching profession as under attack and pulled in various directions until it fractures:

> Fiona (local authority officer): And teachers are always in such a hurry, and I know that because I've done it. And it's today, and I've got to get through it, and I've got to get worksheets copied and duplicated, and I've got to set out this and that, and *boom, boom, boom, boom, boom*, children in, register, run the day, collapse, start again. [Local authority F, Interview 1]

The above extract is from an interview that took place in a bustling, noisy cafe. Fiona's vivid account transported me to the life of a stressed, overworked class teacher. It was delivered in a rapid, almost breathless manner which effectively conveyed the pressures of teaching. And it also seemed to echo the cacophony and endless movement of the cafe setting.

"*Boom, boom, boom, boom, boom*" is suggestive of explosions and artillery shells. The repetition increases this dramatic effect. Also present in this account is a compressed notion of time (Munday 2012) in which tomorrow will be the same as today. Life is an endless treadmill in which the teacher has no choice but to keep running, fall, get up and repeat the same thing all over again. Fiona then described how it is necessary for teachers to have a moment of caesura ("that moment") that stretches the desiring-machine to the point of breaking. This is where the line of flight becomes visible (Thompson et al. 2021), and hence the possibility of something *other* might become:

> So that moment to sit back and think, well, what is creativity to me? Am I afraid or do I love it? Do I have it in my life at all, actually? Do I want it in my life? If I don't, why not? And what would it bring if it was? [Local authority F, Interview 1]

Hierarchies were regarded by some participants as both hindrances and facilitators of creativity. Continuing Fiona's military theme, she identified "permissions", teacher resistance and retreat as blockages to the flow of creativity:

> CfE gives us permission to be creative, but practitioners have found the freedom this offers too much and have retreated into safety… Permissions can be inhibited or explored in a school within the permissions that that the headteacher gives, with his or her words, and their body language and energy, saying "yeah, yeah, yeah, we want creative learning"— but they don't, and you know that based on how they behave. [Local authority F, Interview 1]

Again, Fiona uses repetition and intensity to convey her frustration with the headteachers who merely utter "yeah, yeah, yeah", giving the impression that they agree with the creativity agenda, but contradicting this with their actions (or lack thereof). The suggestion is that, in this sedentary and straited space, creative learning cannot take hold and flourish. This is because creativity is, for Fiona, associated with speed, vitality, energy and life. "Yeah, yeah, yeah" suggests appeasement of the local authority officer who is pursuing this policy agenda. Fiona needs schools to connect into the policy desiring-machine, and the "resistant" headteachers impede this process. It is not sufficient for teachers to merely say they want creativity: they have to desire it.

Fiona regards the curriculum as "giving" teachers permission, rather than teachers having agency and control. Talk of permissions was evident in other discussions, in this case as a facilitator of creativity:

> Mhairi (drama teacher, St Medan's): We're lucky. You [i.e., the headteacher] give us permission to do this stuff. [Joint focus group, St Drostan's Academy and St Medan's High]

Mhairi regards her school as fortunate, because the headteacher "permitted" creativity. Yet sometimes all is not as it initially seems. I visited Parkview Secondary twice. During the first visit, I thought that the headteacher, Gordon, had presented a rather negative view of his staff (discussed above). However, Emily, art and design teacher, portrayed Gordon as someone who understood creativity and valued research:

> [Gordon] has a real interest in educational research, and he's very very aware of it, not just [aware], but also how he's going to apply that […] And we've come from a regime of about 10,12 years of — absolutely not. And so, I've pretty much been banging my head,

> just not bothering really, just keeping my head down and getting on with what I needed to do. So, you need to have that sort of support, there needs to be a belief. [Gordon] will believe that this is the way forward, and he will believe this is the way forward for young people, whereas previously that wasn't the case. [Parkview Secondary, Visit 2, Interview 1]

Had I not reconnected the research desiring-machine back into Parkview Secondary again, this is not the impression I would have gone away with. This quote emphasises the importance of having support from the senior management team (Drew et al. 2016) for sustained change. Also visible in here is a *ritournelle* of violence ("banging my head") and sheltering from blows ("keeping my head down"), which connects back to the earlier stages of the interview in which Emily, as with many other participants, described a sense of being under attack.

An additional rhizomatic knotting is that even though senior management may support creative, evidence-based and professional enquiry-led approaches, a split between headteacher's desires, and how these are perceived by class teachers, can become visible. This is discussed in the following vignette, which explores interruption and disconnect.

Vignette: Buzzers and Bells

This vignette focuses on the caesura, which is one of the seven principles of assessment for creativity (chapter seven). Laura, English and Media Studies teacher at Glen Academy, had agreed to take part in an online interview. Immediately prior to the interview, I participated in an online conference on the theme of creativity and education. A member of the senior management team from Laura's school had delivered a presentation at this event. As it turned out, Laura didn't know about this, and asked what had been said:

> Barbara: It did sort of sound like, you know, this was kind of a revolutionary co-design approach with pupils that led to a suspended curriculum — which, I don't know if that's actually how it looks…?
>
> Laura: In reality!
>
> Barbara: In reality! [Laughter; intercom buzzes] Hold on a second, sorry, I'll just go and let them in…
>
> [Recording resumes]
>
> Barbara: ...Yeah, em, eh, it was interesting with what we were saying about the OECD research, and what the researchers were trying to do with that and then what they ended up with…[Glen Academy, Online interview 1]

The conversational line that sprung up after the interruption did not head in the same direction prior to the buzzer going off. That conversation had been about the differences between what the senior management at the school had presented regarding the co-produced curriculum, and what Laura understood to be actually happening. Yet looking at it again, there is a thread running through it in relation to research intentions and aims, which may be quite different from what "actually" occurs, as with the CERI researchers and the OECD's eventual decision about the design of the creativity assessment instrument (see chapter five). As Laura remarked, there is what is happening "in reality", and then there is how the story of the research is told to others.

A different type of interruption was that of the school bell and the missing data. In this extract from the focus group at Burgh High, James reflects on how students are constructed as "good" or "bad" at a subject:

> James (English teacher): What they've done with the identity of mathematics, 'cos lots of kids are actually quite good at mathematics, [but they] go into maths already believing they're crap. So the, the idea of, the way in which it's presented to them, or given to them, is you either can or you can't, you're numerate or you're not. You're either good at modern languages or you're not —
>
> [interruption: school bell, marking the end of the period]
>
> James: [inaudible] … and that's where the teacher's creativity comes in.
>
> [Burgh High, Visit 2, Focus group 1]

The [inaudible] is a caesura where the data is severed. James kept talking but his words were drowned out by the noise of the bell. Although I went over the recording numerous times, it was impossible to make out what he was saying. Ironically, this occurred at the very point where James discussed what he thought made the difference to children's learning in relation to teaching and creativity — rather crucial in terms of this study.

Crumbling

I now consider themes of fear and the "disintegration" of the self. In this extract, Fiona discusses her use of provocations in training events, the aim being to challenge teachers to develop their own definitions of creativity:

> So, starting to, initially [think about] what *is* the definition? Your definition that you've come with, what are your *fears* about that? Because we've all had school *done* to us, joyously or not. [Local authority F, Interview 1]

Fiona implies that teachers' fears block them from exploring creativity, and that this stems from a *ritournelle* involving memories of a joyless schooling that is "done" to people. Deleuze and Guattari's analysis of the administration of control society is that it involves a

> whole micromanagement of petty fears . . . to the point that the motto of domestic policymakers might be: a macropolitics of society by and for a micropolitics of insecurity (2017, p. 252).

This idea of a micropolitics of insecurity resonated throughout the data. Fear, or synonyms for it, surfaced in many of the discussions. For example, the idea of high-stakes assessment as something which produces stress and harm and prohibits students from expressing their creativity was present in both the discussions at Burgh High and at the joint focus group at St Drostan's Academy:

> Kirsty: To be creative, you can't be scared to make mistakes. But [students are] terrified [Burgh High, Visit 2, Focus group 1]

> Claire: [Creativity is] not just personal, kept to yourself. You have to show it in order to achieve… For example, when they have to undertake a preparation for performance in drama. And that's all fine, when they're preparing, but when they actually have to perform…. pupils *crumble*. [Joint focus group, St Drostan's Academy and St Medan's High]

For assessment, students have to bring something of themselves into the striated space of control, and this is where they risk "crumbling", in Claire's words. In her view, when the personal enters the assessment machine, the self risks disintegrating. Guattari's (2000, p.vi) transversal collective subject attempts to overcome this dissolution into "inaction, lethargy, or chaos". However, this requires an awareness of the ecosophy in which we find ourselves and which we communicate with and through (ibid.). What are the characteristics of the educational ecosophy? In the following, the Territory of schooling is compared to Alice's Wonderland.

Wonderland

Fiona's mention of love and fear ("am I afraid or do I love it?"), and the need for space to reflect on what creativity might mean, had a rhizomatic echo in this extract from the Burgh High focus group:

> James (English teacher): You start going down a hole, frustrated by the lack of clarity and sense. What is it I'm trying to do for these kids, as they move through the system?
>
> Kirsty (English and Business Studies teacher): There's so many people that are scunnered. Not just here, it's everywhere. It's any teacher you speak to, and [it's] how hard it is, and how much of yourself you have to give, and where does that stop?
>
> James: A friend who is a teacher was saying…"I have to find a get out, I have to find a way…. I have to find an escape from this, because it's just becoming far too much." So therefore to find spaces for creativity, or even have that time to find out how deep I would go to find out what that means to me, where we would have that time? I really, really don't. And that constant change, all the time, is just terrible, absolutely terrible. [Burgh High, Visit 2, Focus group 1]

This is a Territory akin to Wonderland, a chaotic, chthonic domain lacking in sense, where teachers feel they are vanishing like Alice down the rabbit hole. Kirsty's words brought to my mind an image of the teachers giving all of themselves away and ultimately vanishing completely, just as Alice fears will happen after she drinks from the bottle labelled Drink Me:

> "...it might end, you know," said Alice to herself, "in my going out altogether, like a candle. I wonder what I should be like then?" And she tried to fancy what the flame of a candle looks like after the candle is blown out. (Carroll 1865, p.19)

Alice is the conceptual persona who haunts this particular territory of the research. Alice's shrinking and disappearing helped to explain Deleuze and Guattari's (1988/2017) notion of becoming-imperceptible in order to become something new:

> To become imperceptible oneself, to have dismantled love in order to become capable of loving. To have dismantled one's self in order finally to be alone and meet the true double at the other end of the line… to no longer be anybody. To paint oneself gray on gray (p. 218)

Might, then, this sense of vanishing be the death of one way of "being teacher"?

Shrinking and growing

> O wad some Power the giftie gie us
> To see oursels as ithers see us!
> It wad frae monie a blunder free us

> An foolish notion:
> What airs in dress an gait wad lea'es us,
> An ev'n devotion!
>
> (Robert Burns (1786), *To a Louse, On Seeing One on a Lady's Bonnet at Church*)

The territory of Wonderland is marked out like a giant chessboard. To escape from one square to another, Alice must physically shrink and grow to get through doors and reach keys. In the conversation with Fiona, she described how people "become" the shape formed by the Education Scotland spiderweb (fig.4). The spiderweb can expand or contract depending on what is being captured within it. New skills, completed training sessions, qualifications and experiences can be added to the web, or taken away. It is a model that is about continual flux. For Fiona, shrinkage is caused by negative emotions that constrain and limit creativity, whereas confidence grows the shape, and by extension, expands the individual and their existential Territory (U → Φ → T) (Guattari 2000):

> Fiona: [The spiderweb] can also reveal that people say, "Oh yeah, I'm really imaginative, I'm a great problem solver", whatever, and then you do an exercise with them that explores [that], and you say, "How did you feel doing that, and were you [imaginative]?" "Oh, actually I thought I was more, I [thought I] was stronger at this than I am, so now I want to re-evaluate myself." "No, it's not that you've got worse, it's that your understanding of this is clearer". So your shape could shrink, and someone might say it's damaging: "I've got worse at it". No, they've understood better what that really is, so their self-perception is more accurate now. [Local authority F, Visit 1, Interview 1]

Fiona perceives a rupture or schiz between what people believe about themselves ("I'm really imaginative") and the "truth" ("I thought I was more, I thought I was stronger"). Self-perception can be faulty, but the spiderweb reveals who you really are. It is a powerful and dangerous tool ("someone might say it's damaging"). The risk is that the web might show you to be lesser and weaker than you thought. The spiderweb has the power to produce incorporeal transformation (Deleuze and Guattari 1988/2017): it can grow you and shrink you repeatedly, just like Alice. And like the *giftie* (gift) in Burns' poem *To a Louse*, the spiderweb has the power to free you from the "foolish notions" you may hold, and which limit your creative potential. The spiderweb/*giftie* is destructive as well as constructive: what it reveals may well be an unpleasant surprise that shatters your self-image and your beliefs.

This desiring-production of creativity as something that "grows" people was critiqued by James at Burgh High. This emerged from James' reflections on the creativity conference he had attended the previous day:

> James (English teacher): When we talk about creativity… we're talking about growth and growing people— people becoming, *being grown.* When they actually ask people what's positive about "growing people", nobody had any idea what they meant about "it's important for people to grow." And what was usually meant was they either did more work, or they participated in more things, therefore they were growing.

Here James identifies several problems with the way creativity is spoken about. One problem concerns the empty mantras or sedative discourses (Guattari 2000) which resonate throughout the Territory of education. These are codes from the State education desiring-machine, conveying the "correct" beliefs which teachers should espouse. They are not intended to be challenged: when James asked other conference participants why it was important to grow people, they had no answer. He suggests this is because it is a hollow phrase which they were merely repeating but had never interrogated. Another issue concerns what, precisely, is deemed to constitute growth. According to James, this is not usually anything profound, but just "more work" or "participating in things". To James, this is mere busyness rather than meaningful development; it does not produce real growth, although people believe that it does.

This notion of people and ideas not actually being what they are perceived to be is developed in the following vignette, which plays on the idea of smoothing and striating space and takes us to a place where even the sky is narrowed and constrained.

Vignette: Boxes and Horizons

The complex relationships between teachers' ensembles of enunciation, agency, socioeconomic factors, creativity, the "attainment gap" agenda and other policy imperatives all resonated throughout the interviews held at Glen Academy. I use the Glen teachers' phrases to analyse the creativity-assessment relationship as an interplay between containment ("boxes") and liberation ("horizon").

Horizons

In my first visit to Glen Academy, the headteacher provided a narrative about the school and its context. The school is located in a rural area in the north of Scotland, and many of the students' families are employed in the area's traditional industry, fishing. There is an expectation that the

young people will also work in this industry when they leave school. This has implications for attainment:

> Isabel (headteacher): This area is one of deprivation…. Young people think their lives are defined. The attainment and positive destination data is just "ok". [The students] just think, "That'll do. That's all I need. Because that's the kind of job that will do for me." We won't see a change in the jobs in a community like this. The "2030" stuff — how do they know what the jobs of the future will be? How can you know that?... To me, creativity is more about getting [young people] to think differently about what life is. What do I want my life to be? [Glen Academy Visit 1, Interview HT and DHT]

Applying the schizoanalytic diagram to the Glen data enables me to visualise this as a Territory where Flows of labour, industry, and wider economic and political change (the impact of Brexit on fishing, for instance) produce a situation where students regard education as an irrelevance (F→T→U). Students' potential is striated, as their lives have already been "defined" for them.

Isabel was sceptical about policy desiring-productions of creativity ("all this, the Wood Foundation, the Skills 4.0; it's all hype"). "The 2030 stuff" refers to the United Nations 2030 Agenda for Sustainable Development. As we shall see, this contrasts with the views of one of the Glen class teachers, Laura. Laura believes it is necessary to engage with the macroscopic policy imperatives regarding creativity. However, contrary to deficit constructions of teachers' beliefs as fixed and resistant to change (Pajares 1992), Laura's beliefs are not set, but are evolving and reassembling in a complex interplay of smoothing and striation.

An orientation to educational purposes was also evident in the conversational flows among the other members of the teaching faculty at Glen. In the focus group with the three class teachers (Dana, Laura and Peter), potential next steps for the research were discussed, reflecting the iterative or nomadic nature of the research design for this project. It was agreed that I would visit again and undertake classroom observations of the three teachers' Higher classes. Peter asked if I could also give a brief talk to his students about postgraduate study and careers in academia:

> Peter: It would be good if you could give a talk to my Higher class. Horizons can be a little narrow here. [Glen Academy Visit 2, Focus Group]

Here, there is a line of flight that could potentially lead to that which is new (the students encountering new career and study possibilities). Yet Glen is located within a Territory where

even the horizon is constrained and narrow. Both Peter and Dana framed their discussion of creativity and assessment in relation to socioeconomic and educational inequalities. The school's setting is crucial to its haecceity or "thisness". The school sits in the middle of a large housing estate which the teachers described as deprived. Dana explained that most of the students live in the estate, as she herself does:

> All this talk about a "creative curriculum" — how is that going to help our kids? We've got mad kids bouncing off the walls here […] I live two streets away from the school. There is a lot of poverty. You said you walked [to the school], so you'll have seen the unkempt gardens. [Glen Academy Visit 2, Focus Group]

Although Dana's phrase "mad kids bouncing off the walls" might seem problematic, this was characteristic of her dry humour. She did not regard herself as a "middle-class professional" socially removed from the lived experiences of her students and their families (Mills 2008). Rather, she lives among them, in a place where gardens are not carefully tended but are "unkempt" and overgrown. Just as the gardens are out of control, the children who have been grown in this Territory are similarly unconstrained. Walls do not restrain them: they bounce off them. They are not boxed in, yet they cannot be truly free as their potential ("horizon") is constrained. Conventional approaches to education are difficult enough in this Territory; Dana considers a "creative curriculum" to be an impossibility.

The teachers at Burgh High, set within a much more affluent context, also identified cultural, social and economic Flows as producing constraint and restriction in terms of students' beliefs and attitudes (F→T→U). However, the affects of this were very different:

> Kirsty (English and Business Studies): It's the fear of their own opinion that [the students] have, they're scared of having the wrong opinion. And it doesn't matter, it's your opinion, you just need to tell me about it, and to justify that opinion....
>
> Catriona (Biology teacher): And so much of that is cultural. Doing PSHE [personal, social, health and economic education]… we as a class ended up going a little bit sideways. We ended up chatting about how they feel they have to be perfect all the time. And it's pressure they're putting on each other, and it's not just in schools. I think we need to be thinking bigger than this, if we need to have them being resilient and going forth into the world
>
> Kirsty: …. But they're desperate to all have the same…
>
> Lyndsey (Physics teacher): [It's a] conformist thing...

> Catriona: Yeah, but anyone who has a different opinion is ridiculed, lambasted, because they've got a slightly different opinion. They're scared of controversy.
>
> Kirsty: And to a degree I completely understand it, [but] at the same time it's hugely frustrating. [Burgh High, Visit 2, Focus group 1]

The Burgh students' lives are striated, as is also the case for the Glen students, but for very different reasons. The Burgh students' families are affluent and have high expectations. They desire academic success, in the form of "good" grades in the "right" subjects which will act as codes that unlock access to elite universities (jagodzinski 2013), and thus to highly-paid careers.

These desires place the students under pressure, which acts as a constraint on creativity, but also constrains the students themselves. The Burgh teachers described students' desire for conformity as inhibiting them from forming and expressing opinions. The teachers identified this as a Flow emanating from the wider cultural and social milieu (F→U→Φ→T). The desire to be perfect is enforced through a fear of being "ridiculed, lambasted" for even a mild variance. Thus, the students are self-controlling, as is the aim in control society. Kirsty attempted to create a smooth space in which to explore these issues by going "a little bit sideways" off the striated paths. "A little bit" sideways suggests there is very limited space for manoeuvre.

Boxes

In the online interview with Laura at Glen Academy, I noticed that she used the phrases "ticked", "ticked off" and "tick box" repeatedly. For example, she discussed how the projects which formed part of the Media course "ticked the boxes" in terms of creativity and critical thinking. She regards these notions as related, and perhaps even interchangeable:

> Just linking what I've read in the OECD, it ticks a lot of the boxes of the critical thinking and the creativity, because [the students] have to come up with a project themselves. Now, I can be open or specific about what the brief is, but they can negotiate that with me. So it's then giving something that's quite open for them to think through on their own, decide their own limits, and then they have to work through it, take a lot of notes as they go in, and then overcome obstacles, because [in the project brief] they've got a zero budget.

"Ticking the boxes" might suggest that Laura holds a view of creativity as just another item to be crossed off a lengthy list of things teachers "must" do. However, she always linked the words "ticking" and "boxes" to "open", for example in the description of the negotiations she has with

her students. For Laura, learning is something that can be opened up; it is a box that can be prised open.

Laura's reference to the OECD struck a troubling note. I had agreed to share information about the CERI research, *Fostering Creativity* (OECD 2108), and current developments with the PISA creativity test with Laura and her colleagues, since they were unfamiliar with the policy context. It appeared that the OECD's desiring-productions were beginning to code Laura's beliefs about creativity:

> I think it's evolved, see since the first time we spoke. In my head I was thinking about [creativity] more from a teaching perspective, you know? And how I manage to draw as many learners in as possible, and being flexible… trying to as bring as much of "them doing" as possible… However, since seeing the OECD stuff and just thinking about it, I think more and more now it's trying to prepare pupils for thinking outside the box. Flexibility, resilience, dealing with problems that we don't even really know yet, when the kids we are educating now will be out in the world combating various different issues. So I think now that's my understanding...

Whereas previously Laura constructed creativity in terms of her own teaching practices, she now understands it in a way that is in keeping with the "21st century skills" macroscopic policy desires.

Laura has worked in further education as well as in schools, and she drew on this experience when working with the less-engaged students. Motivation, engagement, behavioural issues and underachievement were recurring themes in all of the conversations with the Glen Academy teachers. In the following extract, Laura tells a story about a student on the Media Studies course. This student decided to submit a podcast, rather than an animation, for the externally assessed part of the course:

> ...she also had a little animation that she'd made that ticked all the boxes better, because she could then have talked about visual codes, all the kind of boxes that the SQA assignment wants to be ticked, you know? Whereas podcast… I did make her aware, look, you know, you might drop down a little bit [in your grade] because you're not able to tick so many boxes…. [the animation] wouldn't have been so personally meaningful, but you know, she would have ticked all the boxes.

This is a theme which had a powerful resonance at Glen: the tension between creative work that is personally meaningful to the student, and the troubled relationship that such work has with summative assessment. Laura believed that the student would have achieved a higher grade

had she submitted an animation; however, this would not have had the same personal meaning for the student.

Also connected to Laura's construction of ticking off/openness is a notion of creativity as something that dies out as the student progresses through the curricular levels:

> [for the media assessment] you can do it in a group but you still have to tick all the boxes individually, you know? So, lower down in the curriculum you can be much more creative about these types of project because there's not an exam to be met… There's not an end qualification to be ticked-off. So it gets more restrictive the further up you go.

A rhizomatic knot appears in Laura's ideas about the relationship between creative work and summative assessment. Her use of ticked off and list suggests an instrumental or narrow implementation of techniques developed by others (Priestley and Philippou 2018), contrasting with a "Deleuzian horizon" (Svirsky 2010, p.5) in which a nomadic, itinerant pedagogy becomes possible.

Similarly, Fiona, local authority creativity officer, described assessment as "ticking off". But she also associated this with a range of other ideas about teaching and learning:

> I suppose I always had a gut feeling about what wasn't right and which direction was right, that met more of the needs about active learning…. [Teachers might use] a textbook or a sheet that has content you have to cover, 'cos that's what's required of you, but how do you make that *live*? And that's what creative teaching can and should be, because you're going to still do the things, if you need to tick things, whether they're…for an exam, or they're just Es and Os or whatever it is. [Local authority F, interview 1]

To Fiona, active learning and creative teaching are about life and difference, enabling teachers to galvanise dull, moribund content. Creative teaching, for Fiona, is about finding ways to manage the oppressive requirements of the system and its necessary evils ("if you need to tick things"). "Just Es and Os" refers to Experiences and Outcomes. Fiona suggests that these are not actually important, but nevertheless they cannot simply be ignored. They can however be dealt with by "ticking [them] off", quickly dismissing them with minimal effort. This is a form of resistance, albeit not an overly positive one. Applying the schizoanalytic map, the "Es and Os", the animations and podcasts produced for assessment in the Media course, and the OECD materials can be considered Phyla (U→Φ→T). The next plateau considers another phylum, in the form of the creativity wheel (fig.3).

Love and Hate, or: Picasso meets the SQA

This section brings together some rhizomatic strands regarding the assessment of creative work and what, exactly, is being assessed. The contrasting reactions of two teachers, Emily and Dana, to a provocation, provides a means of understanding the policy desiring-production of creativity and its assessment. The teachers' reactions were elicited at separate research events at Parkview and Glen, respectively. I wanted to share an example of an assessment model which aims to foster creativity, and used the creativity wheel developed by Lucas et al. (fig.3). The purpose was to generate views on whether the creativity wheel had potential as an assessment resource. The wheel has many variations, but in all iterations, it is underpinned by a conceptualisation of creativity as five "habits of mind". It certainly succeeded in provoking responses:

> Emily (art and design teacher): I love it! [Parkview Secondary, Visit 2, Interview 2]
>
> Dana (English teacher): Sorry, it made me throw up a bit in my mouth… I've seen something like it before back in [her home country]…It's a superficial aptitude test. It's not about creativity. It's about problem-solving. [Glen Academy, Visit 2, Focus group 1]

Dana critiqued the conflation of creativity with problem-solving, which she regarded as the conceptual basis of the creativity wheel. She also connected this to psychometric approaches to assessment. The wheel made sense to the art and design teacher, however:

> Emily: [Looking at the creativity wheel]: Craft, refine, develop, modify, improve, reflect and document; yeah. So that, it's that tenacity, and "I keep working it, and working it, and working it." [Parkview Secondary, Visit 2, Interview 2]

Emily's use of repetition echoes the nature of the artistic and design process itself, which involves working and reworking until difference is achieved and a way out is found. When discussing what the focus of assessment should be, Emily considered the difference between documenting students' creative processes and assessments *of* creativity which construct creativity as potential:

> I'm not measuring their creative potential, no. That's not what I'm measuring as an art teacher. The mantra is, if it's not on the sheet, then it's not assessable…. You can have Picasso sitting in the room; if he's not filled three sheets of work, he's not gonna pass! They can do all the chat they like, but SQA need stuff on sheets, and so... the problem is, that is our driver. [Parkview Secondary, Visit 2, Interview 2]

I was amused by the idea of Picasso failing Higher Art and Design. Emily again uses metaphors of being driven, engine-like, by an external force, in this case by the SQA and by the assessment requirements for the Higher. She also uses the phrase mantra, which echoes the notion of "empty mantras" (Humes 2013) in education policy. Emily's views about teaching and learning being driven by the assessment desiring-machine is a *ritournelle* that I also heard at Burgh High, and this is discussed next.

Discomfort

The Burgh High group discussed what the focus of assessment is, or should be: person, process, product, or all of these. In the following extract, the teachers consider the implications of exam-led approaches, and the different methods they had used to try and provoke creative responses from students:

> Kirsty: [If] the end product is a story, they just want to jump straight to the end product. [T]hat's why I hate success criteria and learning intentions, because all it does is it specifies one end criteria, and that's all they think is important then. So we give, you know, we've effectively set up:
> [Kirsty as teacher] "This is the answer that we're going to get you to".
> [Kirsty as student] "So I will ignore everything until you tell me what the answer is, and then that's the thing I'll focus on because that's the thing you've told me will be successful." [Burgh High, Visit 2, Focus Group 1]

Here, Kirsty acts out a scenario in which she plays a teacher implementing an arboreal approach. The student responds to this by ignoring everything except "the answer" which will result in a successful outcome (a pass, a high grade, a ticking-off of learning outcomes). This end-point approach involves handing answers to students ("we give, you know, we've effectively set up"); it is a predetermined *frayage* (Deleuze and Guattari 1994). This results in a narrowing of learning, and the affect this has on students is that they too become instrumental, undergoing an incorporeal transformation into bureaucratic "worker-schoolkids" (Deleuze 1995). However, as the discussion continued, the power dynamics in the teacher-student relationship appeared to shift:

> Kirsty: [Students] have such fixed expectations of what we are going to give them, and prepare for them, and help them on their way that, yeah, I think there are times where… not *pandering* to them, because we are trying to do our best by them and I think that's doing us a disservice, but I don't know that we're always going the right way about it.
>
> Catriona: And actually [being] ready for the real world...

> Kirsty: It's always working towards being successful instead of letting them fail and make mistakes, and letting them be upset about it and learning from that process. They're constantly feeding on the success rather than failure.
>
> Lyndsey: It's over-praising. If you praise for everything including mediocrity, then they expect everything they do to be perfect and great.
>
> James: Maybe that's because [when] we set up assessment, we don't build in failure. [Burgh High, Visit 2, Focus Group 1]

Kirsty then discussed her attempts to introduce alternative methods, which had proven to be unpopular:

> Kirsty: [The students] were horrified because I gave them a matching exercise to do, with words and 18 definitions, of which nine were wrong, and they had to match up with the correct definitions. And some of them were blatantly wrong, and some of them were a little bit wrong, and [the students] were horribly frustrated by it. But some of them….just wanted to know what the right answer was, so they just put up their hand and said "Is the answer this? Is the answer this?" "Well… I want you to tell me…" I wanted to see if they could work out, rather than me just telling them… "this is the answer".

Kirsty also raised a point about what is included in course syllabi, and the relationship this has to assessment:

> Kirsty: One of the things that has become my pet peeve in education, which I've noticed more and more and more… is when a child asks "why are we learning this?" and the answer is "to pass an exam". Erm, and this has become something that just really angers me now, because if the only reason you're learning it is to pass an exam, why is it important?... I know the vast majority of that course [Business] is included because it's easy to assess, not because it's interesting.

For Kirsty, the notion of "easy to assess" has a deadening impact on children's education, as it results in knowledge being devalued. She associates it with a failure to engage with the purposes of education, and questions of value and meaning. It produces an affect of boredom: basic content that does not stimulate interest. As she discussed this, her feelings grew in intensity and the argument gathered momentum, as suggested by the repetition and emphasis ("more and more and more"), She moves from the mildly irritated "peeve" to the much stronger "really anger[ed]" as she builds up to a crescendo: all that matters is passing the exam, and that is what is dictating what is being taught and learnt.

The Burgh group then considered whether it is possible or desirable to separate assessment of creative work from assessment of the individual:

> James: So something is created, and there is that product and we then assess that… we engender this notion of: you will produce this, and we will assess this, and that will give you your sense of success or failure... Rather than: how do we assess creativity and process and the person? Are we assessing the person in an English class or a Business [or] Physics class? It's difficult. It is quite difficult
>
> Kirsty: I think that's why I sometimes get them to write a plan for a thing, but I never then get them to write the thing…. I want to see what you're thinking and where you'll go… I think it's about balancing all these different ways of doing that. And like I say that one where I wouldn't give them an end goal, I would only do that once in a blue moon, but it's about mixing it up and not letting them ever feel *comfy.*

Discomfort is, for Kirsty, where new learning and thought can occur. Her pedagogical strategy of "no end goal" informed one of the seven assessment principles, map/trace, which is advocated in chapter seven.

However, the idea of moving towards problems rather than answers, and a focus on process not product, was problematised by James. He described a drama performance at a creativity conference, which I had also attended. A group of students had staged a performance which used only one prop, an empty box:

> James: [The drama performance] was about process, and that there was no right answer. I can't imagine talking to [Lyndsey, Physics teacher] and saying "there is no right answer", and just the world exploding. "There *IS* a right answer! [laughter] There's a thing at the end here that's based on the knowledge we have, so there *IS* an end."

He imagines Lyndsey, who was present in the focus group, reacting furiously ("the world exploding") to the suggestion that there was no right answer (Lyndsey herself did not say this). This points to fundamental differences in the teaching and assessment of creative work in the arts and in the sciences. James then wondered whether the notion that "there is no answer" is in fact helpful or not:

> …. and some of the things that were worrying [at the conference] yesterday were the amount of times they used the word "organic", or "they'll find out", or "something might happen." All the way through I was thinking "Where's the knowledge? Where's the knowledge?" You know, there must be knowledge here. When it comes to content there's that marriage between content, knowledge and how we get [students] to engage with that in a creative, collaborative way. 'Cos there was a performance, and at the end

> of it someone just left an empty box. [Someone asked] “who knows what’s going to happen at the end of that?” I said: “A performance is going to happen at the end of that.”

The empty box is a paradox: it leaves the way open for a new manifestation of creativity to occur, yet James regards the idea of learning as something that will just magically appear out of nowhere as problematic (the vague “they’ll find out!/”something might happen”). He then reflected on the nature of knowledge:

> If the kids had all come into the room and [just] run around, we’d have gone: “what was that?” But they came in and they’d been facilitated by drama teachers, and they had cues... and they had dialogue and they had props. And everybody in the audience recognised it as a performance. So it was knowledge, it wasn’t just made up.... there’s knowledge everywhere in what they’re doing. But the general tone of the conversations [at the conference] seemed to be “there is no answer”.

Here, we can connect several ideas that inform the principles of assessment in a nomadic creative pedagogy: the creative process is not a free-for-all (“what was that?”) but is specific and situated. The guide is necessary (“they’d been facilitated by drama teachers”); and there were domain-specific skills and knowledge in evidence (cues, a prop, characters, a script, a theme).

Ticked off

Sadness and failure were mentioned several times by the Burgh High group, which may have been a response to the overview I had provided about different approaches to assessing creativity. This referenced Lubart’s (2019) work on mapping individuals’ creative processes in different domains, which found that negative emotions may be important for specific types of creativity (fig.21):

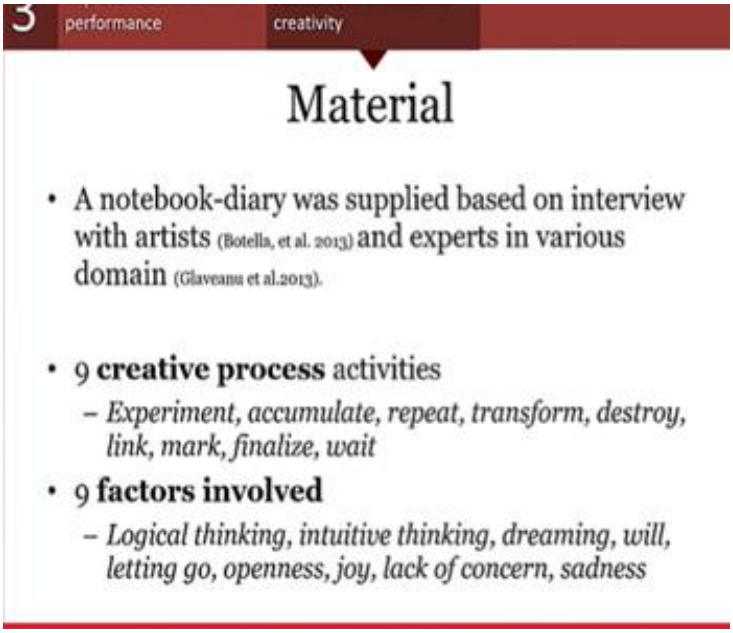

Figure 21: Provocation: Lubart presentation BERA 2019

> Kirsty: We don't want [students] to ever fail, [but] the inclusion of sadness and failure in that thing [fig.21] is good. [Burgh High, Visit 2, Focus Group 1]

Kirsty had previously mentioned the need to avoid students being "comfy". Mention of discomfort connects the analysis to another aspect of "ticked off", as discussed above. Ticked off can also refer to irritation. Fiona seemed annoyed by teachers who, in her view, do not truly desire creativity. This was highlighted in her account of delivering training sessions on creativity to teachers:

> [The purpose of the sessions] is to explore: what *is* creativity? What is it they think it is? Do you *have* a thought?... So it's trying open up, and of course people know once they think about that, but they've not confronted themselves with those basic questions. So starting to, initially [think about] what *is* the definition? Your definition that you've come with, what are your *fears* about that? Because we've all had school *done* to us, joyously or not. [Local authority F, Interview 1]

"Do you *have* a thought?" has echoes of the irritations I had observed during a conference on creativity in Scottish education. The participants had been split into groups and asked to discuss the key barriers to fostering a creative curriculum. Fiona had participated in this conference as well, and she was part of the group who had commented that the main barrier was "teachers not understanding what creativity skills are". I recalled this being delivered in an exasperated tone, and it continued to resonate with me after the conference.

In the one-to-one interview with Fiona, I asked whether she agreed that teachers lacked knowledge about creativity. Her response was complex. Having expressed the view that teachers "step" in and "crush" creativity, Fiona qualified this by stating that teachers were not really to blame for this lack of knowledge, and then reflected on power and self-awareness:

> So that power sits in every teacher's hand, and if they don't have an awareness of their own issues, problems, confusions, misunderstandings and excitements about all subjects that they are obliged to teach, then how can they begin to open it up and make it the best it can be for them with their children today, in Scotland, in their classrooms? [Local authority F, Interview 1]

Fiona's construction of creativity involves an interplay of desire and control; of Dionysus-Apollo. Although she provided a more nuanced account of teachers and creativity than was expressed at the policy conference, she also reiterated the view that teachers lack knowledge:

> There's so many ways to do it [i.e. creativity], and I think that's not always understood, certainly by class teachers. Not all of them — some…. People *think* they know, but they're not in the place in their thinking that *we* are as a team.

The emphasis on "think" implies that teachers are mistaken in their beliefs. "We" presumably refers to herself, her colleagues and the wider network of local authority officers whose remit includes creativity. However, while Fiona clearly regards some teachers and headteachers as barriers to creativity, her account is more complex than the earlier quote about teachers crushing creativity underfoot might suggest.

Heresy

In this extract, Fiona described what she considers to be another damaging belief, namely, not perceiving oneself to be creative:

> [Creativity] fluctuates depending on mood and external factors, what's going on around them…. All children have it, it's basically divergent thinking, it's just one of the skills. So if all children have it, then all of us in this room and all of us in the planet have it. Nobody can go, "I'm not creative". Some people suggest that about themselves, teachers included. That's problematic because your beliefs are then stopping you. Actually, you do have it, but perhaps it's been driven out of you through certain processes. And you need to rekindle and regrow it and believe that you have it, otherwise how are you going to cultivate it in your pupils, if you're a leader of learning? So the assessment tool can be for the teacher to confront their own beliefs as well, about themself. [Local authority F, Interview 1]

Fiona's construction of creativity includes the idea that creativity is flux, but at the same time, it is also a set of skills. Further, it is also an essence that exists within all humans, and which can be grown. Nurturing it requires the involvement of both teachers and students, but teachers must show leadership. Creativity can be crushed by "certain processes" and blocked by false beliefs. The insistent desiring-productions of the creativity war-machine can be identified in this construction (everyone is creative, schools oppress creativity, you need to believe in creativity), along with the official State codes (Education Scotland and Skills Development Scotland definitions of creativity) and the macroscopic-level policy drives (creativity is a skill). When Fiona discusses creativity as a skill, she regards it as largely synonymous with divergent thinking — the ability to produce unconventional responses to a prompt. Fiona is certain that everyone possesses the capacity for creativity, even if we fail to acknowledge it due to our own lack of faith. If, however we accept the truth of this doctrine, then utterances to the contrary become impossible ("Nobody can go, 'I'm not creative'"). It is literally not possible to say such a thing. This is a creativity war-machine orthodoxy: evidence of faith through the expression of the correct doctrine.

I now discuss an anonymised account of an incident at a creativity conference in which I uttered the heretical phrase "I'm not creative".

Vignette: Spaghetti and Sellotape

In the summer of 2020, mid-pandemic, I participated in an online creativity conference. It featured a logo that bears similarities to a rhizome as well as to a tangled knot. It also reminded me of spaghetti or string. It was explained that the logo represented the dynamic process of creativity, the stresses and the chaos, which are all part of being creatively "brave". In a *ritournelle,* it brought to my mind the group tasks I had previously encountered at similar events.

For example, I attended an Education Scotland conference where participants were asked to take part in a group exercise. As soon as the organisers appeared with sellotape and scissors, I knew what this was going to involve. I had previously encountered the spaghetti, marshmallow, string and sellotape challenge at a training session on creative thinking for doctoral researchers; there had also been a ball of string challenge at a national conference on creativity in education, in which everyone in the room had to move around and cross over their sections of the string. The purpose was to make a point about entanglement.

The Education Scotland conference task was described as a STEM challenge. Participants were given specific rules about the structure they were to create (fig.22).

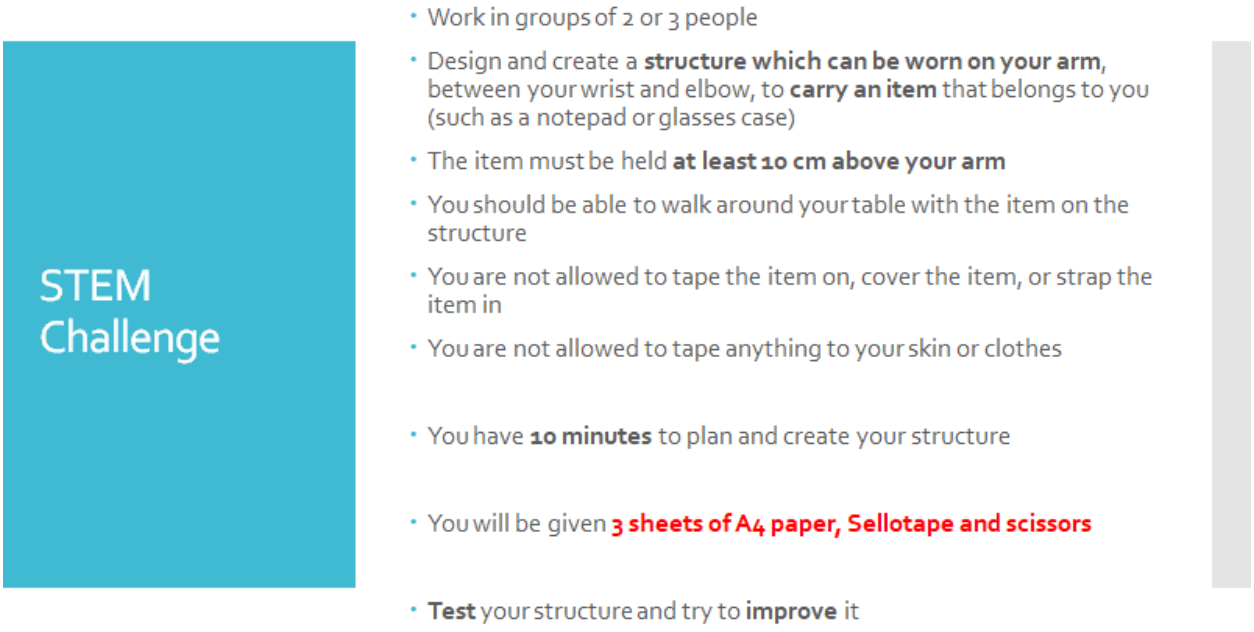

Figure 22: Education Scotland event STEM challenge[56].

Since I was feeling somewhat cynical about the activity, I let the more enthusiastic members of the group go ahead with their designs, stating that I was happy to contribute by cutting the sellotape. Afterwards, examples of the sorts of structures that had previously been made as part of the challenge were shown:

[56] Available: https://creativityportal.org.uk/files/5de50318e3f29-Creativity%20in%20STEM%20at%20Ratho%20Primary%20School%20-%20Amy%20Dixon.pptx [Accessed: 3 July 2021]

Figure 23: STEM Challenge outcomes[57]

The presenter commented that most children are highly engaged in tasks such as this, but that some chose not to actively participate, and that it wasn't good enough to "just be the sellotape cutter", as that wasn't being creative. This made the people at my table laugh, since I had elected to be "the sellotape cutter".

"Well, that means I'm not creative, then!" I said, (half) jokingly.

"Oh, don't say that! Never say that you're not creative!" was the horrified response from one of the women at the table.

The artefacts created by each group closely resembled the examples given in the slide. Afterwards, I kept thinking about this task, and others like it. To me, fashioning disposable structures out of paper, spaghetti, string and Sellotape is primarily a group task suitable for getting participants talking and interacting. It is about a construction of creativity as something that is to be performed in a certain way, meeting specific predetermined requirements, and aims to make points about teamwork and collaboration. It appeared to result in the creation of

[57] Available: https://creativityportal.org.uk/files/5de50318e3f29-Creativity%20in%20STEM%20at%20Ratho%20Primary%20School%20-%20Amy%20Dixon.pptx [Accessed:3 July 2021]

artefacts that were all slight variations on a limited theme. However, it could also be argued that this challenge and similar activities are instances of the interplay between difference and repetition, since the process of production necessarily involves repetition and the role of the mimetic, with the purpose being to then move beyond, or across (rhizomatically), to somewhere different.

The critique I am making here is primarily aimed at the affect produced in and through the participants, which is the insistence that such challenges are the correct or only way of thinking about creativity. This particular task is founded on a pro-social (Banaji et al. 2010) construction of creativity, which emphasises group work. Specifically, the challenge required the performance of expected behaviours, such as being seen to be actively contributing ideas and displaying enthusiasm for teamwork. The more significant analytical point is that it was not sufficient to go through the motions: participants had to desire the construction of creativity that was being promoted through the task and in the event more generally. My negative reaction to this insistence provoked a horrified, or perhaps just exasperated, reaction. The following vignette continues the themes of frustration, irritation and misunderstandings.

Vignette: Provoking and Provoked

Provocation is important, ontologically and methodologically, in research that is oriented to Deleuze and Guattari's philosophy. When we feel or sense something, this is a "provocateur" that generates a "difference in intensity" (Deleuze 1994, pp.222-3). In the context of an empirical enquiry, the researcher provokes and produces an affect. This is also crucial for creativity itself, since it is the energy produced through an encounter with that which is different that sparks off the imagination (Hickey-Moody 2013). However, this process affects the researcher, too. To illuminate the workings of my nomadic schizo-methodology in relation to data generation, this vignette dives into the details of a research event involving provocation, intensity, misunderstandings, and the imaginings that all of this made possible.

On my first visit to Glen Academy, I interviewed two members of the senior management team. Afterwards, the headteacher agreed to circulate my request for research volunteers. She asked me to provide a short "blurb" explaining who I was, what I hoped to do, and how the research would be used. The depute emailed this to class teachers, along with the information sheets and consent forms (or so I believed). After several email exchanges, the depute got in touch to

say that three teachers had agreed to take part, and suggested a date and time for the focus group.

The focus group was scheduled for 4pm. It was midwinter, and at that time of year in the north of Scotland the sun sets around 3:30pm, meaning that it was dark by the time I arrived at the school. It felt like the middle of the night. On arrival, I was escorted to a spartan meeting room where I was to set up the focus group. After a few minutes, the teachers came in. It soon emerged that they had further meetings to attend that evening after the focus group was over. A few yawns, and slumped body language from one participant in particular, suggested they were tired and perhaps not entirely happy to be there. I was under the impression that the depute had discussed the research with them and had shared the relevant documents. However, after introducing myself and asking a few initial questions, it transpired that the three teachers didn't know much about the research. Fortunately, I had brought along copies of the consent forms and information sheets. I handed these round, asked if there were questions, then launched into an overview, with slides, explaining the research and the context for the study. Having agreed that we would proceed, I then circulated the provocations.

This all took longer than planned, since there were questions and points raised by the teachers during the introductory presentation (and I had invited them to do so, so this is not a complaint). Suddenly, the teacher with the slumped body language interrupted me with: "You've been talking about all this stuff for *twenty minutes* now." This gave me a jolt. She was unhappy. It was taking too long; I was talking too much; she wanted to get on with it. I was surprised it had taken so long to get to the point of looking at the provocations, so her comments were a provocation to me, too. I was dealing with people who are used to managing their time effectively. The power dynamics had shifted: these were the professionals, and I was not one of them, as I have never taught in schools. I was now very conscious of my position as "a PhD student" with a perhaps overly deferential approach (I had uttered the phrase "I'm not the expert, you are"). I felt chagrined, but also a bit defensive. I was used to delivering undergraduate tutorials, which had a similar format to what I was doing in the focus group (introduce the topic, set out the expectations, provide the materials, answer any questions…). I felt it was important to spend time going over the information and consent forms. It hadn't felt like I had wasted time, but that was not how it came across to this participant.

I replied with “oh, ok, I’ll get on with it then, if you’re ok with that?” and passed around the print-outs of creativity assessment models to provoke discussion (fig.3). I did not tell the participants what I personally thought of these models, because I did not want to influence their responses. It quickly became apparent that the unhappy (or possibly just very tired) teacher really did not like these models. She thought I was advocating them, and that I was perhaps hoping to use them with her students. The thinking behind the models was totally confused, she said. What was my focus here — was I researching creative learning, creative teaching, or teaching for creativity? How was I operationalising this? Was I trying to measure students’ creative work, or creative capacities, or what? The implication was that my thinking was confused, too, because I appeared to be wanting to use these models.

The teacher then made a very robust criticism of the models. In response, I ended up being more open about my own opinion of these models than I would have preferred. I said that, in my view, attempting to assess creativity in the way the models constructed it was neither possible nor desirable. This could be criticised for a lack of professional neutrality, but it worked in terms of addressing a misconception about what I was there to do.

If the above makes it seem as if the focus group did not go well, this was not the case. Discussion flowed, and the seemingly unhappy teacher made a lot of incisive, and also very funny, points. I left with an agreement that I would come back to undertake further research. It was the teachers who decided what they thought would be most relevant. They suggested that I undertake observations of their Higher and Advanced Higher classes. This included the unhappy/tired teacher’s classes. A one-to-one interview with another teacher was agreed. The consent forms were signed. Although some tensions and misconceptions had arisen, nevertheless, I was left with plenty to ponder on the train journey back home, and I looked forward to visiting the school again. I never did go back, however: the next month, the pandemic lockdown began and fieldwork in schools was no longer possible.

An intensity had been generated out of the torpor of the night, the confusion about the research process, and the tired and questioning teacher’s exasperation. Out of a seeming irrelevance (the research and the creativity assessment wheels, both of which the teacher thought were ill-conceived) came a potential for relevance (Colebrook 2008), and it was the teachers who generated a way forward for the next stages of the research.

Desiring Control

This section considers what happens when students' creative work is assessed, and specifically, what happens when it is submitted for external summative assessment. The analysis is concerned with assessment as control, and the ways in which this is both exterior and interior. The concept that is used to explore this is the *schiz* or split (Deleuze and Guattari 1983). The extracts quoted here explore the ways in which the teaching profession is enmeshed within the workings of "the system", as some participants referred to it. The conceptual persona who haunts this plane is Janus, who faces in two directions at once, towards the strata of control but also outwards towards exits or lines of flight (Deleuze and Guattari 1988/2017). This duality is also discussed in relation to the rhizomatically knotted problem of students' work, which is about personal expression and growth, but is also judged and graded by others.

Marked up and down

The following excerpts from the discussions with the teachers at St Drostan's Academy, St Medan's High and Glen Academy share a rhizomatic connection, in that teachers discussed the tensions between creative work and the pressures arising from the attainment agenda:

> Matthew (headteacher, St Medan's High): How do [SQA] mark? I'd be interested to know their marking scheme. Because [music] composition is subjective, and SQA seem to struggle with consistency. I'd like to ask them, "how did you reach *that* decision?" [Joint focus group, St Drostan's Academy and St Medan's High]

Matthew's subject specialism was music; the other two teachers in this focus group also specialised in the expressive arts. They all held the view that the grades their students were receiving did not match their professional judgements about the quality of the work. Graham at Glen Academy had similar frustrations:

> Graham (depute head): One pupil was doing Advanced Higher English… He was staunch about what he wanted the folio to be. His interest was in manga, so that was what it was about. He didn't jump through the hoops. [But the] grade came back as a D [for] the dissertation. He was trying to be creative and it was marked down, because it wasn't Tennessee Williams or whatever. [Glen Academy, Visit 1, Interview 1]

A *ritournelle* (Deleuze and Guattari 1988/2017) resounds here, as the metaphor of instrumental approaches to assessment as "jumping through hoops" makes a return. Another line of thought is that of creativity as a personal journey, which involves the risk of an uncharted voyage as opposed to following a safer, conventional *frayage* (Deleuze and Guattari 1994). The

experience of the student who was “marked down” was particularly disappointing for the depute head, as he wanted to increase the uptake of Advanced Highers. The school only had five candidates for Advanced Highers in all subjects in the previous academic year. In a similar vein, Graham also mentioned a student who had submitted folio work for Higher Photography:

> Graham: She got As in the other two [Highers] but a B in Photography. It was because her creative work was defined very much by herself. The portfolio work was specific to herself, it was about her journey. And [the markers] didn’t like that.

Having listened to Graham’s criticism of the qualifications agency, the headteacher, Isabel, reflected that:

> Isabel: We *are* SQA. It’s practising teachers [who comprise marking panels]. We’re doing it to ourselves. It’s as if it’s a different mindset.
>
> Graham: Well, [SQA] are a business. The person above you is someone who just wants to get it done. They’re a business model, though they may be willing to change…

A key theme in Deleuze and Guattari’s work relates to why people desire their own oppression, something that is evident in the above extract. Graham suggests that a business model is incompatible with educational values. His view is that the SQA’s approach is hierarchical and instrumental (“the person above you just wants to get it done”) and lacks an orientation to meaning and worth. Isabel identifies an internal segmentation or splitting off (Deleuze and Guattari 1983), whereby teachers’ principles and values are severed when they take up a role within the territory of the qualifications authority.

At Parkview Secondary, Emily reflected on a disconnection between marking for Higher and for Advanced Higher. To Emily, the issues stemmed from the time-pressured, high-speed nature of the Higher process in general, but there were also problems that she thought were specific to Art and Design:

> It’s traditional — they like painting, they like drawing, they like painterly work. I had a student who did a piece of work for his “expressive” at Higher… His final piece was a piece of sculpture with layers of Perspex, and I really liked it, but I knew he would have problems with it… And he got an A overall, but he got a B for that section. They didn’t reward that. I put the same student [forward] for Advanced Higher and he actually used a few of the pieces from his Higher, which you’re allowed to do… and the Advanced Higher marking team gave him a 100 out of 100. [Parkview Secondary, Visit 2, Interview 2]

In Emily's opinion, the Higher marking team had an overly conventional and conservative view of art, something that found an echo in the comments from Matthew at St Medan's High in relation to music composition and Graham at Glen Academy's views on Higher Photography and Advanced Higher English. In all cases it was the folio work that was identified as the source of the tensions.

Claire, depute head at St Drostan's Academy, reflected on the changes from the previous, pre-Curriculum for Excellence examination system, focusing on specific issues in relation to music composition:

> Previously, in Standard grade [the predecessor to National qualifications], there was flexibility and teacher direction…. SQA had a bank of graded materials [for teachers to consult]. So pupils produced [music] compositions of similar description and quality. Now grades are coming back, *not* what would be expected. Is there some sort of baseline, or...? 'Cos we're scunnered. [Joint focus group St Drostan's Academy and St Medan's High]

The word "scunnered" is Scots for feeling fed up, defeated, or having a strong aversion to something, and it featured in several of the interviews. For example, Kirsty at Burgh High used this word in the context the discussion about teacher subjectivity and a sense of "disappearing".

Although Claire lamented the loss of flexibility and teacher agency, at the same time she also desired more direction and certainty. Here is an instance of the strange desire for one's own oppression (Deleuze and Guattari 1983), and how the education desiring-machine operates to reconcile difference and produce coherence (Thompson et al. 2021). Unpredictability and too much variance is undesirable in terms of the school's statistical performance. At the same time, however there is a yearning for freedom. This is what I refer to as the dance of thralldom and liberty, or the Dionysus-Apollo hybrid. As a depute head, greater striation would fulfil Claire's managerial desires — consistency is achieved; students obtain high grades; the school is perceived as successful in terms of its statistics and inspection reports; parents have a positive opinion of the school; the school roll does not decline. However, there is a *schiz* and an impossible dilemma: as a music teacher, she desires greater freedom for class teachers so that they can support students to take creative risks; yet this is contrary to the need for greater control that, in her role as depute head, she also desires.

This seemingly unresolvable paradox leads us to the "land of the dead": discussions in which creativity and the school system are seen as binary opposites − that which is living, youthful and vibrant versus that which is old and moribund.

Vignette: Violent delights and violent ends

> [T]here is something amorous - but also something fatal - about all education (Deleuze 1994, p.23).

In discussing how to make assessment in relation to creativity more meaningful, Fiona connected notions of assessment to the insistent desiring-productions emanating from the creativity war-machine:

> How can we build that [assessment] in a systematic way right through all our formative and summative assessment from early years through? 'Cos then we will maintain, and not allow the same as that research that Ken Robinson refers to. Then we won't just beat the creativity out of them that they start with at 93% and drop right down within moments of being educated. We will maintain it, and in fact arguably we would grow it. [Local authority F, Interview 1]

The statement that creativity is "beaten out" of children within "moments" of being educated was one of the more striking comments made in the interviews. Once more, violent metaphors of attack, with schools as a territory of death and decay that needs to be reanimated by creativity, are strongly evident. I could not locate the source of the claim about the "93% creativity" that children start with and which then "drops right down". However, it resonates with the depiction of creativity in the animated version of Robinson's *Changing education paradigms* talk (RSA 2010) (see fig.17). This cites an unsourced longitudinal study in which children's "genius" was found to be "at 98%" on entering formal education. Robinson states that this percentage "mostly deteriorates" as children grow older and progress through the various stages of school education (ibid.).

There was a rhizomatic connection between Fiona's views and those expressed by David, an education consultant who took part in the local authority-facilitated focus groups:

> David: [The problem with] someone's eulogy on what creativity is, as soon as you define it you start to fix it. People are using creativity in different ways — "big C", "little c". Everybody is creative [but] that's why people think they're not creative. There's also "baby c" creativity, an innate creativity children born with that we systematically beat out of them through education. If you define it, you kill it. [Local authority E, focus group 2]

Here is a rather sinister theme of killing and of children having their inherent creative essences thrashed out of them through education. David seemed to be suggesting that people fail to believe they are creative because their understanding of creativity doesn't fit with others' definitions. I suspected that "someone's eulogy on creativity" was aimed at me, or academics in general. David continued:

> "Creative learning" insults people. They're embracing it as a thing without understanding what it is. And older teachers, who taught the previous 3-15 [curriculum] are saying "that's just how we do our job". But they're regulating and assessing [creativity] out of existence.

David critiques teachers who unthinkingly embrace policy language. There is an echo of the commonly-expressed notion that teachers, and older teachers in particular, are resistant to change (Humes 2013) owing to their supposedly rigid and "uncreative" ways of thinking.

Beyond "Big" and "little"

A contrasting flow with regards to what might, or might not, be patronising was expressed by Emily at Parkview Secondary. I asked Emily what she thought of the "Big C" and "little c" theory of creativity. She was not familiar with it:

> Emily: What do they mean by "little" creativity?
>
> Barbara: They mean not everyone can be world-changing, genius-level creative. It's sometimes called everyday creativity. It's meant to be democratic.
>
> Emily: That's so patronising
>
> Barbara: It's meant to be encompassing.… It's assumed to be a good thing.
>
> Emily: I've not heard that before. I do find that a bit troubling. I think [expressive arts] is more democratic... [*trails off*] Maybe maths find it more difficult… People say to me, "do you have to be good at art to do Art?" and I say "absolutely not"... You might just enjoy what you're doing, there are different things that you're going to be experiencing, there's a scale, yes some people are phenomenally creative, but people are creative in different ways as well. [Parkview Secondary, Visit 2, Interview 2]

Emily's construction of creativity connects ideas about democracy, enjoyment, and different ways in which it is possible to be creative. She regards creative ability as a scale, rather than something which positions people as only Big or little.

The Land of the Dead

Some of the conversations featured ideas about space, pausing and "death" as necessary aspects of creative processes. The following moments from the research evoke Deleuze and Guattari's argument about the importance of creative solitude, silence and reflection (Pope 2005, pp.55-56).

Although Charlie, music teacher at Parkview, did not participate in an interview, he shared a model he had developed for supporting and assessing students' compositions [Pers. Comm., Charlie, Parkview Secondary]. As part of a professional enquiry project, he had written an e-book and created a website about music composition. I cannot quote from it directly or use images of the model, as this could potentially identify Charlie, the school, and the other teachers who I spoke to. Instead, I paraphrase while attempting to maintain the spirit of Charlie's writing.

In the e-book, Charlie discusses how space and time are essential for composition. Students need room, and quietness, to experiment with ideas. This should not be dismissed as "wasted time", although he acknowledges that it might be perceived as such in the context of what he describes as the pressurised deadlines that accompany the qualifications process. Rather, space and quietness should be seen as key requirements for students' development as composers (ibid.).

This view was echoed by Peter in the focus group at Glen Academy:

> Peter (maths teacher): To be meaningful, you need some dead time. [Glen Academy, Visit 2, Focus Group 1]

Dead time suggests a quiet, still space away from the loud, constantly engaged world with its continual demands for communication (Munday 2014). As will be recalled, Fiona also regarded pause as necessary for creative reflection, but she also considers the curriculum, content and many approaches to assessment as "dead". For her, creativity lies in making inert material come to life: an image of the teacher as Dr Frankenstein.

This depiction of education as dead is reminiscent of the banking theory of education, which derives from radical education theory and the work of Freire (1996) in particular. In this perspective, the education system produces static knowledge, which is deposited by the teacher into the minds of students. Students are thus passive recipients of this dead information (ibid.).

Versions of this critique have informed the development of new curricular models (Priestley and Biesta 2013) and have been reinterpreted by creativity movement advocates, as will now be discussed in the following vignette.

Vignette: “Content, content, content!”

I participated in a conference on creativity which took place online during the pandemic. The organisers were education consultants based in Scotland. The participants were a mix of teachers, voluntary and public sector officers, other education consultants, parents, and academics. I had previously encountered the organisers at other events.

The participants were shown a presentation in which a graphic design student reflected on her experiences during lockdown, and concluded that all she and her fellow students had been left with was knowledge and community. She was referring to the support students had given each other during the lockdown, and to what they had learned during their course.

I was assigned to a breakout session. There were three others in the session: two teachers and an education consultant. We were invited to share thoughts on creativity and education, and given a prompt: “What struck you most from what you have heard so far this morning?”

The education consultant, who was based in England, said that creativity was “flexible”, whereas content was irrelevant, yet that dominates in “the Victorian classroom”. He then talked about “the treadmill of *content, content, content!*”, with very strong emphasis placed on the word “content”. His feelings about this were made clear by the repetition and the angry intensity with which “content” was uttered. The machine-like repetition of “content” summoned a *ritournelle* of the Victorian schools in Robinson’s TED talk (fig.17) with their factory assembly line approach.

I mentioned the student’s comment about how, during lockdown, she found that all she had was what she had learned from her course, and her community of fellow students. I said that this was an interesting contrast to the view that content is irrelevant. To me, a non-teacher, content is a synonym for knowledge, which to my mind represents something of substance and worth. I explained that my research topic was on creativity and assessment. The education consultant then mentioned that he was a former headteacher, and also mentioned his business, which sells training and resources on curriculum design and review, logistics and efficiency. He said

that “of course” knowledge was important, that he was not presenting creativity and content as a dichotomy. The rest of the group remained silent.

After the conference finished, I looked over my notes and thought to myself: he *did* say that content was irrelevant. If I hadn’t said anything, would he have qualified his position on this? I wondered whether the others would have agreed with him. I also considered whether content meant something different to him, as he clearly regarded it as oppressive. I realised I needed to go over the interview transcripts to see if this content/knowledge issue was present, and whether the insight that content has negative connotations in the education sector might help reveal aspects of the conversations that I had not previously noticed.

I was also intrigued by his references to the school system as “Victorian”. Victorian is clearly intended to equal bad, as discussed in chapter five. This helped me develop some new analytical questions: Is this a fair representation of today’s schools? Is it relevant to the Scottish education system? Are these ensembles of enunciation perhaps reflecting a past, foreign, or imaginary experience of education?

Another *ritournelle* was that the breakout incident reminded me of an uncomfortable moment at a different creativity and education-themed online conference. This one was also organised by consultants specialising in creativity in the context of school education. I took part in several workshops during this event. In the plenary, one of the organisers commented that there would be further conferences, that the “spark” would not die out, and urged participants to “bring your torch, not a pickaxe” to future events.

Although this could be interpreted in various ways, I believe the organiser intended “torch” to mean a guiding light that could be passed on to others, which is a positive act, whereas those who were wielding pickaxes were being negative and destructive. In the workshop discussions, I had questioned the way that creativity was being presented in the conference. For example, there were sessions on why teachers, curriculum and assessment are unnecessary and are hinderances to creativity. None of this was challenged by other participants. The pickaxe/torch exhortation seemed to be aimed at cynical academics such as myself.

While I sympathise with aspects of the creativity war-machine’s critique of school education, my observation from encounters with the movement is that dissenting views are not welcome. The

creativity war-machine has not been fully opened-up to critique, yet their influence is powerful and is gaining momentum at both macroscopic and *socius* levels. They are successful in securing public money for their services and products (discussed in chapter 5). As such, their practices require scrutiny, and reflecting this, my methodology brings both pickaxe *and* torch to the analysis.

Looking back over the transcripts and fieldnotes, I had indeed missed something about content/knowledge:

> James: It always comes back to the argument about content, and how do we get through the content, and that idea that if they don't know this then they can't do the next thing... We're so full of content, that what do we, how do we find the time and space to do anything other else than content?
>
> Kirsty: And that's us in schools, content-driven. That must be hellish for you in science. [Burgh High, Visit 2, Focus Group 1]

The difficulty is that this critique of content and an arboreal curriculum is often translated into a negative view of knowledge (Biesta and Priestley 2013). In the focus group at Glen Academy. Peter, maths teacher, specifically mentioned his dislike of this dichotomised understanding of knowledge versus creativity:

> I resent the depiction of "dead facts". [Glen Academy, Visit 2, Focus Group 1]

This theme was then taken up by Dana, one of the two English teachers in the group:

> It's hard to be creative if you have no background knowledge. If you can't structure a sentence.

The *ritournelle* here is that Dana always returns the conversation to the disadvantages faced by the students at Glen, situated as it is in the middle of a housing scheme which the teachers described as deprived. The estate envelops the school and is an insistent presence; it is essential to Glen's thisness or haecceity. Beyond the estate, and also forming a crucial part of the ecology of Glen, is the fishing industry. As Isabel remarked, the students think that their lives are already mapped out for them. This is cartography is a negative sense, rather than an ongoing mapping of a creative voyage. The following vignette continues this *ritournelle* of creativity and the future.

Vignette: Tsunamis and Terminators

A *ritournelle* of violence and despair returns in this vignette. However, in this instance, it leads to somewhere new and more hopeful. In the final image from Phoebe Anna Traquair's series, The Victory, Denys as Dionysus-Apollo is reborn into eternal life. This vignette eventually leads to the emergence of the teacher-student war-machine as a vehicle for transformation. This is explored through an analysis of the signifying chains (Deleuze and Guattari 1988/2017) of apocalyptic imagery and words. The question is whether these policy visions can be translated into a liberating image of thought rather than a straited, controlling one.

> I think there's a tsunami coming, because when a tsunami arrives to a place there's actually a whole lot of signs and symbols that we see and we sense and we know, but we're just not attuned to them.

This quote, and the image that accompanied it (fig.24), are from a presentation on "Fusion Skills" by the City of London Corporation's Strategic Director of Education and Skills at the Creative Bravery Festival 2020. This slide was followed by another which listed the social, economic, cultural and environmental catastrophes which the world faces. These, it is explained, arise from the unprecedented "speed of change" which characterises the current milieu. The themes are repeated in the "Fusion Cities of the Future" report (2019), also produced by the City of London Corporation (all in the public domain):

> What you learned in school does not prepare you for real work-life situations with adequate skills….Participants commented that the education system was ill-equipped to prepare people for the future. The school, as it largely exists today, was viewed as being irrelevant (p.15).

Causal factors listed in the report included "poor quality teaching" and "widespread boredom" (p.16).

Figure 24: Tsunami. City of London Corporation presentation, "Future Skills"[58].

These words and images were a repetition of the dystopian imagery which featured in presentations at creativity-related conferences organised by the OECD, by Education Scotland and by independent education consultancies. They are an instance of a signifying chain or code regarding the future, technology and the workplace which echoes throughout the social media messaging emanating from the macroscopic-level education policy desiring-machines, particularly the WEF (F→U→Φ→T).

The following analytical collage (fig. 25) provides an example of this repeated imagery and text, comprising screenshots harvested from a video on the WEF's Facebook page. As will be recalled, some of these images were used earlier in the thesis (chapter 4), making this another instance of a *ritournelle*. The analytical point is to draw attention to the policy desiring-productions being conveyed, which include dire warnings about a dystopian future in which humanity will be rendered obsolete by machines, unless we save ourselves by becoming creative:

[58] Source: Creative Bravery Festival 2020. Available: https://www.youtube.com/watch?v=Mt5Luj52N2Y [Accessed: 3 November 2020]

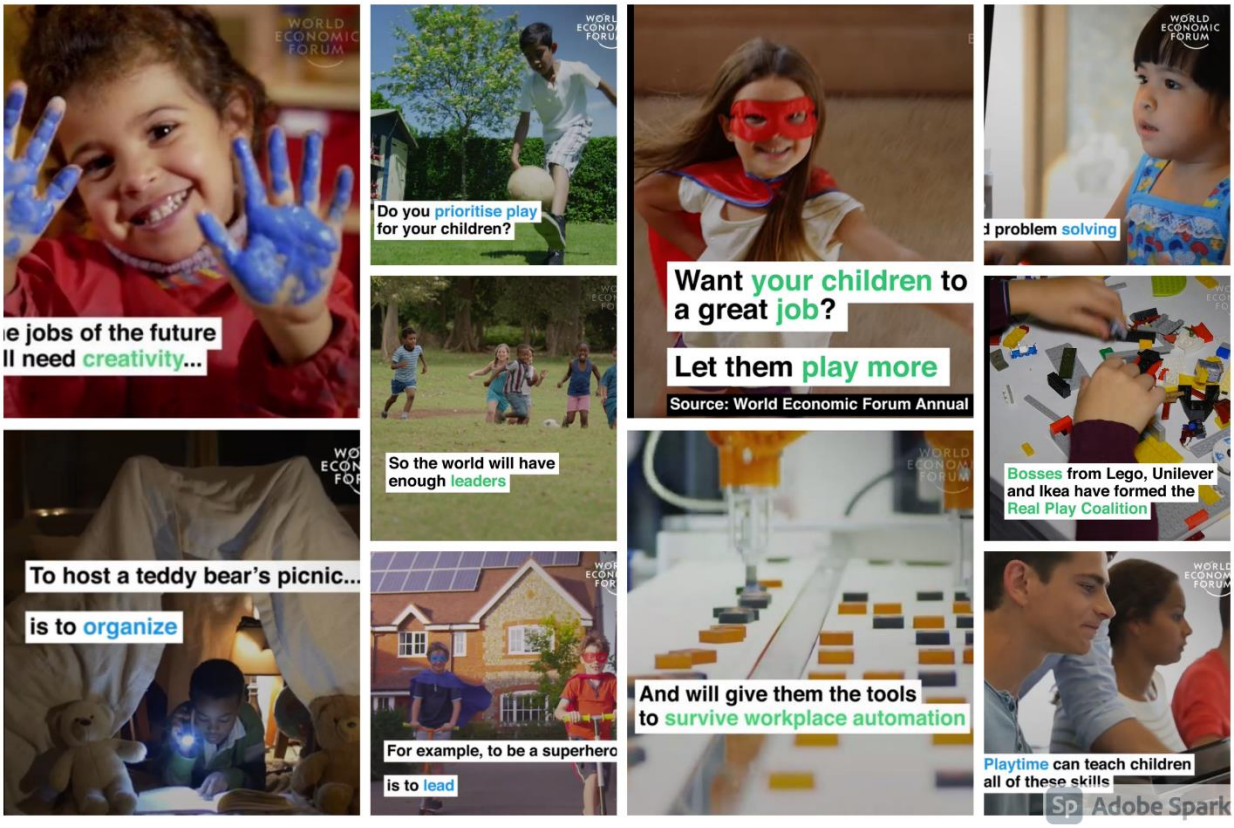

Figure 25: Analytical collage, WEF creativity video Facebook post[59]

The purpose of the video seems to be to transmit a message to parents. It insists that they desire what is being conveyed here. To achieve this, it plays on parental fears (that their children's future is at risk; that it is their responsibility to ensure that their children are equipped with the skills necessary for success; that their children must become leaders, or else they will be replaced by robots). This coding seems to be aimed at persuading parents that creativity is not an irrelevant messing around with paints but inculcates skills such as organisation and leadership, which are essential for children's incorporeal transformation into the successful leaders of tomorrow.

The policy vision of the future which is being conjured up here is akin to James' critique of policy-makers as shamans:

[59] Source: World Economic Forum, Facebook. Available: https://fb.watch/9u8fF-y33u/ [Accessed: 12 November 2018] Made with Adobe Spark.

> James: The words that are used… it's always a "vision". Shamans and false prophets have visions. Go take some mushrooms and lie down in a field if you want to have a vision! [Burgh High, Visit 1, Interview 1]

"False prophets" and "visions" convey notions of fantasy and delusion. The implication is that these are hallucinatory fictions that ultimately serve to code behaviour and undertake striation (Bogue 2010a). By denouncing this fiction-production (Bogue ibid., p.13), James attempts to smooth out the space striated by policy.

The relevance of this is that I held a focus group with teachers at Burgh High the day after attending a conference on creativity and education in which apocalyptic visions of education, creativity and the future were presented (fig.26). The focus group had been arranged as part of a professional learning and development day on the topic of creativity. The teachers had already attended a session prior to my arrival, which had been delivered by an education consultancy and involved a presentation featuring apocalyptic imagery. I was unaware of this, and had created provocations also containing this type of imagery for the focus group (figs.26-27.

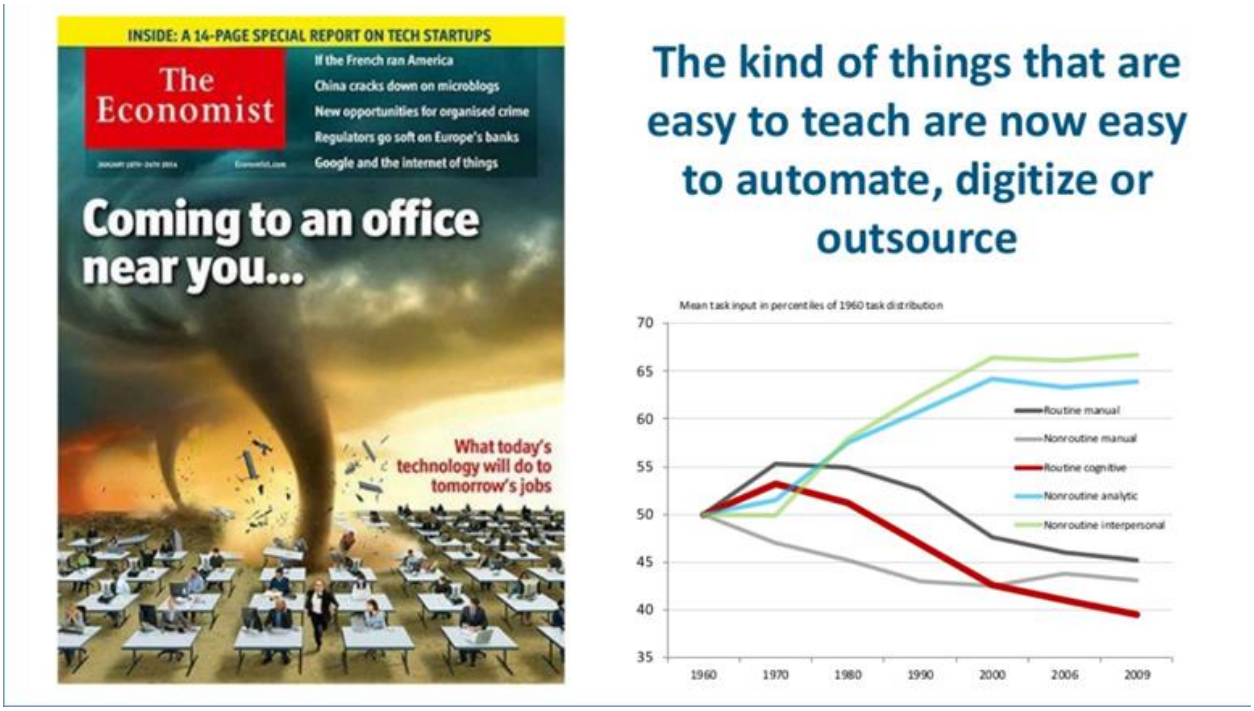

Figure 26: Provocation for focus groups: Tornado and obsolescence[60].

[60] Source: Andreas Schleicher, OECD CERI conference. "Creativity and Critical Thinking Skills in School: Moving a shared agenda forward" 24-25 September 2019, London. Available: https://www.oecd.org/education/ceri/creativity-and-critical-thinking-skills-in-school-moving-a-shared-agenda-forward.htm [Accessed:7 November 2019]

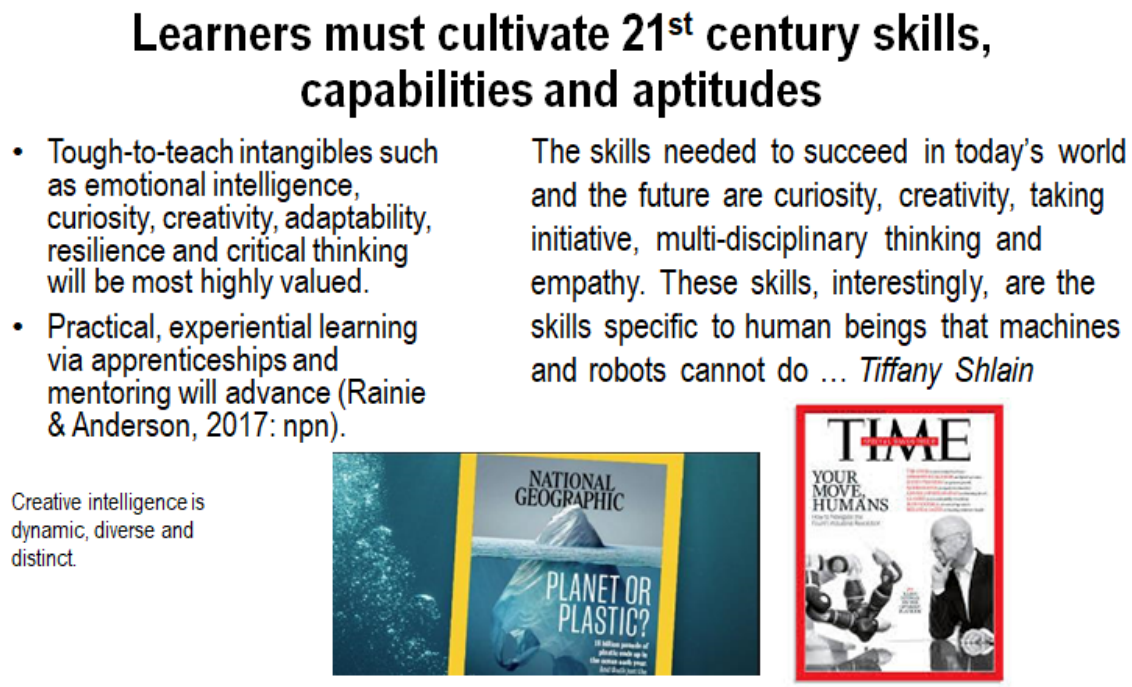

Figure 27: Provocation for focus groups: Iceberg and AI[61].

As such, images of humanity being superseded by our own technology and stress-inducing imperatives that education must catch up with this already-becoming future, were certainly on my mind, and were evidently on James' too:

> James (English teacher): That was like that video this morning. Is the reason we are going to have to be creative because the world is going to be taken over by hostile robots trying to sort of destroy us, and therefore we need to be, I don't know, fighting the robots?
>
> Barbara: Terminator. Skynet becomes self-aware!
>
> [laughter]
>
> James: Do we build the robots to kill the robots...? A virus!
>
> Barbara: We need John Connor to fight the robots.
>
> Lyndsey: (Biology teacher): Yeah, we need a virus and John Connor.
>
> Kirsty (English and business studies): That's what the curriculum's gonna teach you!

[61] Source: Presentations at Education Scotland National Creative Learning event. Available: https://www.creativityportal.org.uk/ [Accessed: 12 January 2021]

[Burgh High Visit 2 Focus Group 1]

Here, the teachers transform the dystopian policy imagery into a force for teacher-student resistance.

In another *ritournelle*, one of the local authority officers, Rachael, had also attended this same conference. Quotes from the then-Cabinet Secretary for Education, John Swinney, had featured in the invitation emails and promotional materials for the conference:

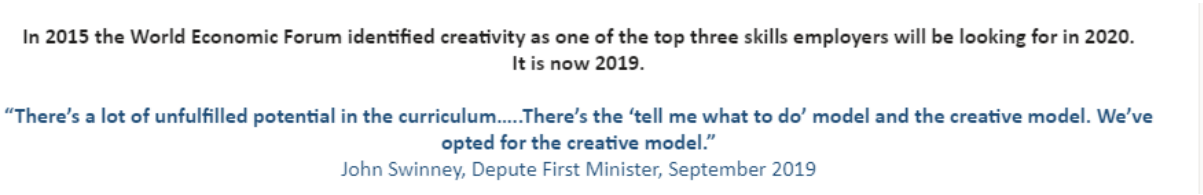

Figure 28: John Swinney quote[62]

Rachael was critical of this presentation of Scottish education:

> The John Swinney quote on the email about the "tell me what to do" way versus the "creative way" […] That's propaganda until you actually prove it. What is your evidence for that? [Local authority E, Visit 1, Interview 1]

There were several reasons why Rachael questioned the use of this quote. Was it really true that "we" have opted for the creative model? And what is the creative model? She suggested that this official State narrative is an unhelpful, binary representation of a transmission approach on the one hand, and a supposedly creative approach on the other. But she also cited creativity war-machine narratives about creativity, suggesting she held mixed views on the subject:

> If we don't do something [about creativity] it will become invisible. We keep on saying it's important, but nothing ever happens.... There's just this small group of advocates who are looking to make changes in a system that is unbreakable.

[62] Source: Are We Offering a Creative Curriculum? conference email. Personal Communication, 2 November 2019.

I was struck by the phrase “a system that is unbreakable”, suggesting the impossibility of freeing learning from control society’s striations. However, who are the small group of advocates Rachael mentions, what are the changes they desire to enact, and what notions of creativity are they working with? This is explored in the following vignettes.

Vignette: Courgettes and peppers

> There is something at work in my soul which I do not understand. I am practically industrious – painstaking, a workman to execute with perseverance and labour – but besides this there is a love for the marvellous, a belief in the marvellous, intertwined in all my projects, which hurries me out of the common pathways of men, even to the wild sea and unvisited regions I am about to explore.
>
> (Mary Shelley (1818), *Frankenstein or The Modern Prometheus*)

The conceptual persona who haunts this vignette is Dr Frankenstein, the “modern Prometheus”, as he is described in the novel’s subtitle. The above quote is not, however, by Victor Frankenstein, but by Robert Walton, the author of the letters that provide the framing device for the novel. It is thus a narrative within a narrative (now placed within yet another narrative, namely this vignette). The point is that incessant, all-consuming creative desire requires both hard work (“painstaking… with perseverance and labour”) and a transformative, almost mystical element (“a love for the marvellous”). It is a nomadic desire that moves from the “common pathways” to an exploration of “the wild sea and unvisited regions” — and it also contains the possibility of danger.

The following excerpt from the interview with Fiona also involves narratives within narratives. Fiona tended to discuss her understanding of creativity by acting out hypothesised conversations between herself and the sort of teachers who attend her training events:

> [Fiona, as trainer] Do you really believe that you’re absolutely unimaginative? What do you do, do you like cooking?
> [Fiona, as teacher] Yeah, yeah, I love cooking.
> [As trainer] What do you do when you've ran out of blah, blah for your recipe? Do you just go, “well, I can’t make it then”?
> [As teacher] Oh, no no no: it’s fine. I’ll just chop a pepper instead of a courgette.
> [As trainer] Then that was being... *creative?* ‘Cos that was finding a different solution and being imaginative with the content. Or: I want it to be more juicy; or it needs to be vegan — what am I going to do…? [Local authority F, Interview 1]

Fiona's construction of creativity includes notions about ubiquitous, democratic (Banaji et.al. 2010) or "little c" creativity. This is also evident in the following example of arranging a classroom, in which Fiona places herself in the role of a class teacher, asking herself hypothetical questions:

> And how do I arrange my [class]room in a creative way so it meets the needs of the children? Maybe I already do that, but I just didn't call that "creativity". Ergonomics is being creative, I'm know, I'm sure it is, but people probably don't think of that, maybe. [Local authority F, Interview 1]

In Fiona's examples, creativity is demonstrated by the ability to replace one component in a task (pepper) with another (courgette). This is creative because we are no longer following a prescribed, step-by-step recipe; we have thought of something new. Hence, creativity is about flexibility, open mindedness, novelty and the capacity to problem-solve.

A key frustration for Fiona is that teachers, and people generally, are doing creative things all the time, but they do not identify it as such. However, her move from "I know" and "I'm sure" to "probably" and "maybe" acknowledges an element of doubt, and represents a molecular crack (Grinberg 2013).

However, not all the education professionals were convinced that creativity is a generic skill that can be transferred unproblematically between domains:

> Isabel (headteacher): This idea that creativity is a skill and that skills have to be "transferrable" to *be* a skill… I'm not sure about that. I don't think creativity is a skill. Something like decoding in reading, yes. [Glen Academy, Visit 1, Interview 1]

The issue about whether creativity is a transferable skill also surfaced in the discussions at Burgh High. James (English) asked Catriona (Biology) and Lyndsey (Physics) about the fact that in National 4 and 5 the same titles are used within the Biology and Physics Curriculum for Excellence frameworks. He wondered whether this meant the content was the same. This discussion directly connects into the research question about the differences and repetitions between different subject domains in relation to creativity:

> Catriona: Across [National] 4 and [National] 5 for the three sciences, it is totally different content.

James: Even though in the Biology, some of the titles of the different units are the same.

Catriona: But what they actually need to know, it's totally like...

Kirsty (English and Business Studies): Yours is all, it's all knowledge.

James: .... Are there aspects of physics… that you would say are essential to learn that cut across the different areas? Is there anything…?

Lyndsey: [long pause] Probably [the] skills of actually tackling a problem… Erm...

James: Is skills in physics different to a chemistry skill?

Lyndsey: Hmm.

James: Or a biology skill?

Lyndsey: [short pause] Not necessarily, but I think in physics we'll do it better

[laughter]

Lyndsey: Eh, no; I don't know. I suppose, like, the way to tackle it is sort of similar, erm, but I think in physics it *is* quite like… how to go *about,* which is then quite like a blank. Like you were saying, just because they know the process of how to tackle a problem doesn't mean they are then able apply it somewhere else. [Burgh High, Visit 2, Focus group 1]

Lyndsey and Catriona were not convinced that there is significant crossover between the domains of physics and biology with regards to creativity. Lyndsey considers whether problem-solving could be one such skill, but she is uncertain. She cautions that "it doesn't mean [students] are going to be able to apply it somewhere else." It is the application that matters. And further, problems in physics are "like a blank": an open space, akin to the nomadic space of steppe, desert, ice or sea. However, Kirsty connects back to ideas about knowledge as narrowing the space for creativity ("yours is all knowledge").

Cornerstones

In this section, I consider what might be necessary for the teacher-student war-machine to break through the deadly repetition (Guattari 2000) of education policies which fail to meet their stated aims. What principles and values might be needed to inform a nomadic, creative pedagogy that can deterritorialise education?

James provided a critique of the current education system that focused on school bureaucracy, assessment procedures, and policy decisions at the *socius* and macroscopic policy levels. Here,

he takes aim at globalised policy constructions of people as “human capital”, discussing how this is interwoven with a national-level policy, the Scottish Government’s (2014) Developing the Young Workforce strategy:

> We’re being reframed as “human capital”. It’s all Orwellian doublethink. The Developing the Young Workforce agenda and the “human capital” framing, especially. The system is full of contradictions, absolutely full of contradictions, and that’s what secondary schools are having to work with. These Byzantine, unintended policy consequences of previous policy, and we’re living with these contradictions. [Burgh High, Visit 1, Interview 1]

The references to Orwell’s doublethink concept from *Nineteen Eighty-Four* echoes the dystopian imagery utilised in education events and policy messaging. James suggests that despite the supposedly well-intentioned aims of policy, it produces negative consequences, forming an unfavourable environment comprising layers of striation (Thompson et al. 2021) which schools have no choice other than to somehow function within. For James, belief and desire are essential for coping with “chaos”:

> The system does not have faith in what it is trying to do. It is worried about failing and having to report back on why they failed. [Burgh High, Visit 1, Interview 1]

James’ ensembles of enunciation (Guattari 2013) suggest that he sees these policy codes as inhibiting teachers’ power and restricting students’ growth. At another point in the discussion, he quotes Blake by referring to assessment as “mind forg’d manacles”. As he understands it, policy failings develop out of fear and a lack of belief.

James’ comments about faith found an echo in a focus group held in partnership with local authority E:

> Eleanor (FE lecturer): There have to be cornerstones — of faith, trust, understanding and ambition, in my opinion. There need to be *values*. It’s not about, I don't think it’s about *defining* creativity that’s important. It’s more about “what is the purpose of education?” I get young people [entering FE] with no confidence, after *six years* of [secondary] education. [Local authority E, Focus group 1]

Eleanor’s reference to students arriving in further education with no orientation to the purposes of education, and no confidence, leads to a discussion of how students, though absent from the interviews and focus groups, were an insistent presence that helped me create the concept of the teacher-student war-machine.

Vignette: *Boring!*

During the interview with Emily at Parkview, I described a conference I had attended in London. I told Emily how the presenters, academics who position themselves as pro-creativity and who were all based in England, got irritated when I questioned the way they were representing the Scottish curriculum. The audience was told that creativity was "woven all the way through the Scottish curriculum" (Cremin and Chappell 2018, n.p.), and this meant that the Scottish education system was creative, whereas creativity had been stripped out of the English curriculum[63]. I commented that although policy documents use the term creativity, that does not mean that CfE, or the education system more generally, are actually creative. To which I received the somewhat brusque response: "Well, at least it's there."

The interview took place in Emily's art and design classroom. Midway through, the phone rang. It was the office, informing Emily that a student was coming along to speak to her. She told me she was sorry, but she would have to pause the interview to go and "take an apology" from this student. On her return, she discussed the less-engaged students she was dealing with, including the student who had just apologised to her. I attempted to return to the topic we had been in the middle of discussing when the interview had been cut off:

> Barbara: Well, it might say "creativity" but that doesn't mean that it's actually the case that it's happening, and then people get a bit, "oh, at least it's there"...
>
> Emily [laughing]: "At least it's there!"
>
> [Interruption: Phone rings; Emily goes to "take an apology" from a student]
>
> [Recording restarts] Emily: [explaining that the student who had come to apologise was "disengaged", and describing some of the ways in which she and her colleagues had attempted to engage her]... So we get the work back, and she's written all over it: "*Boring!*" [sing-song emphasis]. I don't think we're managing there...
>
> [laughter]
>
> Barbara: So, where were we? I think I was going on about that perception of the English and the Scottish curriculum from the researchers….

The tale of the student who wrote "Boring!" all over the work was perhaps a throwaway aside as we tried to pick up the threads of the discussion following the interruption. I initially dismissed

[63] A similar representation of the English versus the Scottish education system can be found in the "How do we compare to other education systems?" chapter of Lucas and colleagues' report for the Durham Commission on Creativity and Education (James et al. 2019).

this episode and did not consider it as having any importance. When transcribing the recording, I merely wrote “[Interruption]” to mark the caesura in the transcript. As I engaged with the literature on nomadic and schizoanalytic approaches, these interruptions, caesurae, and throwaway remarks became more significant than they first appeared (St Pierre 2012).

Deleuze and Guattari observe that something always exceeds or evades the action of coding, is illegible or unreadable, and undermines the order and stability of the research. MacLure (2013a, p.169) refers to this as “wild discourse, mad elements and rebel becomings”. This is similar to St Pierre’s notion of unruly data (2012) which does not fit within a framework and evades capture. It became necessary to go back over the recordings and transcribe what happened verbatim, rather than glossing over incidents such as this. Paying attention to what was happening around the edges of the interview, or just off-stage, produced greater insight.

“Boring!” was a molecular crack, as the absent component of this particular research desiring-machine, the students themselves, found a way in. This aside was just as interesting as Emily’s story about the student who was given the highest mark possible. But it was the troublesome student’s comment — “Boring!” — that had an insistence and an intensity which seemed to gain momentum. The manner in which Emily conveyed the tale was dry and amusing, which is also perhaps why it stuck in my mind. “Boring!” seemed to resonate; it was a provocation aimed at the task, the topic, the course, the subject, the teacher, the school, the curriculum, and in a sense, at me, too. This student was interrupting and breaking through in two different ways, literally with her apology and then through Emily’s memory of the “Boring!” incident.

“A mechanical device”

As we walked through the labyrinthine corridors of Parkview, a Victorian-era building with 1970s annexes, Emily pointed out examples of students’ artwork on the walls. “That’s what we want — more of *this*, and less of *this*,” she said, pointing to a self-portrait that had been digitally altered (“more of *this*”) and a traditional, pencil self-portrait (“less of *this*”).

Emily contrasted Higher Art and Design with Advanced Higher and A Level Art. In her view, Higher assessment practices hinder students’ creative expression, but there are ways in which it might be approached differently:

> Emily: So going back to the differences between the English system and the Scottish system, there’s much more creativity [in the English system] as they allow sketchbooks.

> Artists work in sketchbooks. But there's no sketchbooks… you can't use them for Higher because you can't present them. You see these sheets up here? [A2 sheets displayed on the classroom walls] That's assessment sheets.. so, that's it, you have 3 A2 sheets, you have to put everything on there. [Parkview Secondary, Visit 2, Interview 2]

Sketchbooks were, for Emily, a way of mapping the students' educational journey:

> As a marker I would be looking for […] refinement, and continuity, and producing an outcome, so those are elements of creativity that are, that are being assessed, and also I think that…[breaks off and changes direction] This is always a problem for me because they're saying "relevant and focused", but if you've got a sketchbook you can see the journey this person's been on. If you could have two images, excuse me, that's not showing "relevant and focused", I'm using two images that worked in the end, but…

Here, there is a tension between what is shown — two images selected for inclusion in a student's folio — and whether these images fulfil the assessment command words "relevant and focused". Emily questions whether two images can be said to demonstrate relevancy and focus in any meaningful way. She suggests that the process itself is of more significance, and that this is where the learning can be mapped. Since "artists work in sketchbooks", sketchbooks and similar materials need to be included in folio submissions for Highers, because in this way the creative process becomes visible.

I asked Emily what she thought could be done, practically, to make the assessment process more meaningful.

> Emily: I think that they need to open up the process so that it becomes a little bit broader, but in order to do that they have to take bigger folios… Maybe make several small marking teams instead, as opposed to having all the Highers done at one time…. It seems like everything has to fit into this mechanical device that is the SQA, and rolling forward… Like, one term to get the Higher through is *brutal.*

Emily regarded the process of marking as potentially creative, as demonstrated by her contrasting experiences of being part of both Higher and Advanced Higher marking teams:

> At Advanced Higher they have a huge breadth [in the] marking teams, and they have a very open attitude to people with expertise, and there's a lot of discussion around folios, there's time allowed. Stuff is…discussed, it's shared. So it's actually more of a CPD [continuing professional development] opportunity for teachers 'cos you're learning so much… I did the marking for Higher once, and it's much more of a steam engine, it's driven... There's not as much sharing, it's much more driven from above… The Advanced Higher team, in my experience there'll be discussions about things… so every part of the process is really creative. Whereas at Higher, it was very much there's

> this perceived knowledge, there's this little clique of people who know what they're doing and they see the way that it's meant to be, and quite honestly the two don't gel.

The metaphor of the steam engine is used to convey the uncreative nature of the Higher marking process. This was an arboreal and directed experience that left little time for reflection and discussion. The "driven" assessment machine, operating at high speed, resulted teachers feeling out of control. In contrast:

> The Advanced Higher is far more like designers' and artists' practice...There is huge scope for creativity… and that is rewarded and acknowledged, whereas… when it comes to the Higher the marking teams tend to be much more, I think, traditional. I think the approach certainly to expressive work is extraordinarily traditional, and very, very narrow and doesn't really relate to artistic practice as a *practice*.

Similarly, the teachers in the focus group at Lochside Academy regarded Advanced Higher as a vector for creativity:

> Callum (English teacher): Advanced Higher is the bridge. That's where there's the scope. [Lochside Academy, Visit 1, Focus Group 1]

As such, Advanced Highers enable a line of flight to a smooth space where thought and creativity becomes possible. Highers and Nationals could use this model; as such there is no need to look for or invent new qualifications:

> Callum: [You need to] find existing things that you could use to build something new.

This idea of building from the materials you already have seemed to be connected to an aesthetics of becoming in Callum's thinking. In fact, Callum was the only participant to mention aesthetics. A rhizomatic knot is that he was also broadly supportive of the SQA's position in relation to assessment criteria and creative learning:

> Callum: This is what SQA are talking about —the development of taste. [Students] being able to make informed judgements, and through this, produce cultural artefacts.

In contrast, Fiona was not convinced that the Advanced Higher model, which she regarded as elitist, could be used to reform other externally assessed courses:

> So up until Higher they've spent 15 years or whatever it is… being taught there's a right answer, it's in the back of the book, but don't look. And suddenly it's like, "oh no, no, it's about expression, darling!" And, "what do you think, show me your journey…" [Local authority F, Visit 1, Interview 1]

She then imagines the response of a student to being told this:

> "Like, *WHAT*? To learn what you want me to learn, I've got really good at that and that's why I'm in the top group doing Advanced Higher, and suddenly you're asking a completely different thing of me!" And that's another reason why they need to be doing it right from early years through, and not dropping it and then conjuring it back for the elite that do an Advanced Higher in any subject. Because it's too late, and it's terrifying. [Local authority F, Visit 1, Interview 1]

Out of Control

Vignette: Worms and dragons

The conceptual persona who possesses this plateau is Venus, goddess of desire but also of victory. "Out of control" refers to Dionysian excess, but also to the desire to escape from control society's apparatus of capture.

> Kirsty (English and Business Studies teacher): I have a thought about this. I love education, but I don't love teaching.
>
> Lyndsey (Physics teacher): I love teaching. I just don't love the other bits around it.
>
> James (English teacher): I love teaching.
>
> Kirsty: I don't love it anymore because of what we've been reduced to.
>
> James: That's where it comes back to us, to be different, to do things differently, and even if we get attacked, what we do? We fight back. Lyndsey will make us some sort of death ray. [Burgh High Visit 2 Focus Group 1]

Here, the teachers discuss love, specifically the love of teaching. This group also mentioned joy, in the context of all the joy being stripped out of creativity due to examinations and performativity pressures. Kirsty had mentioned that she welcomed the inclusion of sadness and failure in the provocation (fig.21). The interplay of sadness and joy features in Deleuze and Guattari's theories. To create is to "become-active", and this involves an understanding of desire as joy. Deriving from Spinoza's Ethics, active joy or desire involves moving on from hobbies and pass-times towards a more profound engagement with what it means to create (Boundas 2010). The development of active joy/desire, however, is infused with a greater understanding of life's

sorrows and contradictions. This is influenced by Nietzsche's (1993, p.267) writings on the Dionysian and Apollonian in which the creative process requires the intertwining of restraint and excess.

This exchange between the Burgh teachers also saw the emergence of a potential teaching war-machine, resisting attacks on teachers from whatever quarter these may originate. The comment about the death ray reflects a previous part of the discussion in which analogies were made with *The Terminator* series of films. The idea that you have to liberate yourself ("we fight back") and fashion your own weapons (the death ray) to fight your way out finds an echo in Deleuze's (1992) comments that young people must find their own solutions. However, James identified the physics teacher as being the creator of the death ray, because she has the domain-specific knowledge and skills to be able to do so.

Despite this talk of empowerment, there was a suggestion that all it may be possible for the teaching war-machine to do is win small battles:

> Kirsty: So if nothing's going to change… is it all just about finding small battles to fight?
>
> James: [education consultants] talk about [how] there are some things we can't change, but around that there's fifteen percent either side of wriggle room. How can we find the wriggle room, where is the wriggle room?... What is that space? 'Cos otherwise what happens is we do get very frustrated, and we do batter our heads up against a brick wall, and there are big, big things that are not going to change. So to try and find that space is what we're going to hopefully try and do.
>
> Catriona: It's really sad isn't it? You get to that point where you resign yourself.

There is talk here of surrender and defeat, along with fighting. If it is only possible to win small battles, and all the seemingly-liberating education consultants can suggest is that teachers can wriggle like worms through soil, is the war is being lost? Catriona refers to another form of losing, that of losing one's own self. There are further violent metaphors, such as battering one's head against a brick wall, an act of self-harm as protest at the immovable wall of power. Hence, we have another *ritournelle* of joy and sadness, and a manifestation of Dionysus-Apollo locked in battle with himself.

Deleuze and Guattari's discuss "the fabrication of giants" (1994, p.171) which involves creating larger-than-life images which transform our way of thinking and facilitate the emergence of the

people to come (Bogue 2010b). Here, I use the becoming-dragon, rather than a giant, as a conceptual persona. In Alasdair Gray's novel *Lanark* (1981), patients in a surreal, infernal psychiatric institution "become salamander" by morphing into beautiful silver and gold dragons at a certain stage of their illness. I use this imagery to consider how, affected by external pressures, teachers can be transformed from that which merely wriggles in the earth — the worm — into becoming-dragon, or war-machine. The etymology of *worm* is *wyrm*, which in Old English can also mean a dragon.

In this extract, the Burgh teachers discuss the dance of creativity and assessment. Here, creativity is understood as yet another arboreally-imposed "thing to do" that is handed down to teachers:

> James: … But then [creativity] has to be assessed, and what are you going to assess? If we're clear about what we're assessing. What are we assessing?
>
> Kirsty: And who's decided what we're assessing?
>
> James: It's going to be *given* to us at the end of the day, isn't it? "There's another thing for you to do". And is that going to take all the joy out of this process… Are we going to end up losing all the joy in this as well, because it's another thing that's going to get handed back to us that's so far away from our original thoughts about what we might do, and the potential…? …In English, I think I have an idea of how I would want to go about the curriculum, get it open. How would you do that in Physics?
>
> Lyndsey: What, to make it more creative?
>
> James: If you were sitting there saying, how would I develop a curriculum… How would you? What would you do, what questions would you ask?
>
> Lyndsey: I'd make a list of everything they need to know. It would come back to the content. It would come back to the knowledge.
>
> Catriona: Would you work back from the exam? Or would you — where does the assessment, I suppose, the, the final assessment sit in that?
>
> Lyndsey: I don't know, like… So like, if it was the National 5, then it's already split up into, like, into topics and the documentation that's there.

James trails off at "and the potential…"; leaving this unexpressed. With the interjection "And who's decided what we're assessing?", Kirsty raises the issue of power and control within the current system of assessment. The teacher can take as open an approach to curriculum development as possible, but ultimately, decisions about what is to be summatively assessed,

and how, are not made by class teachers. The assessment itself exerts power ("Would you work back from the exam?"). Lyndsey emphasises knowledge, since she believes this is ultimately what everything "comes back to" in her domain of physics, but the list approach she proposes feels like a return to the idea of ticking off the boxes, as discussed above. The two science teachers struggle to think of how they might take a different approach to the curriculum. This exchange points to the difficulties in attempting to smooth out the territory of education and imagine how it might be done otherwise.

Absent arts, present parents

This section considers lacunae and the affect of unseen but insistent presences: the arts, which are frequently missing from policy constructions of creativity, and parental ideas about the value of the arts.

Parental attitudes featured prominently in the discussion with the teachers at St Medan's High and St Drostan's Academy. This emerged out of the teachers' reflections on why, despite the insistent policy codes regarding the importance of creativity, their schools were experiencing a decline in the numbers of students opting for expressive arts subjects at National 5, Higher and Advanced Higher:

> Matthew (headteacher, St Medan's): A lot of the time it's parental… It's what they [i.e., parents] *imagine* we're doing. They don't value it. Creative subjects are not seen as academic. There are misconceptions around academia.... The creative subject pupils are often brought out at [school] events to *perform*. [But] music is very academic, in terms of composition, music theory….

Matthew's use of "perform" had several layers of meaning: firstly, the creative subject students were literally performing at events involving parents and other visitors to the school. Secondly, these students were wheeled out to enact the role of high-achieving, happy, confident students. Although Matthew used a great deal of humour when discussing parents' preconceptions about the arts, there was also frustration. Parents lacked an understanding that the expressive arts contributed to precisely the sort of outcomes they desired for their children. This theme was continued by Claire:

> Claire (depute head, St Drostan's Academy): Parents are like, "he's no gonnae need this, he disnae need it. Whit's he gonnae dae wi' that[64]?"

[64] I.e.: "He's not going to need this subject; he's not going to use it to get a job; what's he going to do with it?"

In Claire's opinion, parents had an instrumental view of expressive arts subjects, regarding them as useless since they could not envisage a job where these qualifications would be relevant. However, Claire's thinking moved beyond employability as a rationale for the arts towards the idea of creativity as societal good:

> Claire: [But] it's the ones doing the creative subjects that are the dux [the highest attaining student in the school], that are the contributors. The young people that are involved in creative subjects, they're *involved* — they're huge contributors. They have a sense of altruism…. Creative subjects help skills develop quicker, like fine motor skills. When they're using tablets and apps, they're just dog-pawing.

Claire's construction of creativity stretches out beyond the idea of creativity as an innate goodness towards a collective, moral vision of creativity (Glaveanu et al. 2019). Isabel, headteacher at Glen, also connected creativity to goodness in her consideration of the purpose of education and what it means to lead a good life. However, she defined this in terms of individual freedom and happiness. Claire suggests that the expressive arts enable students to become "more human", compared to the animal-like "dog-pawing" required by modern technology.

The notion of creativity as an inherent good also surfaced in the discussions at Burgh High:

> James (English teacher): With creativity, it's kind of like — "it's a good thing". Now it seems to be a good thing, to be creative, at the moment, but…
>
> Catriona (Biology teacher): Depends how you use it.

Catriona's comment "depends how you use it" shaped the pedagogical questions about aims, meaning, orientation and value that I propose in chapter seven, such as "creativity for what purpose?" These questions aim to open up thought and aide teachers and students in their consideration of what they desire to do, how and why.

Sponge-child

As will be recalled from the literature review (chapter one), the idea that creativity is a potentially liberating vehicle, and that schools are barriers to this, is prevalent throughout education policy and thought. In this section, notions of creativity and education as freeing, and inherently connected with youth and innate qualities, are explored.

The focus groups held in partnership with local authority E were, as discussed above, intended to provide spaces for education professionals to discuss creativity and education away from the arboreal control of the school or office. The purpose was to expand thought and build relationships. As such, the groups can be regarded as an attempt at enacting Guattari's (2015) principle of transversality and the group subject. However, the extent to which this was successful is debatable. Conversations were held in the groups which, arguably, reflect the co-option of creativity and other liberating notions by the IWC apparatus of capture (Watson 2018). These surfaced in a discussion about early years education:

> Rachael: The basis of early years education is supporting children to ask questions …and that is something that disappears the higher up you get into education. The questions stop being asked, which then relates directly to what we were talking about earlier, being deskilled to ask questions… We then become adults who don't question government, who don't question the systems and structures that we have. [Local authority E, Focus Group 1]

Rachael continued with her line of thought, which other members of the group then connected into, rhizomatically shooting off along new lines:

> Rachael: Where in early years [my colleagues tell me that] the fact that they're willing to be led by children in regards to their learning, that changes completely when you get to primary, secondary.
>
> David (education consultant): That's not a surprise because the conventional wisdom is that it's all very well to play when you're in nursery but the playing's got to stop, and you've got to start learning once you're about primary 2…
>
> Joanne (early years practitioner): Noooooooo! We learn through play! We learn through play!
>
> David: Of course…. Put a child alone in a room with a sponge, and that's all they need to do. Leave them alone and they'll learn everything they need to learn. [I've heard an] emeritus professor of child psychology saying "just leave them alone, leave them alone and they'll learn. They'll soak it up like a sponge." He's quite right. Learning through play is the way everybody learns… people think "oh, kids play when they're in nursery, they stop playing and start learning when they're in primary 1." It's an incredibly rigid, old fashioned approach to what learning is, but it's still prevalent.

David used repetition to emphasise his point about the importance of play-based learning. This was supported and intensified by Joanne's impassioned "Noooooooo!". David speaks with authority — "Of course." In his construction of creativity, the sponge is a material which has affect. It brings about embodied transformation in children by making them creative, but at the

same time it is also what children are. They themselves are sponges, naturally absorbing learning. I had previously encountered this imagery of the sponge-child in creativity movement presentations and discussions (fig.29).

Figure 29: Babies and sponges[65].

David repeats a familiar *ritournelle* from the creativity war-machine: that formal education is old-fashioned and inflexible. He also invokes the authority of the "emeritus professor of child psychology" to support the construction of child-sponge as creative-learner. There are various lacunae here: knowledge is not mentioned, and nor are parents or teachers, and nor is the wider ecosophy. There are no socio-economic factors at play; there is no mention of culture or environment. The sponge-child exists in a bubble.

Make it old

A recurring *ritournelle* in the creativity war-machine is that creativity is associated with newness and youth. Anything old tends to be deemed irrelevant or oppressive. This line of thinking encourages the view that constant novelty, in the form of endless new apps and other technological innovations (Phyla), is the solution to fostering creativity:

> Peter (maths teacher): It doesn't have to be new and shiny. Sometimes it has to be rote, hard and dull…I don't know if you've ever seen Richard Feynman, the physicist, and the Fun to Imagine series; it's on YouTube. It's just him, sitting in an easy chair, explaining physics concepts. Nothing fancy. And it's excellent. Or AJP Taylor — just a boring bloke

[65] Source: Creative Bravery Festival 2020. *Forget what you know about teaching and start learning*. Available: https://www.youtube.com/watch?v=Uwk6aNmKJ6I [Accessed: 2 November 2020]

> in a suit standing up in front of a camera. Or there's John Green, from the Vlogbrothers, who [does] rapid-fire teaching of history. All they do is talk. [Glen Academy, Visit 2, Focus group 1]

In Peter's view, new assessment models, websites or apps were not the answer. Meaningful learning and teaching can involve "a boring bloke in a suit" who is "just talking". Similarly, Dana was scathing about novelty for the sake of it:

> You don't need extra *stuff* [...] In the BGE, that list of stuff you put up (fig.30) is all the stuff we assess on anyway. It's something that we do anyway. We *already* assess for all of this… . [Glen Academy, Visit 2, Focus group 1]

Figure 30: Provocation: "Creativity is…"

Another take on the necessity of the dull and the rote emerged in the discussion at Burgh High:

> Kirsty: ... A lot of children *hate* learning modern languages, but they don't understand it's beneficial for them. They just don't like doing it. If you take that away, what damage is that doing to their ability to think creatively? What are we taking away because they just don't like it? [Sighs]... they don't know what's good for them, or why something might be good for them.

> James: That's where the teacher comes in, isn't it? That's where the creativity comes in… Because the assumption is that in languages, they can't do anything until they have the grammar. So until you have the grammar… then, well, nothing much you can do. So you have to go through the laborious process that turns kids off in terms of learning. [Burgh High, Visit 2, Focus group1]

Here the suggestion is that although it may not be possible to avoid the dull aspects of learning, creativity lies with the teacher, who can find ways to make the material engaging. This is similar to Peter and Dana's views that the focus should be on the teacher's creativity:

> Peter (maths teacher): There are big, difficult concepts to teach [in maths], to kids who don't want to be there. [Glen Academy, Visit 2, Focus Group 1]

His colleague Dana agreed with this view:

> Dana (English teacher): Creativity is more important in teachers than in kids.
> Peter: It's how you deliver. If you're creative, you'll get comments from the kids —"oh, that's easy! I thought it was hard."

For Dana and Peter, creativity is about finding ways of making difficult abstract concepts comprehensible and meaningful for their students. In the context of Glen Academy, many of the S4 and S5 students did not see any value in learning something that they saw as irrelevant to their lives. Methodologically, the teachers' views about creativity meant that they thought classroom observations would be an appropriate method for data generation, as I could then witness this creative teaching in action.

There was an echo of Peter and Dana's views in the focus group held at Lochside Academy:

> Callum (English teacher): Barriers like time, content, assessment get in the way. The creativity is in how to manage these things. [Lochside Academy, Visit 1, Focus group1]

Callum did not specify what forms or uses of assessment he was referring to. This slippage in the teachers' use of the term "assessment" is identifiable throughout the data. The distinction between assessment *per* se and the specific requirements arising from National Qualifications courses, for example, is perhaps not made carefully enough. In this instance, it is difficult to narrow in precisely on Callum's meaning. He seems to be using assessment as a catch-all term that refers to both the pressures arising from assessment in performativity culture, which can be

summarised as “the demand on schools and teachers to ‘perform’, that is, to generate achievements in a clearly specified range of ‘outcomes’” (Priestley et al. 2015, p.105).

I now consider the possibilities for teacher resistance and, going further, transformation, or the move from worm to dragon.

The Resistance: Teacher-student war-machine

The conceptual persona for this plateau is Minerva, since she represents not only schools, but also the art of defensive war. This conveys the idea that it is necessary to go beyond frustrations with the present and merely hope for a better future. As Deleuze argues: “It’s not a question of worrying or hoping for the best, but of finding new weapons” (1995, p.178).

In this extract, James tells his colleagues about the “teachers don’t understand creativity skills” comment that was made during the Education Scotland conference:

> They don’t trust teachers, and I think teachers are the people who *do* know. It’s all the hierarchy who don’t know, because they’re trying to face up to their accountability, so therefore to give it to teachers. They’re terrified that teachers won’t do as they’re told, so what they want to do is constantly control it. Whereas as we found here, teachers do, they absolutely do know what creativity is… [Burgh High, Visit 2, Focus group1]

“They” appears to refer to those working in national and local government. James perceived this criticism of teachers as a desire to shift responsibility, with teachers being blamed for policy failure. For James, this is a game of control: policy makers, and those responsible for ensuring compliance with the policies, need teachers to comply, but fear that they will not. James also seems to be actively and consciously shaping the findings of this research.

I now bring in a *ritournelle* back to the metaphors of children and boxes, discussed above. This is an instance of generating difference through repetition, by raising the same theme again but in a different plateau of the findings. This time, attention is drawn to notions of childhood and freedom, teaching as a striated profession, and the construction of assessment as a tool for measuring, comparing, classifying and controlling:

> Kirsty: I think that’s becoming less and less possible — your ability in the classroom to do what you want…. I try and do what I want, and I'm told not to. And that’s the bit that enthuses me about teaching, because in the classroom… I can indulge in things that I think are creative or different, and explore education. But more and more I'm being told

> “no, no, no, no, fit into this box. Fit into this so that, again, so we can measure it, because [...] we only value things we can measure, and so if you can’t measure it, what worth does it have to anyone?”
>
> James: Lyndsey is twitching again, because measuring things is very important [in Physics], is fundamental…
>
> Kirsty: Well, yeah, but it’s the same for us [in English]. We’re feeling increasingly frustrated about being put into this box, but the kids are exactly the same. You’ve got 30 of them in front of you; they’re all “unique little special this and this”, but… [tails off]
>
> [Burgh High, Visit 2, Focus group 1]

Boxing is something that is “being done” to teachers, but is also happening to students. Kirsty is increasingly frustrated by the control that is exerted on teachers through performative measures. She expresses the idea that, ironically, even though children are constructed as all being “unique and special” (c.f. Rinaldi 2020, discussed in chapter five) this does not mean they are free, since children are also “boxed”. The tailing off suggests that Kirsty has reached the point at which enunciation is no longer possible.

Outlandish

Potential ways out for teachers have been discussed, but what of a way out for students? Laura at Glen Academy reflected on this, discussing the difficulties in motivating a group of students who are deemed to be low-attaining:

> [Creativity] really requires pupils to be motivated and take responsibility — it’s pupil agency. And it’s taking an idea forward, and not just waiting and expecting to be spoon fed… Those are the issues that I feel like I'm dealing with. When it came to [the group of students] actually doing the work, the barriers went up, the behaviour started, it was all the same issues again. [Glen Academy, Online interview 1]

Laura was the only teacher I spoke to who mentioned student agency, although others referred to associated ideas, such as the Burgh High teachers’ reflections on what would make learning more active and meaningful as opposed to directive and given.

In keeping with an understanding of creativity as fluid, but also an innate ability that can be drawn out and nurtured, Fiona believed that assessment of creativity should focus on personal growth. It cannot be a linear measurement, due to the fluctuating nature of creativity. As for how assessment might be reformed in line with this belief, Fiona suggested that:

> You can have in any subject a more open-ended question… where you are given random things, and told to express your understanding of this physics equation, or this maths concept, or this conflict in history. Demonstrate it with these. It's not impossible. [Local authority F, Interview 1]

The random objects approach is similar to the cabinet of curiosities proposed by MacLure (2013a). However, it is unclear how an object-based, entirely non-written approach could work in the context of summative assessment[66]. Further, these would not be artefacts gathered or generated by students themselves, but would be given to students for them to create meaning out of. However, the teacher-student war-machine provides a potential for rethinking assessment, which I now discuss.

Eating the moon

In this plateau, I consider some approaches for actualising the teacher-student war-machine. This involves the concepts of map/trace but also requires the involvement of the guide. It also insists on the role of knowledge.

The music composition assessment developed by Charlie at Parkview provides a model for bringing student and teacher together into a war-machine. It proposes principles for assessment based on an ecological view and an agency-based understanding of teaching and learning. This model asks teachers to consider the background and interests of individual students and does not position one genre of music as "better" than another. Charlie writes about the importance of emphasising the relationship between the teacher and the student, which develops through the composition activities, and that in order to understand the relationship, it needs to be untangled then reconstructed. This model involves connecting flows that plug back into different stages, somewhat akin to a feedback loop. The different aspects of the model include the environmental (in which space and time are characteristics of a creative environment), agency, creative problem solving (reflection and refining ideas), technical advice, and collaboration (with peers, in workshops or with a visiting specialist) [Pers. Comm. Charlie, Parkview Academy].

[66] A *ritournelle*: When I was in primary five, I was one of a small group of students from my school who were sent to Jordanhill Teacher Training College (subsequently the University of Strathclyde's Faculty of Education) for the day, where we had to undertake some sort of assessment involving a table of random objects. We had to write a story, or a few lines at least, based on each of the objects, and were given a few minutes per object. One of these was a dead leaf. I vividly recall the stress of trying to think of anything to write about this leaf, and the sense of dread as the time limit approached and I had failed to write anything other than "It is autumn and the leaf has fallen off the tree" (or something like that). This probably explains why I am not keen on the table of random objects assessment idea.

Where are students most creative? It is largely something that occurs outside of formal education, according to both Claire and Isabel:

> Claire (depute head, St Drostan's): Most creative experiences are outside of the classroom. [Joint focus group, St Drostan's Academy and St Medan's High]

> Isabel (headteacher, Glen Academy): It's not that young people aren't creative… They see creativity as something that's added on [after] the school day. Not something that happens between 9 and 3:30. [Glen Academy, Visit 1, Interview 1]

One of the reasons for this is that as that creativity requires a smoothing of space, or becoming "outlandish", a term Deleuze (*Gilles Deleuze from A to Z* (2011)) used to explain deterritorialisation.

> Mhairi (drama teacher, St Medan's): You need freedom to be creative. To a ridiculous level, though. [Joint focus group, St Drostan's Academy and St Medan's High]

Mhairi's reference to the ridiculous explains the title of this plateau. The conceptual persona here is Duncan Thaw, the protagonist of Alasdair Gray's novel *Lanark* (1981). Duncan has finished his Highers and is being pressured by his father and the school to decide on a career:

> I had a wish to be an artist. Was that not mad of me? I had this work of art I wanted to make... I didn't know *what* it would have been, but I knew how to get ready to make it. I had to read poetry and hear music and study philosophy and write and draw and paint. I had to learn how things and people felt and were made and behaved and how the human body worked and its appearance and proportions in different situations. In fact, I had to eat the bloody moon! (Gray, 1981 p.204).

This raises questions for further research, namely: it possible for students to be truly creative in the striated territory of the school? And further, is it desirable to assess the creative work that flourishes outside of school? As Isabel and Graham noted, these questions reach beyond the territory of the present research desiring-machine:

> Graham (depute): It's a shame young people are not getting their views heard [in this research]
> Isabel (headteacher): That would be another project. [Glen Academy, Visit 1, Interview 1]

Patrolling the perimeters

In this plateau I consider the impediments to the teacher-student war-machine "becoming". In a return to the theme of control, Kirsty reflected on assessment and pointlessness, and described how she had been blocked from taking a different approach:

> Kirsty: I struggle with the point of homework, and I struggle with the point of assessment… A lot of the assessment we do, I think it's pointless […] I came up with a different way of doing assessment and homework that I think is potentially more useful, and I was told I had to change it to make it more like what most other people were doing… So it was more like traditional homework basically where you would just get a question and mark it.
>
> Catriona: Wow, that's not very…
>
> Kirsty: Partly because it wasn't consistent with everyone else. But I was like, there's no benefit to what they're doing.
>
> Lyndsey: There's no benefit to making others all the same as each other
>
> Kirsty: And I was trying to think of something that *would* be of benefit.
>
> Catriona: Bristle, bristle!
>
> Kirsty: And certainly the homework was very self-directed… It was very freeform in shape, it was like *you* decide what is the stuff you've not understood… and if you're fine with everything then that's fine, you don't have any homework. [Burgh High, Visit 2, Focus group 1]

Kirsty had been prevented by senior management from taking a different approach. Lyndsey questioned what Kirsty was trying to do and why management might have objected, whereas Catriona's reaction suggests bristling with anger, like an animal with its fur on end. Here we have an instance of becoming-animal, as Kirsty's narrative describes how she tried to pass beyond the boundaries of what is permitted within the school Territory. Difference is not permissible, only circles of deadly repetition (Guattari 2013) resulting from the senior management's insistence on a uniform, conventional approach.

Sometimes, schools attempted to embrace creativity, only to find themselves in the sort of entanglements that can occur when rhizomatic approaches develop within the trunk of arboreal school structures. At the Lochside Academy focus group, one of the teachers explained that the school had been criticised in its inspection report for not being sufficiently creative:

> Beth (English teacher): I'd like to know how we can do creativity and get better at it. The school got some criticism in our inspection report, as "weak" on creativity… So we brought in [education consultancy] to do some wacky stuff. [Lochside Academy, Visit 1, Focus Group 1]

The inspection regime is administered by Her Majesty's Inspectorate for Education (HMIE), currently part of Education Scotland, the overarching education body. Creativity is thus captured by the State regime. Schools can be criticised for being too creative, as well as for not being creative enough. The inspection regime constructs creativity as something that can be weak, and which must be improved. The solution at Lochside was to bring in consultants specialising in creativity to magic up the "wacky stuff". I had the sense that the wacky stuff was quarantined from the main territory of Lochside, neatly packaged within a time-limited series of interventions delivered by an external agency. It is both a smoothing (dismantling of the educational structures by letting the chaos in) and a striation (the wacky stuff is time-limited and contained). It is about being transported by wild excess, but within tightly controlled gridlines.

This type of striation was critiqued by Isabel, the headteacher at Glen Academy:

> I went to this event where it was announced [that] they were "going to run the creativity session now... We're going to be "doing" creativity, for an hour." Well, I'm going to step out, if that's how you're packaging it. I actually stepped out the room. [Glen Academy, Visit 1,Interview 1]

Isabel's "stepping out" is an instance of teacher resistance through a bodily movement. She literally exits the territory by stepping across the boundary. The stepping out is a nomadic movement, a line of flight and a smoothing of the terrain of thought, a rejection of the sedentary.

Vignette: Fierce fevers and perishing waters

> The pale stars of the morn
> Shine on a misery, dire to be borne.
> Dost thou faint, mighty Titan? We laugh thee to scorn.
> Dost thou boast the clear knowledge thou waken'dst for man?
> Then was kindled within him a thirst which outran
> Those perishing waters; a thirst of fierce fever,
> Hope, love, doubt, desire, which consume him forever
> (Percy Bysshe Shelley (1820), *Prometheus Unbound*)

In the above extract, the chorus speak to Prometheus of the fierce fever, or the desire to know and to create, through which human existence can persist beyond death. Yet that which inspires

and nurtures creativity — hope, love, doubt and desire — is also that which may entirely consume the creator. This final section is about this dangerous aspect of creativity, but also the very real risks of actual fever and death.

En-courage: Fear as *fiere*

> Courage consists, however, in agreeing to flee rather than live tranquilly and hypocritically in false refuges. (Blanchot 1969; cited in Deleuze and Guattari 1983, p.341)

> And there's a hand, my trusty fiere! And gie's a hand o' thine! (Robert Burns (1788), *Auld Lang Syne*)

Fortuna is the conceptual persona who haunts this section. She represents not only luck but also doubt and *virtus*, or strength of character. The following extract focuses on the theme of defence, particularly the notion of defending the Territory of the school from external attacks. It also focuses on creativity as dangerous, and as something that places students and the school's reputation at risk, but which nevertheless must be embraced. There is also discussion of courage, whether this is required by teachers, the entity of education itself, or students.

The idea that creativity is dangerous was a *ritournelle* that resounded throughout many of the research conversations. For instance, in this extract, James at Burgh considers whether creativity is a risk worth taking:

> James (English teacher): We can't focus on what does make a difference, which is creativity. [But] it is a managed risk. It's not going to ruin children – the system is already ruining them! [Burgh High, Visit 1, Interview 1]

James thinks that pursuing a risky creativity agenda cannot produce any more harm than is already the case. Claire, depute head at St Drostan's, regarded the stakes as being much higher for schools such as hers:

> Claire: You have to take risks that might conflict with that [attainment] agenda — and hope you're not going to get a leathering with your inspection report. [Joint focus group, St Drostan's Academy and St Medan's High]

The violent metaphor of "leathering" (i.e. a beating) conveys a sense of actual harm being caused to the school and its staff by inspection reports. Schools operating in a more precarious context of high levels of socio-economic deprivation, as is the case for St Drostan's, and who are battling to maintain a good reputation, have understandable fears about such risks.

The discussion continued, as the teachers considered the risks posed by creativity:

> Mhairi (drama teacher): You need to be confident to defend your corner.
>
> Matthew (headteacher): Our assignments are not teacher-led, they're pupil-driven. But we're finding that grades are coming back lower [Joint focus group, St Drostan's Academy and St Medan's High]

It is the students who drive the assessment at St Medan's High, according to the headteacher. Letting the students be in charge is the risk that Matthew believes is necessary to achieve a genuinely creative learning experience. However, the school had suffered losses: students' grades in externally assessed courses are "coming back lower".

Back at Burgh High, James explained that he was embracing this risk by arguing for the introduction of a more creative approach throughout the school. He believed that it was worth risking a decline in attainment in the short-term while the new approach was embedded. The danger that creativity poses to attainment also resounded in the focus group in local authority E:

> Gail (early years): ...When we introduced play-based learning, yes, the attainment did go down. But we're hoping by end of [primary] 2, that they will show benefits from that experience.
>
> David (education consultant): Well, it's more [than that]. It's more [that] I have confidence in kids' innate creativity.
>
> Robert (secondary school teacher): This is about policy makers, and the accountability. We all need to keep HMIE happy, *and* have creative approaches. But what's really important is to help [students] thrive, and that's actually meaningful. [Local authority E, Online focus group 1]

This discussion clusters around the idea of what really matters in education and in life. Tensions arise when David critiques Gail's line of argument, stating that attainment measures are not important ("well, it's more than that") and implying that this is a limited way of thinking about creativity.

For David, intense desire is essential: you have to believe in children and in their creativity in order to produce change. This is an insistent desiring-production throughout David's comments and is evidently something that he passionately believes in. As an independent consultant working within a range of education settings in the local authority, David is in the vanguard of the creativity war-machine, and his passion for creativity is no doubt part of what makes him and

his services appealing to schools. In this discussion, attainment is placed in direct opposition to innate creativity. This suggests the influence of ideas (U) regarding creativity and education which originate from Rousseau (discussed in chapter two). In this desiring-production, creativity is concerned with nature, youth and freedom, and stands in opposition the old, adult-constructed, fallen world of institutions and control.

A line of flight is produced by Robert, who recognises that schools need to respond to State policy desiring-productions about creativity while at the same time meeting the requirements of inspection regimes and attainment agendas ("the accountability"). However, what really matters is that the students are thriving.

Robert's focus on thriving, and the theme of embracing the fear regardless, summoned a *ritournelle* in my mind. In a session at the Hay Festival 2020, *The Beginning of the And*[67], the author Ali Smith talked about continuance and the gifts of coronavirus. This might seem inappropriate, for how can something that has caused so much suffering be thought of as bringing gifts? Smith explained that one of the gifts of the virus was that of revelation, in that we realised who and what really mattered to us. She spoke of connection, and hands, and creation: Michelangelo's depiction of the energy — creation— that passes from the hand of God to Adam in a flicker of lightning. Then she quoted from Burns*: And there's a hand, my trusty fiere! And gie's a hand o' thine!* Fiere is pronounced like the English word "fear". It is a Scots word meaning friend. We are afraid to touch because of spreading the virus, but we will be able to one day, because we will continue. This inspired the nomadic pedagogical principle of continuance (chapter seven), but also prompted me to think of how fear can be translated or transformed into *fiere*, or a friend, as Robert suggests.

Pause and continuance

During the great pause of the coronavirus lockdown, I observed an emergent discourse emanating from the creativity war-machine. This is "creative bravery", presented as a response to the fear generated by the pandemic. It involves a desire to reset society and do things differently.

In a focus group which took place online, the local authority E participants reflected on the wider learning that could potentially arise from the experience of lockdown:

[67] Hay Festival 2020. Available: https://www.hayfestival.com/p-16781-ali-smith.aspx?skinid=16 [Accessed: 25 May 2020]

> Lewis (education consultant): Why as a society should we not be saying, “we don’t need government ‘cos they’ve totally ballsed up”? We seem unable to jump into that next point, and it’s at that next point where I think actually the creative bravery emerges. I think it's our responsibility, because the likelihood is schools will not ask those questions. [Local authority E, Online focus group 1]

This was the first time that creative bravery appeared in any of the interviews or focus groups. Lewis’ tone was one of anger, aimed primarily at the government. He also spoke of the deskilling of people generally, and not just teachers:

> Society in many ways has been deskilled to think about some of these bigger issues, which is probably why nobody’s asked the question. See when you get into the level of complexity that that requires, it’s where the managers come in and say, “You don't need to worry about any of this, we’ll make the decisions, because it's operational and it will keep you safe.” And it’s like, *no, no,* but it's happening in every single part of society.

In Lewis’ account, control operates under the guise of acting in people’s best interests. Lewis expresses resistance (“*no, no”*) and uses intensity, repetition and speed, since this was delivered rapidly. His desiring-production of creativity is largely synonymous with critical thinking.

Joanne, one of the two early years practitioners taking part in the group, went on to develop a connection between creativity and care:

> [A teacher] said… that it breaks her heart that she’s actually getting told by certain people that when the children come back [from lockdown], if they fall and scrape their knee, you’re not allowed to give them a cuddle…. And I'm like, “you *what*? you *WHAT*?”... That’s not obviously about creativity, but I would say it’s creative thinking… It’s about putting your brave pants on and saying, “Naw. No way. These children need *love*, they need care, they need nurture, they need warmth”... I do feel for some teachers who are caught between a rock and a hard place. They want to do the human thing, but they’re caught with systems and red tape and policy. [Local authority E, Online focus group1]

This enunciation of creativity connects it to ideas (U) about goodness, nurture, and what it means to be human. Pitted against this is bureaucracy, which prevents teachers from expressing their humanity. Joanne also echoed Lewis’ concept of creative bravery, in that her construction of creativity also involves questioning authority, an act which requires one’s “brave

pants" to be put on. This appears to be an adaptation of "big girl pants" (a phrase which I will admit to actively disliking), which implies overcoming fear by presenting oneself as confident.

Similarly, David identified fear as a blockage:

> With parents [...] fear is the overriding emotion, fear of taking action. People are crippled[68]. They're crippled, and they feel that they can't do anything. There's a paralysis. There's a fear of *life*. They're not thinking about the purpose of education, they're not thinking about creativity. It's fear of life.

David's concern here is that creativity will be blocked due to people's inability to think about anything other than immediate survival. He understands this as an embodied fear: a paralysis. Lewis, however, identifies the revolutionary potential of the pandemic, and he "becomes" the war-machine in simultaneous deterritorialising and territorialising mode:

> Lewis: I just think it's interesting, and maybe it's our fault with our role as creatives within this system, that we don't seem to be bold enough to ask the question "do we still need schools?'" Because actually, what we've discovered is that we might […] not need these things called headteachers or teachers anymore […] Why have we not asked that question? When there's been so much disruption, so much questioning of these systems that we work within, why is it that we haven't asked the question 'do we still need these places?' Because at the moment, we've all survived without them. [Local authority E, Online focus group 1]

And a short while later in the discussion:

> Lewis: It's, like, do we still need teachers? Right? And this is really problematic.
>
> Joanne (early years practitioner): Oh, I love your bravery.
>
> Gail (early years practitioner): I'm going to be brave, but I'm going to disagree with you. I think we still do need teachers, but it's what we perceive *is* a teacher.
>
> Lewis: Yeah, yeah, yeah, no, totally, totally. I'm not saying we don't need teachers. But, do we just need teachers in a school? […] Why is there not a psychiatrist in every school, why is there not a social worker in every school? Why is there not an artist, a play worker, a doctor, a nurse, a whoever, whoever, whoever and whoever? […] Do you need thirty children in a room with one adult? You don't, you just ***don't.*** So the question becomes, then, well, what model could you put in place that allows other professions to be in a building, not called the school, to ensure children are learning, they're happy, they're healthy, all those? But we're not having those types of conversations.

[68] The use of the term "crippled" has been critiqued as ableist. However, this was the participant's term, and I have quoted verbatim.

There is intensity and repetition in Lewis' argument ("why is it that we haven't asked the question?"; "do we still need...?"; "yeah, yeah, yeah"; "totally, totally"; "whoever, whoever, whoever and whoever"; "you just *don't*"). These rhetorical devices aim to persuade through conveying an impassioned desire, which in this case is to demolish the education system and replace it with something new. Although Lewis modifies his position regarding teachers after Gail disagrees with him, he still advocates revolution. Indeed, he described himself and the other creativity advocates he works with as follows: "we're punks." This has clear echoes of Cole's (2008) typology of war-machines, as will be recalled from chapter three.

Summary: Braiding the disunited tendrils

> It is possible that we think we have found a solution; but a new curve of the plane, which at first we did not see, starts it all off again, posing new problems, a new batch of problems… The plane takes effect through shocks, concepts proceed in bursts, and personae by spasms. (Deleuze and Guattari 1994, p.82)

A rhythmic insistence can be sensed within and across the plateaus presented above, as connections are traced between the utterances of participants located in different places across Scotland, working in different contexts and speaking at different times. Revisiting a school more than once, or meeting the same person for a second time, resulted in further shifts in perspective.

Across the interviews and focus groups, teachers expressed their exhaustion and frustration, and used vocabulary that invoked themes of war and oppression. This had a strong impact on me, and it no doubt affected my interpretation of their words. Most of the fieldwork took place before the pandemic, which begs the question: if teachers were feeling constrained and demoralised prior to the lockdown, what must they and others working in the education sector be experiencing now? If this seems negative, it should be noted that teachers also referred to joy and pride in their work, made many suggestions regarding creativity and assessment, and engaged in complex discussions which ranged far and wide. It was clear that they cared about their work, about education more broadly, and about their students.

Assessment, creativity, curriculum, teaching and learning overlapped each other endlessly to create seemingly impassable rhizomatic knots. Teachers sometimes struggled to articulate their thoughts in relation to these knotted issues, but such difficulties are perhaps to be expected,

given the contorted nature of education policy notions of creativity. There are many definitions of creativity circulating within education, and each definition contains multiple flows, some of which are contradictory. Moreover, the terminology is in constant flux, and no doubt the terms used in this thesis will soon be replaced by newly fashionable policy mantras.

As discussed above, readers will bring their own interpretations to the data presented here; they will see things that I did not, or would have emphasised different aspects of the conversations. Yet this is the analysis I have undertaken, and this is what I saw in there. I introduce doubt and self-questioning by exploring the strange and troubling aspects of the research encounters. I experiment with different tones and angles, and these may not chime with some readers. As Honan (2001, p.37) remarks, "[s]omeone else reading the transcripts may wonder at my inclusions and exclusions, my emphases and discards". This analysis is merely one plausible reading, to echo Honan's (2001) phrase.

Deleuze and Guattari (2017) intended *A Thousand Plateaus* to be an "open system" which would linger on and fold into the minds of those who encountered it. As Massumi explains, "elements of it… will weave into the melody of [readers'] everyday lives" (2017, p.xii). My hope is that what has been discussed in this chapter will provoke thought and will continue to resonate afterwards.

Plateau 4: The [Potential] Victory

Chapter 7: A way out

Introduction

> Whenever one does something it is also a question of moving on from it, both staying in it and getting out of it…. One has to get out while remaining within. (*Gilles Deleuze A-Z, 2011*, C is for Culture)

This chapter looks across the vignettes and plateaus in which the research findings were presented and draws together some of the themes that resonate through them. It weaves these into an argument for a nomadic creative education that supports teachers and students to develop creative processes. It comprises seven transversal principles, which echo the themes that run throughout the thesis: guide, desire, caesura, provocation, pickaxe/torch, difference, and continuance. The emphasis is on assessment *for* creativity, rather than *of* creativity. This supports an expansive and critical approach to understanding creativity, rather than reducing it to a narrow definition.

The vignettes *Content, Content, Content!* and *Tsunamis and Terminators* discussed how creativity movement discourses present teachers, knowledge, curricula, assessment and subject domains as inherently uncreative and regressive. In contrast, this study articulates a case for the vital role of all these factors in nurturing creative processes. However, a nomadic creative pedagogy requires an agentic, rhizomatic transformation of teachers and students, understanding them as teacher-student war-machines operating within ethical, aesthetic and political ecosophies that are conducive to meaningful, value-orientated teaching and learning.

Although I use the metaphor of the voyage, to use Deleuze's term (2011), this conclusion does not represent an arrival at a terminus. Rather, I consider what has been explored through this research, and how the findings begin to respond to the research questions and aims. "Begin to" recognises that knowledge is never complete and final, but is a constantly forming and reforming ensemble of multiple flows. Nevertheless, there are points of relative stability within the flux. "Respond to" acknowledges this epistemological position, rather than claiming to have found definitive solutions. This reflects an understanding of education as a desire to escape

from that which is already-known (Colebrook 2008). The nomadic is uncertain, not given or prescribed, as is the case with State/Royal science. As such it moves towards the generation of more problems, rather than neatly presented solutions (Colebrook 2011). Despite this, some practical recommendations are nevertheless proposed.

To recap, the research questions posed at the start were:

- What are the notions of creativity in current educational policy in Scotland and how have these evolved?
- What is the relationship between summative subject-based assessment and creativity?
- What differences, if any, exist across different subject domains in relation to creativity and the assessment of creativity?
- What are the curriculum, teaching and learning implications of the summative assessment of creativity in subject-based assessments?

The aims of the study were to develop an education theory-informed definition of creativity; explore pedagogical and assessment practices across different subject domains; and develop principles in relation to the assessment of creativity to inform future policy.

In terms of structure, all the questions and aims are addressed, but are woven together rhizomatically. I begin with notions of creativity in Scottish education policy and connect these to an emergent definition, or rather an approach, to creativity. This leads to the nomadic assessment principles and practices. In discussing these, I drawn on key points from the findings about the relationship between assessment and creativity, and the teaching and learning implications arising from this. I conclude with some macroscopic and socius-level policy recommendations.

Desiring creativity: *ritournelle*

The thesis began by exploring how creativity has been defined in relation to education, and what affects these definitions produce. Using the notion of the *ritournelle* (Deleuze and Guattari 1988/2017), I briefly repeat some key points from this discussion, but through a localised variation on the theme. Chapter five proposed that the current definition of creativity in educational policy in Scotland is an ensemble comprising many different, and sometimes conflicting, desiring-productions about the nature and purpose of creativity. Even more

confusingly, each of these various desiring-productions are themselves multiple. Using Guattari's (2013) diagram, this can be expressed as (T→F→U→Φ): the definition of creativity in the territory (T) of Scottish education reflects contemporary social and economic fluctuations (F), and these interact with various, sometimes contradictory, ideas (U) about education and the future, which are modulated through local policies and practices such as curriculum guidance documents, assessment models, PowerPoint presentations delivered at events, examination regimes, course syllabi and so on (Φ). Throughout the chapter, I identify rhizomatic knots (de Freitas 2012) or impossible tangles which bring attention to power relations, echoing the approach taken in the literature review.

The State/Royal definition

The method of geophilosophical cartography (Deleuze and Guattari 1988/2017; Semetsky 2008) revealed how understandings of creativity are haunted by ideas from the past. The term creativity only entered popular usage from the 1930s onwards (Kristeller 1983). Historically, the term innovation was used in Scottish education policy and had equal value with the arts. Innovation was defined in relation to the social and economic progress of the nation and the moral development of the individual (Crawford 2007).

This notion of innovation as essential to the survival of the nation converges with contemporary globalised policy imperatives on the necessity of creativity. The insistent messaging is that creativity is part of a suite of essential 21st-century skills[69] for the workplace and that education systems must emphasise these skills. Hence, the State/Royal Education Scotland definition of creativity packages it as creativity skills, with a clear emphasis on employers' needs. However, this definition is rhizomatically knotted. Creativity is simultaneously defined as an entity comprising four core creativity skills (curiosity, open-mindedness, imagination and problem-solving) *and* as one of three distinct, World Economic Forum-defined meta-skills. The other three meta-skills are problem-solving and critical thinking, which are ranked above creativity. The definitions of the four core creativity skills confuse matters even further. For example, curiosity is defined as "being curious". The definitions are thus collapsed into each other, producing a sense of meaninglessness.

[69] Lucas (2019) argues that the term "21st century skills" should not be used as it points to the future, yet we are already in the second decade of the 21st century. His preferred term is "transversal skills". I use the term "21st-century skills" since it is a phrase that is widely understood in Scottish education. There is also an implicit critique in my use of the term, since I do not regard "transversal skills" as having any more validity than "21st century skills".

The State/Royal definition may soon reassemble in response to the desiring-productions emanating from the creativity movement war-machine, which is currently active in the territory of Scottish education. Chapter five describes various encounters with the war-machine *en manoeuvre*. A particularly tangled rhizomatic knot in the creativity war-machine critique of public education systems[70] is that education must be reformed as it is based on an obsolete industrial workplace model which inculcates uniformity (Robinson 2015). Schools are ill-equipped to produce students who can demonstrate the creativity required for survival in the workplace of the future (Lucas 2016). However, the war-machine's desiring-production of creativity is entirely shaped by the needs of the contemporary labour market, just as the supposedly old, broken system it critiques was founded on the industrial imperatives of the nineteenth and early twentieth centuries. The creative learner produced by the creativity war-machine is a subject who should not only believe in the capitalist system, but must embrace its desires as their own, undermining the possibility of freely imagining that which is different. This poses the question: can the creative learner envisaged by the creativity movement ever truly become creative?

A nomadic definition

Reflecting the position that creativity needs to be defined in relation to the purposes of education rather than economic imperatives, I developed the notion of a nomadic creative education. This resonates with Deleuze and Guattari's theories about the necessity of freeing thought, desire and creativity, in order for life to realise its potential (Colebrook 2011). The definition has political and ethical considerations at its core. It is socially-oriented, and opposes the commercialisation of public education. This reflects Deleuze's views on the dangers posed to education by corporate interests:

> ... the corporation constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals against one another and runs through each, dividing each within. The modulating principle of "salary according to merit" has not failed to tempt national education itself (1992, p.5)

[70] As discussed in chapter five, it is never clear which education systems are being critiqued. At times the critique appears to be aimed at Western education systems in general, but some European education systems such as Finland or Estonia are also praised (see fig.9). Sir Ken Robinson's critique seems to be aimed at the US public school system but draws on empirical evidence from England. Lucas and colleagues, for example in The Durham Commission report (James et al. 2019), mainly focus on the English state system, and make comparisons between England and other selected national systems, including Scotland. In Scotland, the creativity war-machine uses these same chains of images and words to argue that Scottish state schools are outdated and in need of reform (see e.g., Creative Bravery Festival 2021. Available: https://www.youtube.com/channel/UCpSlF-5ULWzLwGS-_pTHCVA [Accessed: 18 October 2021]).

The importance of the aesthetic and of the role of the arts in nomadic education is attested by Deleuze and Guattari's concept of the "becoming-child" (1988/2017) which unfolds "through writing, to reach a childhood of the world… That's the task of literature. It's becoming" (*Gilles Deleuze from A-Z*, 2011, E for Enfant). Music, visual arts, literature and philosophy are necessary for the becoming-child's emergence. This process always involves consideration of the purposes of the creative work that is being undertaken. This reflects the discussion about moral purposes in the focus group held at Burgh High, discussed in chapter six:

> James: Now, it seems to be a good thing, to be creative, at the moment, but…
> Catriona [interrupting]: Depends how you use it.

Looking across the vignettes, teachers often focused on the overarching purposes of creativity and education. In *Boxes and Horizons*, Isabel, headteacher at Glen Academy, defined creativity and education as being about "what it means to lead a good life". Eleanor, an FE lecturer, used the phrase cornerstones to describe the foundations of education, which she identified as faith, trust, understanding and ambition.

The teachers at Burgh High described a narrow, constrained space for resistance and manoeuvre — "wriggle room". To interrupt this, my definition of creativity emphasises freedom, but through a local *ritournelle.* This is influenced by Barseghian and Kristensen's (2017) notion of the ghost that conveys the rhythmic relations that together constitute the subject, territory, and the grounding that helps the subject feel at home. Hence, I propose an approach to understanding creativity that is situated within the Scottish context, using the alternative concept of the radical makar (Crawford 2007), which acknowledges the interplay of liberty and thralldom (or power and freedom, or control and desire). As Cole (2014, p.81) argues, "educational nomadology is not restricted to local situations; yet this is where the impact of educational nomadology will be at its most intense."

A nomadic schizo-methodology for education: principles and practices

Guattari (2000) describes the ethico-political aim of "an education system able to appoint its own social mediators" (p.34) who can spearhead change. Here, I suggest how it might be possible to weaponise teaching and learning practices (O'Sullivan 2015). This methodology consists of seven related principles which all need to be understood in relation to each other, namely: pickaxe/torch; guide; desire; caesura; provocation; difference/repetition; and

continuance. The practices are those of mapping, tracing and feedback loops, which constitute part of the teacher-student war-machine.

Pickaxe/torch

To break free, we need to dismantle the face of creativity and build anew, and for this we need both pickaxe and torch. The vignettes *Spaghetti and Sellotape* and *Courgettes and Peppers* point to the limitations that arise from an uncritical repetition of policy language (Priestley et al. 2015). My analysis of current trends suggest that teachers and students in the Scottish school system will increasingly find themselves being presented with pre-packaged creativity skills modules, a procession of new apps/online creativity teaching and learning resources, and assessment models which aim to capture students' creative habits. When presented with anything that purports to be about creativity, teachers and students can wield the pickaxe/torch. This is explained above, but essentially it is concerned with critiquing dominant theories and freeing thought so that it becomes possible to imagine alternatives. The pickaxe/torch involves engaging with problems, such as: what am I being asked to do and why? What is the meaning and value of this theory or policy? What assumptions and beliefs underpin it? Are these justified? What affects are being produced by this? Who or what is silenced here? In other words, the tasks of nomadic schizo-methodology are applied to pedagogy itself. Rather than the endless repetition of policy mantras, it becomes possible to articulate something different.

Pickaxes and torches can be used to destroy, or to illuminate and construct. A pickaxe can be used for positive ends, in that it can clear the way for something different to be created; a torch can be used to burn down an entire edifice. Pickaxe/torch is a principle that helped me examine, reflexively, the ways in which the research gave me pause, and prompted an examination of my own views and actions. This is in keeping with the ethico-political orientation of the research and one of the tasks of schizoanalysis: to avoid recoding thought.

In popular discourse, education is often described as a battleground; hence, the concept of the nomadic war-machine is particularly appropriate as it can be used to explore and problematise the idea of education as a war zone. However, it is a concept that faces both ways, Janus-like, towards both striation and smoothing. The war-machine helps to map/trace the creativity movement's movements, and reveals its desire to tear down State education. However, the war-machine is also a vehicle for teachers and students to resist the desiring-productions of both the State and the creativity war-machine. Deleuze and Guattari's emphasis is on active, political

engagement that moves people forwards, rather than being stuck in circles of repeat; hence, I advocate assessment that is oriented towards "doing", or creative practice.

Challenging the dominant construction of creativity involves a micropolitical approach (Calin and Wallin 2014), or fighting small battles, as described by the teachers in the vignette *Worms and Dragons*. For example, teachers might use the creativity war-machine's teaching resources, but encourage their students to consider what might be problematic about being asked to merely emulate the advertising campaigns of multinational corporations.

A more radical approach involves the deployment of the teacher-student war-machine, understood here in the positive sense of "societies of friends, societies of resistance" (Deleuze and Guattari 1991, p.110). This is an alternative to the creativity movement's construction of teachers as the enemies of students and destroyers of creativity. Tactics might include choosing not to use the creativity resources at all, based on ethico-political concerns. Further, creative conversation groups of the sort that were convened for the project could support the development of societies of friends and resistance, particularly if students became involved in these groups. This constitutes one of the nomadic schizo-methodological tasks, which is identifying and removing the codes of control.

Desire

In *Desiring Control,* James discusses the "love of management" and how this constructs a territory where teachers and students act out of fear of being disciplined, or of failing. This is desire as lack. Rather, nomadic creative pedagogy is about learning to live with uncertainty, doubt and precariousness. To support this, we can draw on poetic "goods" (Law 2004) such as beauty, justice, the inspirational and the spiritual, using transformative notions from the radical Romantic tradition such as Keats' negative capability, Shelley's unacknowledged legislator, Blake's revolutionary imagination and Burns' *fiere* (Scots: friend), which translates fear into friendship or connectivity.

This involves a form of courage and persistence that differs from the creativity movement definitions of creative bravery and resilience. Understanding these notions in relation to a nomadic creative pedagogy liberates them from their current policy usage. In the vignette *Boring!*, Emily, art and design teacher at Parkview, explained how closer alignment to the realities of artists' practice has the potential to enrich teaching, learning and assessment

practices. Similarly, Michael's (2015) sociomaterial practices of artists transforms resilience into "the capacity to sustain practices that are emergent and constantly unfolding [as] a form of knowing-in-practice" (2015, p.253). Thus, resilience is freed from being a form of compliance, a disciplined habit, and is instead related to practices of pause, continuance and disjuncture, the interplay of which produces tensions and "the ability to persist in the face of not-knowing" (ibid.). This represents a move away from the deadening certainty of the creativity movement's desiring-productions towards a space where educational questions can arise.

Guide

Sponge-Child (chapter six) explored a creativity war-machine narrative, which is that creativity spontaneously manifests in children in the absence of the oppressive adult. However, a nomadic creative pedagogy requires a guide. Teachers are allies in the process of grown-up-ness (Biesta 2017) and becoming-people. The teacher and student learn and produce together as war-machine, since:

> [W]e learn nothing from those who say: "Do as I do". Our only teachers are those who tell us to "do with me", and are able to emit signs to be developed in heterogeneity rather than propose gestures for us to reproduce (Deleuze 1994, p.23).

The guide-student relationship is one of apprenticeship on both sides, with the teacher as a master apprentice (Bogue 2013) who "guides [students] in the art of discovering problems, an art that can only be mastered by practicing it" (ibid., p.31). Another inspiration for the principle of the guide derives from Nietzsche, who was a significant influence on Deleuze and Guattari's thought. Nietzsche (1997) wrote about the importance of reflecting on and learning from our educators, even though they can only to lead us to, but not beyond, liberation:

> There may be other methods for finding oneself, for waking up to oneself out of the anaesthesia in which we are commonly enshrouded as if in a gloomy cloud — but I know of none better than that of reflecting upon one's educators and cultivators (p.130).

To understand thinking as creation and to dispel the clouds of confusion, students need teachers to guide them towards freedom. This involves "pulling weeds, removing rubble, chasing away the pests that would gnaw at the tender roots and shoots of the plant" (ibid.), which finds an echo in the language used by teachers in the research conversations about the conditions in which creativity can flourish.

Guide has another meaning: that of the guidebook, which represents knowledge. The creativity movement tends to understand knowledge as content, and content is regarded as inherently oppressive. However, knowledge is necessary for the development of meaningful creative work; and content may also be essential as it represents relative points of stability such as times tables in mathematics or grammar in language, which aide navigation through a smooth territory of thought. Nomads move freely, but they navigate using familiar points within the Territory, such as an oasis or a landmark (Deleuze and Guattari 1988/2017). This stability helps us progress with our journey and avoid becoming lost. As one teacher expressed it in the research conversations, sometimes the dull and rote is necessary in order for creativity to develop.

Caesura

The smooth space of nomadic pedagogy features “relays, intermezzos, resurgences” (Deleuze and Guattari 1988, p.440). The intermezzo is a short break, a connecting instrumental in an opera or similar musical work, while the caesura, the term I prefer to use, can refer to a pause but also a cut. The vignettes *Bells and Buzzers* and *Boring!* explore cuts in the form of interruptions from the bureaucratic life of the school or home. This severed the flow of discussions, with new lines of conversation emerging and diverging, rhizomatically, from what had been happening prior to the interruption. At other times, something was lost, such as a potentially interesting line of thought which could not be recovered. Reflecting on these interruptions during the analysis revealed that these were moments in which that which is different broke through. This is where the principle of caesura derived from: a moment of pause that interrupts a flow and potentially enables new, energetic thought to grow.

Across the vignettes, the necessity of having space or “dead time” to pause and think was discussed. This phrase was used by Peter, maths teacher at Glen Academy, who was sceptical of the need for the constant introduction of “new and shiny” teaching and learning materials. Emily, art and design teacher at Parkview, believed a slowing rather than a speeding up was required, paradoxically, in order to nurture the energy and maturity needed for meaningful creative processes. Hence, the principle of the caesura represents the importance of slowing down, stopping, having time for stillness and quiet, and breaking off in order to restart in a new direction, all of which are important aspects of the creative process.

Provocation

This principle relates to challenge and discomfort, echoing Kirsty at Burgh High's concerns that students should never be too "comfy". Less obviously, it also connects to imagination and the unconscious, which are surprisingly overlooked in the literature on creativity (Drew 2013). In nomadic pedagogy, the aim is to provoke new thought through the creation of ensembles of enunciation that can "'bring to existence' unheard-of ideas and proposals" (Guattari 2013, p.17).

How might it be possible to provoke students to think the previously unthinkable, and can this be achieved in high-stakes assessments? Making examinations more materially-focused was suggested by one of the local authority officers, Fiona, who proposed the use of a table of random objects, which would challenge students to describe a process or idea in a creative way. Assessment as ensemble, or cabinet of curiosities (MacLure 2013), might seem to fit with the theoretical orientation of this thesis, but it would be difficult to achieve this in the context of an examination. Rather than objects which are "given" to students, and which would presumably only result in a limited number of variations on a theme, the cabinet of curiosities or analytical collage assembled by students themselves could be developed as a means of presenting or exploring work as part of a folio.

Continuance

Continuance involves a movement whereby we interrupt the already known and establish a transversal connection to elsewhere and to the other. This inspired by Deleuze and Guattari's discussion of the way in which everything links through the "logic of AND" (1988/2017). Using the etymological approach advocated by author Ali Smith in her meditation on the word "and", (Hay Festival 2020), the roots of "and" include *andi* (Norse), meaning breath, spirit, or ingenuity; and *anima* (Latin)—spirit, soul, energy, ingenuity. Ingenuity, spirit, energy, and the soul are thus all connected to a poetic and nomadic understanding of education as a "leading out of the soul" through connecting to that which is different (Colebrook 2008).

This leads to consideration of how creative projects can meaningfully connect subject domains to become genuinely interdisciplinary. Guattari describes this as the potential for a "transdisciplinary" ecology (1989). Some examples of how this might manifest arose in the vignette *Ticked Off*, in which Laura discussed how she drew on the two subjects she specialises in, media and English, to support students to develop rich creative practices which reached across both subjects.

Methods/relays for nomadic creative assessment

The literature review explored the dominance of assessment practices based on the measurement of creative potential. These notions exert a powerful influence on assessment practices, and they fit well with habits-based new curricular models (Reeves 2013). These models require students to demonstrate habits assumed to be associated with creative potential.

In the vignette *Courgettes and Peppers*, education professionals expressed the view that defining creativity was largely an irrelevance. However, the definition of creativity is important since assessment practices are shaped by what creativity is deemed to be. Rather than assessments that focus on whether students display the habits of the creative learner, the focus should be on creative practices. This shifts the focus to the creative work that is "becoming" through these processes, rather than constructing the individual as "strong" or "weak" at creativity. The actual form of that such practices take depends on factors such as the domain context and the purpose. Practical examples from the literature include Harrington's (1990) creative ecosystems approach and Blamires and Peterson (2014) enablers of creativity model (see figs.1-2).

Map/trace

The model created by Charlie (discussed in *Beyond "Big" and "little"* and *Eating the moon*), music teacher at Parkview, involves teachers and students forming a rhythmic ensemble for the creation of music compositions. Unlike constructions of students' creativity as something that is oppressed by teachers, this approach is informed by a belief in teacher and student agency. Charlie's model involves tracing movements through different spheres, namely: the sphere of environmental factors, which include time and space; and the sphere of agency, in which ideas about teaching style, knowledge of different composition theories, and what he calls student "habitus" circulate.

The model envisages a continuous rhythm of feedback loops from teacher to students (which encompasses individual and group work, and peer feedback) and from students to teacher, the loops running between the different spheres. Herzogenrath (2009) argues that Deleuze and Guattari's vital materialism dispenses with "either/or" ways of thinking and instead focuses on feedback loops (ibid.). As such, feedback loops are consistent with a nomadic approach to assessment for creativity.

Charlie emphasises creative process rather than outcome, and bases the model on an understanding of formative assessment as being more than comments about next steps. This is a curriculum-making and professional enquiry approach that is non-instrumental and non-arboreal, and is one example of how notions of agency and ecosophy can support teachers to develop their own, meaningful assessment principles and practices, informed by domain-specific expertise.

Emily, art and design teacher at Parkview, suggested that the qualifications agency should adopt a more expansive approach to the sort of materials that can be submitted for assessment. Sketchbooks, for example, can evidence students' creative processes, provide a reflection on the creative voyage, and help students identify what might be required to progress with the support of the guide. This is assessment freed by being thought of in terms of geophilosophical cartography, a map that is traced by the agentic teacher-student ensemble in the process of creating knowledge. Even those projects which do not come to fruition are still a voyage in which students' thinking has travelled, and can be used to analyse where and why the process stalled or became impossibly tangled, and might restart at a future point.

The idea of mapping and tracing creative voyages is also inspired by the creative process maps created by Lubart and colleagues (Barbot et al 2016). Applying this to a nomadic understanding of creativity and assessment requires several modifications, however. Lubart's approach classifies students as "high" or "low" creatives. In this adaptation, there are only tales of voyages, some of which build up to a crescendo and some of which pause.

Policy recommendations: macroscopic and socius

In an ecosophical understanding of creativity and assessment, it is not only teachers and students who need to act. Policy makers, local authority officers and other stakeholders in the macroscopic and intermediary (*socius*) spheres (Guattari 2000) can also take action to free their understandings of creativity from the dominant discourses.

The first policy recommendation is that Advanced Higher can provide a model for reforming National 5 and Higher qualifications. As part of this process, a review of the marking panels and procedures for National 5, Higher and Advanced Higher should be undertaken. Specifically, the marking panels for Higher Art and Design and Higher Photography needed to take better

account of contemporary art practice, for instance by including practising artists. Teachers' experiences of the marking process for Higher suggested that it was akin to a relentless production line, unlike the experience of marking Advanced Higher, which was a collegial, professional learning experience. Across the findings, there was a view that the project-based approach in Advanced Higher could be replicated at National 5 and Higher. Rather than constantly constructing new assessments, it is possible to "build a bridge out of what you have available to you", as Callum at Lochside expressed it. The rhizomatic knot in evidence here is that despite calls for more creativity throughout education, opportunities for creativity are constrained by approaches to assessment which do not reward risk or learning as personal discovery and exploration.

The second recommendation urges all involved in education to cast a more critical eye on what is presented as creativity by educational consultants and entrepreneurs. The creativity movement, or war-machine, is increasingly successful at gaining access to schools and to public funding. This is problematic in terms of democratic accountability (Williamson 2018; Hogan 2016), but also in terms of the implications for children and young people's development as critical, active citizens. An examination of creativity war-machine materials and initiatives (chapter five) revealed that some of these resources encourage teachers and students to replicate the marketing strategies of multinational corporations. Resources such as the creativity manifesto (Glaveanu et al. 2019) or the ironic infographic I present below can support resistance to this type of insistence, as could a renewed emphasis in policy and in initial teacher education on professional enquiry.

Claims about creativity that emerge from the sea of grey literature also need to be treated with greater criticality by policy makers. Robinson (2015) and Lucas (2016) make strong assertions about the value of creativity, but provide little in the way of supporting evidence (Cremin and Chappell 2018). An exclusively pro-social model of creativity is actively and unquestioningly promoted within the territory of education, yet there is considerable evidence that creativity in some domains is associated with negative or non-social personality traits. For example, a mapping of students' creative processes by Lubart and colleagues (Barbot et al 2016) references frustration, dissatisfaction, stress, sadness, dreaming and destruction (Lubart 2018).

The third recommendation is that is not meaningful or desirable to attempt to measure creativity. In a nomadic creative pedagogy, assessment focuses on the formative and evaluative, and

avoids what Stobart (2008) and Kristeller (1983) critique as reification, whereby "creativity is what is tested by a creativity test" (Kristeller 1983, p.108). I contend that this is what has occurred with the PISA test of creative thinking, which combines competence-based tasks with a psychometric survey, both based on the five habits of mind model[71]. Attempting to measure creativity in the sort of five-minute tasks that feature in the PISA assessment (OECD 2019) is inconsistent with an understanding of creativity as an unfolding process requiring desire, time, space and pause. The test involves responses to prompts which are of questionable suitability for fifteen-year-olds. As discussed above, Amabile and colleagues (1996) have produced a substantial body of evidence regarding the role of motivation in creativity, in which they conclude that extrinsic motivation discourages meaningful creative expression, whereas intrinsic motivation supports it. Further, Vygotsky (1994) argued that adolescents' creativity is concerned with personal expression and emotional development; hence, it is not appropriate to submit work of this nature for summative assessment purposes. All of this suggests that students' creativity is unlikely to flourish in pressurised assessment contexts such as the PISA test. Further, the operationalisation of creativity in the test is problematic; it is not measuring creativity at all, but rather the OECD's own, newly invented concept of creative thinking, which lacks a theoretical or evidence base. Hence, caution should be exercised with regards to the results arising from the assessment[72].

Pragmatically, if Scotland participates in the assessment, teachers and students should be aware that the Skills Development Scotland definition of creativity (creativity is an ability that people are born with) contradicts the PISA definition (creativity is a capacity which is learnt and develops over time). Scotland's overall score in this section of the questionnaire is likely to be low unless this is addressed.

A fourth recommendation is to emphasise that creativity is always located within a domain which requires specific knowledge (Wiliam 2013). This brings into question the construction of generic creativity skills, and the modules and assessments which follow from this construction, and which are widely promoted in Scottish schools. These are based on competency-based notions

[71] ACT Holistic Framework. Available: https://www.act.org/content/act/en/k12-educators-and-administrators/college-and-career-readiness/holistic-framework.htm [Accessed: 12 January 2021]

[72] It is quite possible that the PISA assessment has evolved yet again since this thesis was written. The constant shape-shifting and reassembling of the PISA policy desiring-machine, along with the continual introduction of new terms, requires national education systems to scramble to keep up with change, which is ultimately an impossible task as the horizon of the creative future keeps receding from view.

of creativity as a generic skill that can be transferred between domains. The difficulty with this is that competence-based approaches tend to devalue that which may actually be essential for fostering students' creative work, namely domain-specific knowledge, judgement and reflection (Reeves 2013).

Rather, creativity needs to be grounded in a point of relative stability and cohesion before it can "become". This is also the position in the recent manifesto by a group of leading creativity researchers (Glaveanu et al. 2019), which argues that creativity is always situated and contextualised. Hence, the creativity that is promoted by the creativity war-machine is also situated, although this is not made explicit: it is creativity that derives from the domains of entrepreneurship, marketing and design, and there should be greater clarity that this represents just one specific approach to being creative.

A fifth recommendation concerns the assessment of arts courses. Greater emphasis should be placed on process, in recognition of the importance of creative practice. However, this needs to be positively rewarded by markers and better reflected in syllabi. Teachers at Glen Academy, St Drostan's Academy and St Medan's High described how coursework submitted for arts-related Highers and Advanced Highers was being returned with "disappointing" grades which did not match their professional judgements about the quality of the work. The teachers believed that this was discouraging students and parents from opting for expressive arts subjects. The depute head at Glen Academy explained he was reluctant to encourage personal journey projects for Photography and English in case these were deemed insufficiently academic.

The sixth recommendation is to rethink the apocalyptic imagery that features prominently in policy narratives. Across the vignettes, teachers used metaphors of violence, suggesting feelings of intense pressure and of being under attack. Some described their sense of self and purpose disappearing, a loss of joy, and a desperate need to find an escape route out of teaching. Constructing creativity in such a way that it becomes another source of stress for a profession that is already under considerable strain seems unethical. The impassable rhizomatic knot here is that, as discussed across the vignettes, fear is not conducive to creativity, yet this policy discourse inculcates anxiety and panic.

I was inspired to create the ironic "Nothing is creative" infographic (fig.31) in response to the "Everything is creative" visual (discussed in chapter five). Another influence was the

provocatively titled *Culture Is Bad For You* research project (Brook et al. 2020). This challenges the notion that culture is an inherent good, and argues that the cultural industries in the UK are dominated by elites. If the current mode of organisation in the creative industries is not transformed then, the authors contend, "the creative sector damages us all as it strengthens the structural inequalities that it imagines it tears down" (ibid., n.p.). There is an obvious comparison with an argument expressed in this study, namely that creativity in control society is a deception, and that the notion of what it is "to be creative" needs to be liberated from entrapment within policy lines of articulation. By using a similarly to-the-point and provocative approach, I hope to bring attention to my key arguments and recommendations, and generate new thought. As Drew (2013, p.65) argues:

> I want to say something to policy makers… to ask them to think about openings rather than closures, possibilities rather than procedures; and to consider what we need to think about what is yet to come. I am content in knowing that they may not listen since they have ignored far more important people than someone as insignificant as me but I will speak all the same.

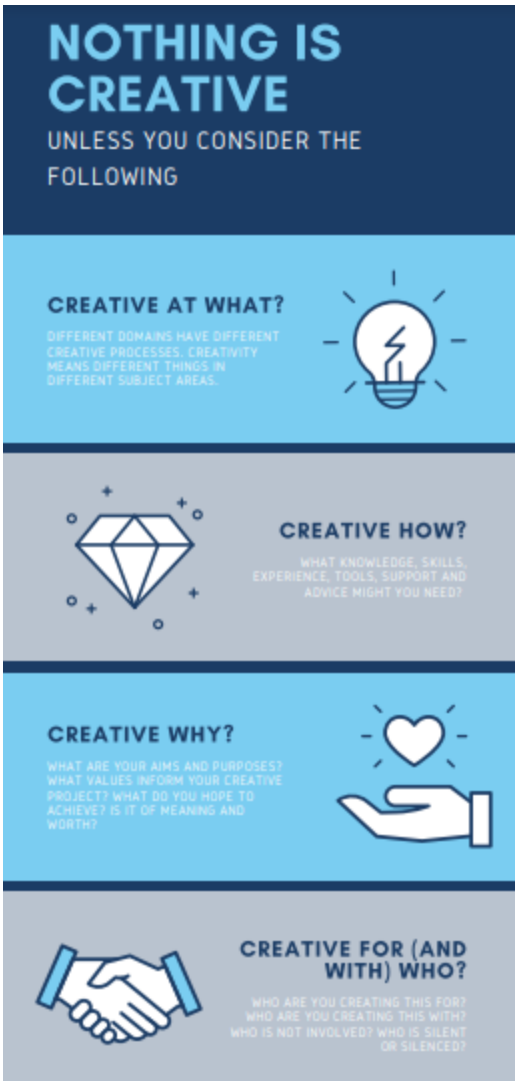

Figure 31: "Nothing is Creative" ironic infographic[73]

The pedagogical questions posed in the infographic (creative at what? Creative how? Creative why? Creative with/for whom?) may seem overly simplistic, but this move towards problems rather than answers is more liberating than attempts to nail down what creativity "is". However, if declarative statements about creativity are required, a bullet-point list, paraphrasing from Glaveanu et al.'s (2019) manifesto, may help:

- Creativity is at once social, material and psychological;
- Creativity is culturally mediated and is about creative action: making and doing (and not just potential);

[73] Made with canva.com

- Creative action is relational and ecosophical;
- Creativity is about meaning and value (leading to ethical and moral considerations: which values? Whose values?);
- Creativity is socially orientated and socially responsible (and thus may involve resisting dominant notions, including those about creativity itself);
- Creativity is dynamic and not fixed (it is contingent and emergent);
- Creativity is situated and specific (creative processes will differ according to what is being undertaken and the domain in which this is located);
- Creativity is concerned with power (and also resistance; attention should be paid to the dynamics of control);
- Creativity is about both quantitative and qualitative paradigms (it should not be assumed that what is measured is all that is of worth);
- Creativity is not only about the new (revisit the old, rather than endlessly produce new definitions, resources, models and policies).

Limitations and challenges

Translation

Applying Deleuze and Guattari's theories to this study was not without its challenges. In particular, there is a need to translate difficult concepts in a way that makes the research accessible to a wider audience. The topic itself — the creativity-assessment relationship — is also complex and confusing, certainly with regards to how this dynamic is described in education policy, and this adds yet more layers of difficulty to the task of interpretation. Further, I acknowledge that my understanding of Deleuze and Guattari's philosophy, and the application of this to an empirical study, is no doubt imperfect. I have played around with the concepts I borrowed from them in a way which I hope reflects their imperative to be creative with theory. As Buchanan (2011, p.8) argues, we should read Deleuze and Guattari with a view to:

> identifying weaknesses in their work and to bringing forward something new and useful to our own purposes, even if the authors in question would not recognise themselves in what we do with their thought.

To help the findings reach a wider audience, I translated the main points and recommendations into an executive summary for policy makers and those interested in education more generally (appendix D). This strips out the theory and uses lay terminology. This issue of translation is also part of the reason why I present the findings using vignettes, re-presenting them as stories

and avoiding the overuse of theoretical language. Hopefully, this makes the analysis readable and comprehensible.

The seven pedagogical principles are described using unusual terms such as pickaxe/torch. This is not intended to be off-putting; rather, the aim is to be thought-provoking. I hope that the way I discussed these principles within the thesis makes their purpose clear: namely, they are conceptual tools with both negative and positive applications. They support the tasks of pulling down the education policy edifices of creativity, and illuminating the activities of the creativity war-machine as it spreads across the globe. They also equip teachers and students, the nomadic teacher-student desiring-machines, to build their own projects.

Reflecting on the methodology I constructed, it could be argued that, like some of the new materialist or post-qualitative approaches that influenced my thinking in the early stages of the project, it is perhaps too nebulous. I drew schizoanalytic maps of the participants, based on Guattari's fourfold diagram, and if I had included these in the thesis, they might have helped address this potential criticism. However, I felt they lacked artistic merit. I could have worked with an artist or designer to create better quality versions, but there was no time or budget for this.

The methodology could also have drawn on other concepts from Deleuze and Guattari's repertoire. For example, the fold is an image of thought that is concerned with the production of subjectivity, and can be deployed to explore "one's relation to oneself (or, the effect of the self on the self)" (O'Sullivan 2010, p. 107). It involves notions of contortion and twisting, which is relevant to an analysis of convoluted policy constructions. It could also help to develop the teacher-student war-machine concept, since the fold has "explicitly ethical and political dimensions…the emergence of new kinds of struggle inevitably also involves the production of new kinds of subjectivity, or new kinds of fold" (O'Sullivan 2010, p. 107). The concept of fabulation is mentioned briefly, but might be expected to feature more prominently, given the research topic. However, fabulation is concerned with creative productions, and would have been relevant if the project had involved analysing creative artefacts produced by students. It is a concept that I have an interest in exploring in future projects which are more explicitly concerned with students' own creative endeavours.

The voices that were most obviously silent in this research were those of the students, although they occasionally broke into the study, as in the vignette *Boring!* Theirs is an insistent silence, akin to a manifest absence (Law 2004). A next step would be a study into young people's experiences of creativity and assessment, and what might support them on their creative voyages. As Deleuze explains, you cannot liberate anyone on their behalf; they must undertake this task themselves:

> It's up to [young people] to discover what they're being made to serve, just as their elders discovered, not without difficulty, the telos of the disciplines. (Deleuze 1992, p. 7).

Such research could further develop the principles for nomadic creative pedagogy for the people-yet-to-come. This thesis itself also a "narrative of an apprenticeship" (Deleuze 2000, p.3), to echo Deleuze's description of the narrator of Proust's *In Search of Lost Time*: an apprenticeship in understanding the signs of the world, and of memory, love and art (Bogue 2013). In my case it is a rather more modest account of development as a researcher, a process which is ongoing and unfolding.

Limitations

Looking across the findings, it is apparent that some participants feature more prominently than others. This is because I decided to focus on discussions where a boiling point, or a moment of intensity (a plateau, in other words) was reached, and where important themes manifested and significant connections became visible. For example, Fiona and James appear frequently, and this is partly because they almost seemed to be having a virtual debate with each other. This can be paraphrased as Fiona's opinion that "teachers don't know what creativity is" versus James' assertion that "teachers absolutely *do* know what creativity is".

I used less data from Lochside Academy for several reasons. The main issue was that this discussion was much more formal in tone. I had just under an hour with the teachers, in the middle of their working day, with a member of the senior management team sitting in on the focus group (but not participating in it). This contributed to a time-pressured session that was less open and relaxed than the other focus groups had been, as it was subject to managerial surveillance. This impeded the conversation from flowing, and the data was less rich as a result.

Some teachers were concerned that they did "not know enough" about creativity and assessment to make a meaningful contribution to the research. However, what arose out of this

not knowing was just as interesting as the confident statements of those who were certain that they did know.

I hope I have done justice to the range and sophistication of the views expressed by the participants. They may find it strange that I have focused on small, seemingly unimportant incidents such as bells ringing and students appearing, but this to me is part of the haecceity, the atmosphere or “thisness”, of each specific research encounter. It also represents a methodological concern with not landscaping the research and presenting it as seamless and problem-free, when it was not. This approach also enables me to reflect on my own development as a researcher; for instance, Dana’s comments about me talking too much in the focus group and the interruption by the person from Amazon during Laura’s interview, which resulted in me directing the discussion away from what *she* had wanted to talk about.

I am grateful to local authority E for their support with the creative conversation focus groups, which brought together a wide range of education professionals. This stretches the territory of the research beyond the boundaries of the Senior Phase of Curriculum for Excellence, which was intended to be the focus. However, I believe this decision is justified, in that the creativity agenda runs all the way through the different strata of education. Further, this group enabled me to involve education consultants in the discussions, and I was keen to gain an insight into what they are doing, and what they desire. Although my analysis of the creativity war-machine has a negative tone, I sympathise with some of the views expressed by the education consultants, particularly in relation to their critique of the way that school education is currently organised. As they advocate criticality and reject passive acceptance of the status quo (and aimed some criticism at me also, which I have acknowledged), I hope that my analysis is received as provocative but fair.

Research in a time of pandemic

The fieldwork for the study was scheduled for 2019-2020, and the writing-up was planned for 2020-2021. However, this turned out to be a time of great interruption in the form of the Covid-19 pandemic. Given the suffering resulting from the coronavirus outbreak, it feels petty to complain about the difficulties I faced in trying to undertake research during this time. Nevertheless, the pandemic had a profound impact on the project.

The most serious issue was that, due to national lockdowns, it was not possible to undertake fieldwork in schools in Scotland from March 2020 onwards. My plans to undertake classroom observations, interviews and focus groups in schools obviously had to be abandoned. I was extremely disappointed by this. I had intended to spend a day at one of the schools, Glen Academy, to undertake two observations and an interview. One of the teachers asked if I would also give a short talk to his Higher class about what I do, and how I got here. I hoped to be able to "give something back" by talking to the students. My own educational route had not been a straightforward one, as briefly outlined in chapter one, and I wanted to say something about how there are always possibilities. Ironically, this was now impossible.

The most obvious solution was to move the interviews and focus groups online. However, this was not straightforward, as I faced technical problems (unreliable Wi-Fi, inadequate laptop) as well as many interruptions at home, not least of which was major building work being undertaken next door. Although I managed to conduct one online focus group and an online interview, I decided to focus on the data already available to me from the fieldwork undertaken prior to the pandemic. While not ideal, this was the most practical option, and it was also one of the approaches recommended by the main funder, the ESRC, who approved the change.

Caesura and continuance

End/begin

> And therfore humily
> Abyde and serve and lat Gude Hope thee gye
> I will that Gude Hope servand to thee be,
> Your alleris frend, to letten thee to murn,
> Be thy condyt and gyde till thou returne,
> And hir besech that sche will in thy nede
> Hir counsele geve to thy welefare and spede (*The Kingis Quair*)

The thesis has attempted to describe how it is possible to break the spell of thralldom to captivity in relation to creativity and assessment. The dystopian World of Tomorrow conjured up by the creativity war-machine is, in a *ritournelle* which returns us to the *Terminator* films discussed by the participants, just "one possible future". I have presented a case for how teacher-student desiring-machines might form a resistance to this apparatus of capture, and what needs to happen at the macroscopic and intermediary policy levels to foster a less hostile educational environment. However, the co-opting of creativity by commercial interests is not just

concerning; it is, to paraphrase Deleuze and Guattari, a fundamental disaster. If our thinking, from the earliest age, has been colonised by capitalism then we cannot create in any meaningful sense —unless we free creativity from capture by notions of commercial creativity, or Merz (Deleuze and Guattari 1991).

The conceptual persona who haunts this final section is Good Hope, who guides us all and "keeps us from mourning". I hope is that this enquiry has succeeded in being in some way "interesting, remarkable or important" (Deleuze and Guattari 1991). What was interesting? I hope that the words of the education professionals were interesting; I certainly thought they were. What was important? Deleuze and Guattari believe that even though we cannot arrive at truth, it is nevertheless possible to identify that which is untrue. The methodology I developed enabled the identification of false problems and assumptions which can result in irrelevant solutions (Bryant 2020) — for example, attempting to measure creativity, or packaging it as a creativity skills module. Identifying the influence of the creativity movement war-machine as it gains in intensity, occupying and reshaping public education is, I believe, important. I hope I have made a persuasive case for an understanding of creativity that is rooted in consideration of moral purposes — "what it means to live a good life", as one teacher phrased it — and as something that is inspiring and transformative, rather than being collapsed into the mundane. I hope I have also made a case for why teachers are not the enemy, but rather can form ensembles with students to "re… create" and affect change. I do not wish to speculate whether anything could be considered remarkable. The thesis is itself an interplay of creativity and assessment: through becoming research desiring-machine, I created something and now it too will be summatively assessed. I hope that what has been willed into existence here will resonate with those who read it.

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Appendices

Appendix A: Consent form

Version date: January 2019

Participant Consent Form

Reference number:

Research Project Title: Notions of creativity and its place in high-stakes subject-based assessment

	Please initial box
I confirm that I have read and understood the information sheet dated [insert date] explaining the above research project and have had the opportunity to ask questions about the project	
I understand that my participation is voluntary and that I am free to withdraw at any time during the study without giving a reason, and without any penalty.	
I consent to take part in an interview with the researcher and I consent to this interview being audio-recorded. If I do not wish to be recorded, I will inform the researcher of this and notes will be taken instead.	
I understand that all information will be kept confidential and that my responses will be kept anonymous. I give permission for the researcher to have access to my anonymised responses.	
I understand that the researcher may have to breach confidentiality if information is disclosed which suggests that someone may be harmed or be in danger.	
I agree that the information I provide can be used on condition that it is kept confidential and anonymised. The researcher may use summarised information and anonymised direct quotes from interviews that do not identify me or my school in reporting the outcomes of their study. I understand the limits of anonymity as set out in the Participant Information Sheet.	
I understand that all data will be securely stored and accessed only by the researcher. Audio recordings and written summaries of interviews (including quotations) will be securely deleted ten years from last access or publication.	
I agree to take part in this study	

Name of Participant **Signature:**

Date: Click here to enter a date

Name of Researcher Barbara Ann Schuler **Signature:**

Date: Click here to enter a date

Appendix B: Information sheet

Version date: July 2019
Reference number:

Participant Information Sheet

Research project: Notions of creativity: exploring its place in high-stakes subject-based assessment

I am a PhD student at the University of Stirling. I would like to invite you to participate in this research project, which aims to arrive at a better understanding of creativity and assessment within the context of Scottish education. My research is co-funded by the Economic and Social Research Council (ESRC) and the Scottish Qualifications Authority (SQA).

Why is this research being undertaken? This research explores how creativity is understood, taught, learned and assessed within the Scottish education system. In particular, I am interested in how teachers assess creative work, how assessment impacts on creativity, and whether there might be different approaches to assessment which could support pupils' creativity. It is hoped that the research will contribute to informing policy and practice in relation to creativity in the Scottish education system.

Why have I been invited to take part? I am looking to interview teachers at Scottish state secondary schools. In particular, I am focusing on those teaching Highers/Advanced Highers. The focus is not solely on subjects traditionally associated with creativity, such as art and design, and can involve any subject area. I am particularly keen to hear from those who have an interest in creativity, assessment, and who wish to contribute to research.

Do I have to take part? No, you do not have to take part. There is no obligation to do so, and it is entirely up to individual teachers to decide if they wish to contribute to the research. If you do decide to take part, you can withdraw your participation at any time, without needing to explain, by advising me of this decision. Contact me at j.a.schuler1@stir.ac.uk citing the reference number on this sheet.

What will happen if I take part? You will be given this information sheet to keep and will be asked to sign a consent form. This is to provide evidence that you understand the purpose of the study and are aware of your right to withdraw at any time. This form also confirms that the information provided will be treated sensitively and will not be passed to a third party without your knowledge and consent.

You will be invited to take part in an interview, which will last for approximately 1 hour and not more than 1.5 hours. It will consist of questions about your experiences in relation to creativity, with a focus on issues around assessment and encouraging pupils' creativity. If you do not wish to answer a question, you do not need to do so, and you do not have to provide an explanation as to why this is the case.

The interview will preferably take place at your school, or in another public location of your choice.

Are there any potential risks in taking part? There are no foreseeable risks in taking part. Please note that this project is not about assessing teachers' competency or performance in any way.

Are there any benefits in taking part? By participating in this project, participants will have the opportunity to contribute to a better understanding of creativity and assessment in the context of Scottish education. The anonymised findings will be included in a report for the funding partner, the SQA. It is hoped that this project will provide an interesting opportunity for teachers, schools and local authorities to explore different approaches to creativity in the classroom. There will be no incentive payment for taking part in this research.

What happens to the data I provide? Interviews will be audio recorded, with your permission. If you prefer not to be recorded, notes will be taken instead. The purpose of recording is to help ensure accuracy in the transcription and analysis process.

Once the interview has been conducted I will write a summary of what has been said. This will include some directly transcribed extracts (quotations). The summary will be anonymised, and I will replace any identifying information with pseudonyms. Although I cannot guarantee that others will be unable to identify you from contextualising information, I will make every effort to maintain your anonymity in the study.

Extracts from your interview may be used in the publication of: the thesis; conference papers; journal articles; a report for the SQA; and blogs/social media posts. Individual participants and schools will not be identifiable in any of these outputs. I will not collect sensitive personal information about you and will take all reasonable steps to ensure that you cannot be identified from the summaries and any publications.

The University of Stirling is committed to making the outputs of research publicly accessible and supports this commitment through our online open access repository STORRE. Unless funder/publisher requirements prevent it, this research will be publicly disseminated through the university's open access repository.

All the information I collect will be treated as confidential (subject to the limits to confidentiality explained below) and will be securely stored. Administrative data (your name, work history etc) will only be accessible by myself. The data will not be shared with third parties, and will be securely deleted 10 years from the last time they were accessed or published.

Limits to confidentiality: There are certain circumstances under which there is a legal requirement to break confidentiality, for example if you disclose information which gives me reason to believe that somebody could be hurt or in danger. This would not be kept confidential, and I would notify you about the need to share sufficient information to safeguard the health and/or safety of those threatened. Should this situation arise, I will inform my supervisors and further action may be taken if required. If such a situation relates to the safety of children, this would involve following local procedures under child protection legislation, which could involve reporting the information to the relevant authorities for investigation.

What happens next? If you would like to take part in the research, then please complete and sign the informed consent form and return it to me. I will then contact you to arrange dates and times for your interview. The consent form confirms that you have understood what the study is about and that you are happy to participate in the activities described in this information sheet. If you do not wish to participate in the research, then you do not need to do anything further.

Who has reviewed this research project? The ethical approaches of this project have been approved via The University of Stirling General University Ethics Panel (reference: GUEP666). The relevant local authority is aware of the research and supports it.

Who do I contact if I wish to discuss the research further? Please contact Barbara Ann Schuler, Doctoral Researcher, Faculty of Social Science, University of Stirling, Stirling FK9 4LA. Email: b.a.schuler1@stir.ac.uk Tel: 07765026147.

My supervisors are: Professor Mark Priestley, Faculty of Social Science, University of Stirling, Stirling FK9 4LA. Email: m.r.priestley@stir.ac.uk Tel: 01786 466272 and Dr Maureen K Michael, Faculty of Social Science, University of Stirling, Stirling FK9 4LA. Email: m.k.michael@stir.ac.uk Tel: 01786 466135.

Further concerns can be raised with the Dean of Faculty, Professor Alison Bowes. Tel: 01786 467731. Email: a.m.bowes@stir.ac.uk

Thank you for your participation

Appendix C: Topic guide

Interview schedule/topic guide

Teachers (60 minutes)

Questions	Activity
Intros, overview of purposes, informed consent	Ensure informed consent forms are signed; discuss any questions participants may have
Teachers' experiences in relation to creativity	**Teachers' conceptualisation of creativity** What does creativity mean to you? How do you support/foster it in your pupils? Are there are other ways of approaching creativity, aside from what has been discussed? If so – what? (School approach; SG/Education Scotland policy; international orgs e.g. OECD discourse) **Discipline/subject specific issues** What are the specific issues around how creativity is understood in your subject area? **Autonomy/Resourcing/time/external influences** What factors impact on the teaching and learning of creativity/creative work in the classroom? (prompts: inspection, interest of HT, parental influences…) What about pupils' creative work outside of the classroom? What else influences pupils' creativity? (The school environment/culture; socio-economic demographics…) **Imagining different possibilities** In an ideal world – what would you like to see in relation to creativity in schools? What would that look like?
Teachers' experiences in relation to assessment and how this affects creativity	**Teachers' orientation with regards to assessment** What are your views on assessment? Tell me about the current approach to assessment in relation to your subject. What is the relationship between this approach to assessment and pupils' creative work? What works well with regards to this? What might be a better approach? What approaches, models, tools do you use?

	Imagining different possibilities What would need to happen to make a difference to the current situation? In an ideal world - how could assessment contribute to supporting pupils' creativity? What would that look like?

Appendix D: Executive summary for SQA

The main findings are summarised as follows.

Issues arising from the literature review

- In current education policy, creativity is constructed as a transferrable workplace skill. However, creativity is a contested concept, and the literature contains hundreds of possible definitions, including philosophical, theological, artistic and scientific interpretations. Thus, claims about what "creativity is" should be approached with caution.
- Education Scotland's definition of creativity is based on the World Economic Forum's (WEF) assertion that creativity is one of three essential workplace skills for the future. The WEF definition is informed by business concepts rather than by education theory, and as such it takes insufficient account of the purpose of education or notions of ethics, value, meaning and worth.
- Tests of creativity, such as the OECD PISA 2022 creative thinking assessment, are essentially a measurement of the individual's creative potential, which may never be realised. These tests rest on assumptions that:
    - creativity is a disposition or habit that can be demonstrated through an individual's behaviours;
    - creativity is largely synonymous with problem-solving;
    - creativity is a skill that can be transferred unproblematically across subject domains;
    - creativity is generic and is not dependent on subject knowledge;
    - creativity is about novelty (divergent thinking).

  However, all these assumptions have been extensively challenged, and as explained above, definitions of creativity are open to various interpretations. There are fundamental problems with regards to how creativity is operationalised in quantitative analyses such as the PISA instrument. This raises an important question about whether it is meaningful or valid to try and measure a concept that is so difficult to define.
- Although there is an assumption in policy and in the grey literature that creativity is a generic skill, there is considerable evidence to suggest that creativity is domain-specific, meaning that creative processes will differ according to the discipline in which they are located. The packaging of creativity as "creativity skills" which can be delivered in stand-alone modules and short-term interventions runs counter to an understanding of creativity as a process that requires reflection and judgement, and which is woven throughout all subject domains.
- The PISA assessment involves five-minute tasks based on prompts such as story cubes and very basic graphic design tools. These are of questionable suitability for fifteen-year-olds. Further, these time-pressured tasks contradict the understanding of creativity as

something that requires time, space, knowledge and reflection, and which is not necessarily about novelty and efficacy.

- The thesis argues that the focus of assessment should be on creative processes and helping students identify what they want to achieve, how, with who, with what resources, knowledge and skills, and for what purpose. Hence, the role of the teacher as guide is essential, and formative assessment is more appropriate for nurturing and fostering children's creative endeavours.
- Requiring young people to submit creative work for summative assessment produces inherent tensions. This is because young people's creative work is often of a highly personal nature, and it is ethically questionable whether this should be subject to judgement and grading. Further, high-stakes assessment undermines intrinsic motivation, which may be essential for the development of meaningful creative work. The project-based approach in Advanced Higher provides one means of balancing out these difficult issues.
- Many of the claims made about creativity in the grey literature are not supported by evidence (Cremin and Chappell 2018). Theories such as "Big C and little c" (Big or little/everyday/ubiquitous) do not represent the only truth about creativity. While the theory of "little" creativity is challenged in the thesis, this is not the same as dismissing children and young people's creative efforts, since these may play an important role in their development.
- Creativity should be understood as situated and contextualised, but without narrowing down to restrictive and limiting definitions. For example, the "creativity wheels" assessment model is a reductive five-habit model, based on the business theory of habits of mind. In contrast, creativity can also be understood as *overcoming* habitual patterns of thought.
- Creativity is about the transformative and the aesthetic, and as such the arts have a unique role to play in creative processes. However, populist education discourses on creativity tend to privilege STEM subjects and de-emphasise the role of the arts. The conflation of terminology means it may be helpful to distinguish between *creativity* for arts and humanities, and *innovation* for STEM subjects, as per the traditional Scottish distinction between the makar (arts and crafts) and the innovator (science). Both definitions emphasise doing and making, namely the process itself, rather than creativity as a potential which may never be actualised.
- In policy narratives, creativity tends to be presented as an inherent good, yet this overlooks the "dark side of creativity": innovations and creations that are aligned to unethical or solely commercial purposes, and which do not take account of wider societal good.

The views expressed by the teachers and other education professionals about the relationship between creativity and assessment is summarised as follows:

Specific issues relating to the current qualifications system

- National 5 and Highers present specific difficulties in relation to nurturing students' creative work. Teachers described being driven by the assessment requirements, resulting in insufficient space and time to support students to reflect and to explore creative projects of meaning and worth. In particular, the current exam regimes provide limited capacity for students to develop work that has personal meaning. When students did decide to undertake projects which had personal meaning, they risked being marked down for being insufficiently academic. This not only has a negative impact on individual students' prospects, but also places pressure on teachers and schools in terms of attainment levels and inspection demands.
- In contrast, Advanced Highers were perceived much more positively by many of the teachers and were cited as a successful model which provides students and teachers with sufficient space to develop in-depth, meaningful, project-based approaches to creative work. Teachers believed that the Advanced Higher model could be replicated across the other qualifications.
- The current approach to marking is also perceived as problematic, particularly in relation to Highers. Teachers described this as a highly-pressurised process which does not allow for sufficient professional reflection and discussion. Moreover, there is a view that Higher marking teams favour traditional and more conservative approaches to creative work.

Wider issues impacting on the relationship between creativity and assessment

- There is an inherent tension between fostering students' creativity on the one hand, and the pressures associated with high-stakes summative assessment on the other.
- Assessment practices exist within an overarching education system which is characterised by bureaucracy and "accountability". This hinders students' and teachers' capacity for creativity and impacts negatively on the achievement of both teacher and student agency, resulting in a stultifying environment that is not conducive to the development of mature, meaningful creative work.
- Constant, rapid cycles of educational policy change create additional pressures and stresses. Teachers described feelings of being under attack, which undermines their motivation to remain in the profession as well as their capacity to nurture students' creative abilities.
- Stress-inducing policy imperatives on the necessity of creativity can be perceived as placing yet another burden on teachers, which is particularly unhelpful in the context of the pandemic and the educational issues arising from the lockdown.
- Teachers understand creativity in a variety of ways, with some focusing on creative approaches to teaching and others defining it in terms of students' creativity. Assessment models and educational resources, such as those available on Education Scotland's website, tend to focus on the latter, whereas both may be important.
- Teachers in all of the subject areas represented in the research regarded creativity as relevant to their areas of specialism. Expressive arts teachers did not regard creativity as something that is specific only to their subject area; however, they emphasised the unique contribution of the arts to students' personal and academic development.

- Creativity was associated with notions of freedom, “opening up”, self-expression and maturity. This presents difficulties in terms of finding approaches to assessment that are consistent with these conceptions of creativity. Teachers’ experiences suggested that students were often resistant to more “open” approaches to assessment since their focus is instrumental (the “right” answer which will attain a high mark).

A proposal: Assessment for *creativity*

- The following pedagogical questions can be posed whenever a creative process is being undertaken:
    - Creative at what?
    - Creative why?
    - Creative how?
    - Creative for whom?
    - Creative with whom?

- These questions invite teachers and students to consider what the purpose of the creative endeavour is; what the student might need to know, and what skills they might need to develop, in order to undertake the creative process; who they might need to approach for support in order to build this knowledge and develop these skills; what feedback they might need in order to progress the project; and which values and moral purposes the creative project is attuned to.

- The pedagogical principles that underpin this approach to assessment for creativity are:
    - map/trace (a means of charting the creative process, which could involve greater use of folio and journaling);
    - pickaxe/torch (critical thinking and imagining possibilities);
    - caesura (space and time for pause and reflection);
    - provocation (interrupting thinking, encountering difference and challenging assumptions);
    - continuance (making connections to other ideas, people, places, materials, times; valuing the old as well as the new);
    - guide (support, advice, feedback and direction from teachers/other relevant education professionals and peers); and, fundamentally:
    - desire (intrinsic motivation, will and purpose).

Practical recommendations

- Rather than dystopian language and imagery, draw on examples from art, literature, scientific innovation and the natural world to inspire and provoke new thought about creativity and the future of education. Creativity is socially oriented, ethical, and concerned with the inspirational and the aesthetic, not just business needs, efficiency and novelty.

- Challenge the portrayal of state education as “broken” and “Victorian”, as this is not an accurate representation of Scottish education. Many of these constructions derive from neoliberal critiques of the American education system, and are used to justify the replacement of public services by the private sector.
- Actively promote professional enquiry with the aim of producing teacher-and-student resources for supporting creative work, and/or seek resources from a wider range of providers other than entrepreneurs. Ensure greater scrutiny of the creativity skills materials, resources, training and modules promoted to schools by private sector providers.
- Consider which constructions of creativity underpin the models and resources being promoted to schools, and which domains they ultimately derive from. “Creativity skills” are often creativity skills for advertising and marketing. They have meaning within these specific domains, but may not necessarily have relevance in others.
- Rearticulate the case for “assessment for learning” as that which nurtures and fosters creativity, rather than merely providing feedback to support summative assessment.