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DiY (Do-it-Yourself) pedagogy: a future-less orientation to education

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ABSTRACT

A future-less orientation, as defined in this article, explores approaches to education within the context of precarious, shifting, labour markets and the uncertain future of employment trends. A future-less orientation questions the validity of traditional views of education: as a means of preparing students for an imagined future career; one which may never happen. DiY (Do-it-Yourself) culture has a long tradition of finding innovative solutions to problems which institutions have failed to supply. In this article we explore the potentials of a DiY pedagogy based on a decentralised and transdisciplinary approach which emphasise diversity and community as a strategy to surviving a precarious future.

Introduction

As the myth of secure employment diminishes and precarious labour becomes the norm (Aronowitz & DiFazio, 2010; Brown, Lauder, & Ashton, 2010), our expectations of the roles of teacher and learner are drawn into question. In this uncertain future, sources and areas of employment are subject to constant change (Standing, 2016). Whilst uncertain employment trends and unanticipated forms of labour might not be particularly new as phenomena, the contemporary observed precariousness of these trends and forms have had a significant influence on the rhetoric of educational futures in education policy.

The uncertain, precarious, jobless-future is a set of related ideas that we engage with, in this article, in order to explore current thinking about the future and how this thinking will affect educational policies, research, and institutional forms of teaching and learning. The institutions of education, and the roles of the pedagogue, are of interest here because of the close relationship between forms of schooling, purposes of education, and the Modern technological society. As that society unbundles so too must the ways in which we think about and live out teaching and learning (Gilbert, 2005).

The paper begins with exploring future oriented learning: suggesting that the term future-less is a more accurate metaphor for the theorisation of educational futures; inviting the learner to engage with mutable visions of what the future may entail. By looking at recent programmes designed to equip schools with a futures focus, and the ways in

which teachers engage learners in their education, we suggest that certain fundamental flaws in these programmes limit what they can offer to students in relation to preparing for an uncertain future. Developing the concept of the DiY pedagogue, we hope to provide some suggestions for further research by educators into more effective strategies for engaging with an uncertain future. DiY culture, as an ethos concerned with exploring improvised ways of doing things, has a rich history of working outside of centralised structures of knowledge: as a method of alternative social and technological organisation which is not based on a centralised model; offering alternatives to metanarratives of socio-technological progress. Following Siegfried Zielinski, we are interested in seeking out 'secret paths in history, which might help us to find our way into the future' (Huhtamo & Parikka, 2011, p. 10). In this way DiY culture is presented in this article as a pedagogical provocation that helps us manage an anxiety regarding a future without future. One suggestion is that our role as educators would perhaps discard the very idea of progress: a DiY ethos which does not rely on the power and knowledge of the Modernist institution, but instead focuses exploration on the transdisciplinary spaces of a performative now. The idea is that these spaces of knowledge, traditionally seen as situated between or outside of the disciplines provided by the institution, can be utilised as pedagogical survival tools, working on a variety of levels and approaches.

Educational futures (and future-less oriented learning)

The idea of twenty-first century learning has become a popular educational concept for writing on the future of education. Of particular concern in this century is Jean-François Lyotard's concept of performativity and the potential for future conditions and contexts of a knowledge society (Bolstad et al., 2012). These future conditions and contexts include: complex information networks, reconceptualisations of intellectual property, climate change, global economic stability, labour market trends, an impending energy crisis in terms of peak-oil and the depletion of non-renewable fossil fuels; as challenges to the future of education (see for instance Bolstad et al., 2012). In the New Zealand Council of Educational Research report *Supporting future-oriented learning and teaching: A New Zealand perspective,* possible trajectories are mapped out for future-oriented educators. This report identifies three key questions:

(1) What could future-oriented learning and teaching look like, what ideas and principles underpin it and what makes it different from other teaching and learning practices?
(2) What are the conditions that enable future-oriented learning and teaching? What are the issues and challenges?
(3) How might transformational future-oriented learning and teaching approaches be promoted, enabled and sustained? (Bolstad et al., 2012, p. 1)

The Council report articulates a futures focus as 'an emerging cluster of new ideas, beliefs, knowledge, theories and practices – some of which may be visible in some schools and classrooms, some which exist only in isolated pockets and others which are barely visible yet' (ibid.). These are challenging questions to pose to and/or within a community, society, nation, or civilisation – they are arguably impossible to answer on account of the future's tendency to be beyond existing knowledge. More than this, the future may

be beyond existing language. These concerns do not signal that the future should not be engaged in scholarship and/or policy, but rather that such questions be understood as inviting engagement rather than requiring answers. Indeed, the way in which these questions are engaged are critical to the study of educational futures.

Richard Slaughter (1974) explains that futures discourses can be divided into *futures in education* and *futures of education*. The latter reflects a long held intention in educational policy making to determine the future of education in relation to broader social, political and economic goals. A focus on futures *in* education is a focus on the contemporary experiences of education in relationship to the creative acts of individuals and communities that impact on shared futures (Slaughter, 1974). In other words, a futures focus is as much a focus on the now, on 'learning to be' such that in school teachers attend first to 'the development of learners' dispositions, capacities or competencies to deal with new situations and environments, including those with high degrees of complexity, fluidity and uncertainty' (Bolstad et al., 2012, p. 13). The aim of a futures focused education then requires a curriculum and a teacher who is able to accept uncertainty, complexity and fluidity: to accept an unknowable future and to engage with the complexity of the present.

Futures focused educational discourses tend to regard the future as a problem to be responded to by the educational policies of the present. This might be regarded as the quality of all educational policies and programmes. For instance, Arendt's (1961) essay on education observes the tensions between progress and conservation as *the* problem of Modern education. However, there appears to be some quite particular problem of thinking about the future in the transition from twentieth to twenty-first century thinking. Tracing the genesis of future-oriented thought, Berardi (2011, p. 51) depicts the Modernist future in terms of 'reassuring qualities' which were capable of both predicting and transforming the future:

> The future of the moderns had two reassuring qualities. First, it could be known, as the trends of human history could be traced in linear directions, and science could discover the laws of human evolution, which resembled the motion of the planets. Second, the future could be transformed by human will, by industry, economic technique, and political action […] the twentieth century trusted in the future because it trusted in scientists who foretold it, and in policy makers able to make rational decisions.

This future orientation was and continues to be evident in the institutions and structures of schooling. The task is then to adapt our ideas of future-oriented education in order to avoid relying on the future as a linear idea, an economic idea, or a rational idea (Berardi, 2011). For Berardi, as with many critics of the neoliberal government of education (see for instance Ball, 2016), the idea of the Modernist future, and in particular the reliance on economic power structures, needs jettisoning at best, or at worst some significant redefinition.

As noted above, a major educational theme in this concern for the future, is the precarious nature of employment trends (Berardi, 2011; Hardt & Negri, 2004) and the ability of education systems to prepare students for the transience of fluctuations in employment opportunities and requirements. However, it is important to note that education systems have both believed in and helped construct the myths of Modernity regarding security of employment. Education systems have helped to normalise the myths of employment such that it is now possible to believe that precarious employment is a

new thing. Alternatively, we might argue that all the qualities of the jobless future have been around for many centuries, and for many communities. What has changed is that now the education system has decided that this is a problem that requires a global education solution; a certain set of demands which streamline the learning environment towards the production of workforce with the correct attributes of 'attitude, character, and prosocial behaviour' (Hardt & Negri, 2004, p. 108).

Within the agenda of attitude corrections, and confronted with an uncertain and fluid vision of the future, our knowledge of teaching and learning need to be transformed to adapt to the demands of the apparent reality. The argument is that we are going to need to let go of outdated and unhelpful practices and ideas related to the learner, the learning institution and also the relationship between knowledge and institutional power. As Bolstad et al. (2012) suggest, this may entail a decentralised, networked, approach to knowledge which enables learners to assemble disparate resources from the remains of various institutional disciplines, using that very same concept of performativity:

> In a twenty-first century curriculum, traditional knowledge is the raw material for new knowledge creation. It is a resource for what the French philosopher of knowledge Jean-François Lyotard calls 'performativity': the ability to take elements from one (old) knowledge system and put them together with elements from another to make new knowledge. (Bolstad et al., 2012, p. 36)

This notion of performativity shifts the educational pendulum away from the teaching of *what* to think towards the teaching of *how* to think. A focus on how to think is presumed to be a more open ended, fluid, flexible approach to the complexity of a knowledge society. The learner is understood as both a node in *and* an analogy of a wider cybernetic system. Education is required to enhance this analogic relationship through the application of cognitive processing-focused, rather than content-focused, pedagogies. In addition, a futures focus regards curriculum as a problem where it is predetermined and static. Prescriptive curricula, and teaching to the test, do not prepare the learner for the future. Schools in particular are required to move towards personalised learning environments and experiences that build on the interests and experiences of the learner rather than the prescriptions of a centralised curriculum.

Here, the performativity of the learner becomes the new *what*. According to Ball (2016, p. 1056), performativity 'individualises and fragments, and leaves us, most of the time, to struggle alone with our doubts and fears' (Ball, 2016, p. 1056). It does this not through an ability to tinker with knowledge systems but rather through a focus on intervening in the individual's knowledge of their self as a particular kind of measurable performing economic agent (Olssen & Peters, 2005). In a performative paradigm, teaching thinking skills becomes a further limitation of the learner's thinking. In other words, methods of thinking are at the same time methods of governing the child.

We are not rejecting the value of learning how to learn, but cautioning that being taught how to learn may have certain risks when applied from a centralised perspective of what defines future-oriented knowledge (Biesta, 2014). Learning to learn does seem to enable the child to respond to changing and uncertain social worlds. However while it can seem empowering, learning how to learn can also become constraining and can have much longer lasting effects in terms of the ways in which the child makes sense

of the world. So the questions here include: who is teaching children how to think; what models are being used; what models are being rejected; how is the child's creative capacity to think for themselves limited; and who benefits from having individuals who think in particular ways? How then does the discourse of educational futures keep the idea of the cognitive process open, dynamic, and flexible? How also do the 'teachers of the how to think' remain critical and reflexive in relation to the idea that teaching someone how to think is a kind of disciplinary mechanism or programming?

This disciplining of the child is hidden within a discourse of *potential*. The futures-speak talks about having and being supported to live to one's full potential. The system is then designed to maximise potential and in this sense a focus on educational futures binds the individual to the institution in terms of shared responsibility for working towards and then applying one's potential. That the future is unpredictable then requires that education support the learner in her development of the potential to respond to the unpredictable. In other words, that the learner develop an attitude and certain dispositions towards knowledge that enable her to deal with complexity and fluidity.

For Bolstad et al. (2012) the above conditions, and the aims of education given a futures focus, present to us in three themes: coherence, connectedness and diversity. These themes resolve into principles for education in general and for school in particular. For instance, our education must prepare us for participation in a society that is not yet imagined. Such an education might then regard the students and teachers as engaged in collaboratively determining educational pathways. From a phenomenological perspective students and teachers are already driving educational pathways: the problem is that this is regarded as a problem for centralised neoliberal educational systems. Furthermore, the education system must be *intelligent* (Johnston, 2016) in the ways in which it responds to the diversity of learners and communities. Partnerships with communities then becomes a critical direction for educational institutions – a direction that amplifies the cybernetic system analogy noted above.

The idea of educational partnerships builds upon earlier reconceptualisations of school and of community-based learning relationships, for instance in the work of Jean Lave and Etienne Wenger's Community of Practice (1991), and Ivan Illich's *Deschooling Society* (1976), as well as evident in the New Zealand Government's introduction of *Tomorrow's Schools* (1988) and its emphasis on self-managing schools. In addition, the development of the Aotearoa New Zealand early childhood curriculum framework *Te Whāriki* (Ministry of Education, 1996) during the first half of the 1990s, built on key principles from these educational movements through the development of a set of principles and strands. There is a strong emphasis on complex relationships; learning that emerges from these relationships; and sensitivity to the idea that knowledge is not something that can or even should be transferred in instructional systems. These educational wisdoms mean that it is not a difficult to imagine the kinds of learner and the kinds of approaches to curriculum and knowledge that are required for an orientation to the future.

From COPs and COLs to CODs: another New Zealand experiment

In Aotearoa New Zealand we have observed the education system open up to new policy making efforts to model the system on a networked social and economic world, developing a renewed interest in the notion of networks of schools acting as larger collections of

educational resource, experience and activity. In this section we briefly explore the nature of new programmes of educational networks and argue that, while having the appearance of new approaches to schooling and education, they largely reinforce and reiterate the New Zealand educational experiment begun in the 1980s (see Kelsey, 1995).

Programmes such as *The Learning and Change Network* and *Communities of Learning* (COL) takes the idea of a Community of Practice (COP) and applies it to the belief that a better system will lead to better achievement of students. The idea of a group held together through common practices is expressed in Jean Lave and Etienne Wenger's idea of the shared work of a community: a coherent identity formed through reception and production of artefacts (Lave & Wenger, 1991), through shared activity and 'concrete practices' (Fox, 2000, p. 854). A COP, in this sense, imposes a particular identity onto the learning community. The community is held together through shared aims and attitudes.

In the *Learning and Change Network* the decentralisation of the curriculum is considered through the introduction of information technologies. The programme supports school to establish networked approaches to systemic changes with a primary focus on affecting changes to the ways in which teaching and learning occurs, guided by the use of information networks that open up the connections between the child and community (Timperley & Early, 2012). Such networks are hoped to open up connections to the community in order to 'support the development of authentic knowledge-building activities for learners, and to provide authentic feedback on this knowledge when it is ready to be offered back into the community' (Bolstad et al., 2012, p. 50) and are evidence that there is a relatively coherent push to affect significant systemic change.

More recently the New Zealand Government has shifted its attention to a Communities of Learning (COL) model. The COL programme fits within the broader *Investing in Educational Success* Government programme. The programme focuses on encouraging early childhood, primary and secondary schools, and tertiary institutions, to form communities, to involve the local community, and to focus on student success goals that 'drive the spread of effective teaching and leadership practice across the system to make a more positive difference for ākonga/students, more quickly' (Ministry of Education, 2016, p. 3).

> Taking part in a Community of Learning will give kura/schools new opportunities to bring their collective expertise to bear on the achievement challenges affecting their wider educational community, right across students' learning pathways. With Communities of Learning working across the system we will see effective practice increasingly becoming common practice, with leaders and kaiako/teachers seeking out evidence-based professional knowledge and keen to share their expertise widely. (Ministry of Education, 2016, p. 3)

While a focus on COL does respond to the concerns of educational futures regarding the problems of competition between schools, and regards networks as critical to the experience of learning, COLs fail to respond to concerns of the very purpose of education. For instance in attending to raising achievement the system is limiting the experience of school and, in return, narrowing the future of the learner. Such programmes perpetuate a narrow economic focus on achievement, and fail to take into account any of the aspects outlined in the discourses of educational futures in relation to the nature and purpose of school. The COLs might appear to be liberating for local communities however they might also be, more cynically, deliberately bounded relationships with narrow goals that reinforce existing inequities (see for instance Crossan, Cumbers,

McMaster, & Shaw, 2016). The point here is not that the communities themselves do not have an intent to address inequity, but that the constraints of the system in which the COL operates are specifically designed for realising particular economic interests. More than this, that the ethos of COLs is about reinforcing the idea of a self-managing school community can be seen to be a particular neoliberal device that supports individualisation, marketisation, consumerism and competition (see Ball, 2016; Crossan et al., 2016). Crossan et al. (2016) argue that the language of freedom might resonate in such thinking, however the language of freedom is here constrained by the meaning of democracy (Rancière, 2010). Through self-managing as a community, the community experiences normalisation rather than diversification. Outside experts that support these communities add to the normalising process through a series of centrally acceptable goals and a range of acceptable goal seeking behaviours. Most importantly, some groups are regarded as more needy within the logic of COLs, hence those groups are burdened with the responsibility to accept the piecemeal solutions to problems that are systemic and inclusive of all community groups.

To move beyond the narrow and highly paradoxically centralised vision of educational communities, we propose a turn to the connection between DiY culture and the idea of a Community of Difference (COD). Duncombe (2008), in his study of zine networks, proposes a different type of social organisation and formation of structure – a more flexible and responsive individual tailoring of future-oriented learning which links participants 'via bonds of difference':

> If community is traditionally thought of as a homogeneous group of individuals bound together by their commonality, a zine network proposes something different: a community of people linked via bonds of difference, each sharing their originality … It allows people the intimacy and primary connections they don't usually find in a mass society, but with none of the stifling of difference that usually comes with tight-knit communities. (Duncombe, 2008, pp. 57–58)

Therefore, according to Duncombe (2008, p. 58), rather than produce an 'homogeneous group of individuals bound together by their commonality' a community of difference creates 'a community of people linked via bonds of difference, each sharing their originality' – meaning that the originality and difference between individuals is what creates a sense of community.

A COD, like a COL, works on the basis of effective networks that provide for sharing of resources, including flows of knowledge and expertise. Unlike a COP, a COD is a social assemblage which forms community around the notion of the diversity of individual strategies. Duncombe (2008) explains a COD as a resistance of the types of social structures in which the individual is enclosed within a collective identity. Duncombe's (2008) view of the resistance of a COD to social and economic forces, and its ability to shape knowledge, is derived from ideas of power based on Michel Foucault's concept of the knowledge/power relationship, situating the politicised account of a COD as opposing validated knowledge:

> Power produces knowledge … power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations. (Foucault, 1995, p. 27)

For Foucault (1995), social forces and institutions define knowledge and, therefore, the formation of discourses which decide the path of future-orientated knowledge from a centralised or totalising perspective. The COD is significant here, as an example of a structure which is non-totalising, in that its actions resist the formation of knowledge through centralised defining forces. The COD allows differences of outlook, intention and aims to occur between its individual members and recognises the importance of participation without the need for a strong collective consensus. Individual identity is not limited or subsumed by a homogeneous collective identity, allowing a focus on the expression of the individual as an active agent in forming the community (Duncombe, 2008).

The COD presents a way of creating and/or recognising a community of learning which does not revolve around a particular centre of power, such as a common practice or belief, and cannot be reduced down to a particular totalised or categorised identity. For instance, there is no dependency on a common belief in the economic imperative as a driver for educational aims. The non-totalising aspect means that each participant within the community of difference has an influence on the multiple formations of identity: presenting future-oriented learning as multiple strands of potential which are less likely to be co-opted by centralised social-economic forces. There is then, arguably, a greater coherence between the rhetoric of twenty-first century learning and a COD than there is with a COP or a COL because of this suspicious relationship with the centre. Centralised power requires centrally oriented learning, which in turn supports a form of knowledge limited by inequality and competition within a narrow understanding of the nature and purpose of education.

DiY pedagogy

In DiY culture centralisation is questioned through the re-assemblage of the *debris* of decentralised knowledge – 'the ability to take elements from one (old) knowledge system and put them together with elements from another to make new knowledge' (Bolstad et al., 2012, p. 36). Ironically, decentralised learning is arguably more likely to produce the kinds of multi-stranded, multi-faceted, complex, potentials that appear to justify educational futures policy making in terms of future social and technological innovations (see Peters & Heraud, 2015). A DiY oriented COD approach appears to cohere better with the impossibility of a future focus, a future-less-focus. In this section, we explore how the ideas and ethos of DiY culture can support a future-less-focus in education. We focus in particular on the educational connections between pedagogy and the theorisation of DiY Citizenship. In so doing we highlight a series of paradoxes and tensions in the discourses of education futures and bringing into the futures discourses alternative views regarding the nature and purpose of educational institutions.

In DiY citizenship a priority or aspiration is '*equality-of-participation* in place and community making. This is fundamentally different from the neoliberal construction of citizenship, which aims to produce an atomized citizen subject independent of any broader social responsibility or embeddedness' (Crossan et al., 2016, p. 937). For this paper, these 'forms of political practice' (Crossan et al., 2016, p. 937) are of interest to us not just because they appear to be relevant to pedagogy, but because they *are* pedagogical

in the sense that there is a central concern regarding the community as a place of learning. In terms of politics, where DiY citizenship challenges 'aggressive property-led accumulation' (Crossan et al., 2016, p. 937), for DiY pedagogy, this aggressive accumulation of property can be understood in terms of intellectual property and the ways in which knowledge economy thinking in neoliberalism impacts on educational practices.

In exploring DiY citizenship, Crossan et al. (2016) look at Hartley's study of identity construction. Through increasingly personalised media consumption the DiY citizen is involved in an active construction of identity through unique formulations of available signs and media rather than in performing a static and prescribed, national identity. This analysis has shortcomings in terms of the idea of an atomised free and state-less individual (Crossan et al., 2016), and in terms of the role of the media: that the fragmented do-it-yourself media identity might entirely be the desired State subjectivity (see for instance Rancière on the media and the State, 2010). For this reason the 'yourself' of DiY is the philosophical tension and provocation for the theorisation of a DiY ethos (Crossan et al., 2016). For Crossan et al. (2016, p. 943) DiY citizenship involves making sense of the social, political and economic networks that produce the signs that construct the identities, and through which it is possible to engage in 'doing things differently' supported through a community of difference. Two critical elements of doing things differently of interest in this educational application of DiY thinking are that the focus is on the present, rather than the future, and that the individual is a collective work. On this latter point then DiY citizenship positions 'collective know-how' as both aim and method (ibid.).

Of course, the discourse of DiY citizenship runs the risk of reiterating concerns regarding the state of things without offering anything different to say about the problems of the neoliberal state, or anything different to do in challenging the status quo (Crossan et al., 2016). So what is the difference that's different here?

Here we would like to turn to the Glaswegian community garden project because this project recognised that 'the gardens themselves promote a form of civic education that emphasizes interdependence of individual *and* collective life' (Crossan et al., 2016, p. 944) and that create a space or meeting point for communities that would otherwise, in the words of Billy Bragg (1984), pass like 'cars in the contraflow system'. In their research, the garden becomes a focal point, not just for community groups, but also forms a kind of umbrella space for more informal social agencies to work together. The space then is also critical to the DiY ethos:

> Importantly, it is not simply people who are generating such ideas and practices, but people in communion with space. It is in the *doing* of the work that counter hegemonies emerge. People are placing themselves at the heart of urban problem solving and planning enabling a heuristic, hands-on form of learning in the urban environment. (Crossan et al., 2016, p. 945)

What appears different could be considered to be a reformulation of elements of the marketplace, lost in the marketisation of the economy, that become manifest in the education system through various means of atomisation and exploitation of the learner as a particular kind of autonomous economic individual well documented in critiques of neoliberalism (Olssen & Peters, 2005). The Glaswegian community gardens study recognises a DiY citizenship as educational: beginning with the recognition that there is no individual without community, and that; each individual is more or less free to form their identity as part of the interdependence of the community.

> In a DiY community, skills and education
>
> are linked to organizing creative work practices that build individual and community confidence and autonomy rather than being reduced to a neoliberal employability agenda. More than this, the work generates a collective set of social practices and relations in the city. (Crossan et al., 2016, p. 946)

Here then the focus is on employing oneself within a group rather than marketing oneself as an employable individual – skills that seem to us quite aligned to the idea of an unpredictable, jobless, future. This has significant implications for the ways in which we think about the curriculum and in particular how we enact the curriculum as something that is planned, implemented and assessed for each atomised learner by a collection of more or less connected teachers.

The role for pedagogy is then to take seriously the collective production of new spaces and new ways of thinking about space that reject the idea of space as 'quantifiable and commodifiable, something to be enclosed and privatized' (Crossan et al., 2016, p. 949). Through DiY pedagogy questioning the epistemological errors of neoliberalism, space and community become the event of learning, and we'd like to conclude this analysis through an exploration of how DiY culture's relationship to technology can inform and support such events.

Shifts in disciplinarity and the culture of makers

In technology and innovation, DiY culture has been an important influence to the rise of maker culture: a significant and highly successful strategy in a post-industrial landscape and named as the 'third industrial revolution' (Hatch, 2014, p. 199). The significance of DiY driven maker culture, as a challenge to the education system, is summed up by Hatch (2014, p. 202):

> The entire education system in the United States is outdated – built for a world which no longer exists, in a world that is continuing to change very rapidly. We have an incredible opportunity-and responsibility-to explore what education means in a fully networked, internet-enabled, and maker-space fuelled world.

Concerned mainly with technological innovation, the maker movement and the rise of maker spaces advocates for open and collective access to advanced manufacturing technology. In education, this movement has been viewed as challenging prescriptive curricula in education systems. Communities built around the maker space, as with the community gardens above, focus DiY pedagogy on the possibilities of spaces for engaging with the present in a way that responds to the problem of the future, or, the future-less-ness of the future.

One of the key aspects of maker culture is the personalisation of the curriculum. Here personalisation does not mean individualisation but rather freed from prescription. Learners as makers choose their learning journey in terms of ideas to pursue that suit the needs of their on-going life-situated education. This form of self-directed learning has been one of the mainstays of DiY culture (Duncombe, 2008; Spencer, 2007, 2008) with the rise of the crafters movement and the creation of CODs, respectively. In maker culture, and in the maker space, the COD is a collective space in which different disciplines and techniques of collective self-education can occur. In a learning space driven by the ethos of COD,

the traditionally central relationship between student and teacher is less emphasised. The educator is not the central source, and directive, or explicator (Rancière, 1991) of learning but instead works within a decentralised learning process – a process requiring a new definition of knowledge than that which is held within the tradition disciplines and specialisations of the expert.

However, while DiY, like neoliberalism, keeps the learner central, this is not the self-directing, self-managing autonomous individual that is a widely challenged subject in neoliberal thinking. The way in which the learner is understood in relation to a wider collective of learners is a significant departure from neoliberalism. DiY pedagogy takes the idea of self-direction in a way that is consistent with the theorisation of educational personalisation (Bolstad et al., 2012). Personalisation is evident where disciplinary boundaries dissipate and where curriculum is neither prescribed nor standardised. Personalisation then also becomes a provocation for making sense of the future and of uncertainty through learning to work in the complexities of multi-modal educational spaces and projects. Study in a precarious world operates within a knowledge/power relationship differing from that of a prescriptive education; DiY pedagogy is the potential for creating a form of knowledge which cannot be prescribed by experts who are assumed to know more about the specific survival tools necessary for each student.

Whilst the various departments of specialised and fragmented arts and humanities in the age of neoliberal higher education may be struggling to re-invent themselves as 'interdisciplinary' subjects, the starting point of a COD is in the creation of a collective space embodying multi-disciplinary, multi-modal learning. The COD, in the sense of providing a space which is actively supportive of a diverse range of self-directed learners, is suggested as something we could incorporate into a future-less education strategy. The DiY ethos that drives the maker-space has been hailed as an innovative pedagogical turn, in which: 'experimentation is highly regarded, with playful engagement and risk taking (learning through making mistakes, trying novel approaches) very much encouraged' (Sharples et al., 2013, p. 33).

The key point here is that different disciplines are provided a space to exist together and to occur *in conjunction with each other*: the *space* of the COD becomes an important aspect of a decentralised learning environment; a space of learning which is not delimited by the borders and boundaries which traditionally maintain separation between diverse areas of knowledge. Allowing this space of diversity to happen is something which is inherent in the DiY ethos: there are no set ways of making, and hence of learning. The learning outcomes in DiY pedagogy are the result of numerous experiments, failures and cross-pollinations, with the diverse approaches of other practitioners in both similar and diverse fields of operation. It is these very qualities that we argue help to make sense of the problem of the uncertain future.

In terms of a precarious future then, a DiY pedagogy emphasises experimentation and risk taking in ways that create relationships between diverse practices. What is needed, it seems, is a space which allows students to learn from their mistakes – to develop their own strategies of learning surrounded by a diversity of approaches on which they can draw inspiration: an interdisciplinary space in which diverse approaches to learning can be investigated and evaluated; ultimately leading to a *transdisciplinary* culture of education which cuts across boundaries of knowledge and specialisation traditionally associated with departments within universities, institutions of education, trades and employment training.

A transdisciplinary culture operates over diverse fields of practice and transgresses boundaries between separate subject areas (Bergmann, 2012; Pohl, 2007). This can be seen as an extension of theoretical frameworks beyond the borders of a single discipline and is one of the trademarks of DiY culture. Spencer (2008) uses a transdisciplinary approach in looking at the DiY ethos as a unifying element across diverse communities: identifying the DiY ethos as a framework beyond disciplinary perspectives. In this way, DiY practice avoids well-known structures of specialised knowledge and instead seeks to occupy the spaces between specialisations (Duncombe, 2008). In terms of a DiY pedagogy this suggests a strategy of encouraging students to seek knowledge trajectories 'outside' of the specialisations of the expert, to seek new configurations of knowledge which are more appropriate to their experience of the world beyond traditional employment-oriented areas of knowledge. In relation to the previous comments and interpretations of Foucault's understanding of knowledge/power the suggestion is that learning will become more individualised and based on an understanding that knowledge/power is not centralised around that of the expert, or expectations of hypothetical employers, but as a tool-base for survival in a precarious world.

The differences between transdisciplinary and interdisciplinary cultures are significant to this argument. Interdisciplinary practices connect two or more diverse areas of *specialist knowledge* through a commonality which bridges the differences. For example, performance art would be an interdisciplinary combination of two different fields of knowledge, art and theatre, which would usually be produced, exhibited and critiqued in two different specialist spaces, brought together to form a third specialist field of knowledge. In contrast, a transdisciplinary practice operates from a third space which is the excluded zones *between* two or more areas of specialised knowledge, creating a practice which remains outside or beyond areas of specialist knowledge and serves to highlight the negative space between specialist areas of knowledge. In terms of a DiY citizenship based on a community of difference, transdisciplinary practices start from a position of diversity and decentralised learning. For Stember (1991), transdisciplinary practices represent not only a higher level of disciplinary relationship, but also a method of stepping outside of the limitations of disciplinary and interdisciplinary practices, allowing a reassessment of what constitutes a field of knowledge:

> interdisciplinary integration brings interdependent parts of knowledge into harmonious relationships [...] A higher level of integrated study is transdisciplinary, concerned with the unity of intellectual frameworks beyond the disciplinary perspectives. (Stember, 1991, p. 4)

Interdisciplinarity draws attention to commonalities between disciplines, whilst transdisciplinarity highlights and works with the differences, represented by the negative space, which remains excluded from disciplinary areas of knowledge. In terms of facilitating a learning experience which embodies a decentralised curriculum, the transdisciplinary approaches of DiY culture invite learners to move beyond disciplinary specialisations and to engage with learning outside of centralised prescriptions of learning. Therefore, the strategies of a DiY pedagogy would encourage a multi-stranded approach to future-oriented learning, in which learners are encouraged to look between the gaps of knowledge (rather than fall between). In this sense, difference is a vital part of the learning community, as useful tools in defining a future(less)-oriented educational perspective. For DiY pedagogy this perspective requires making sense of the connection between self and

community as critical to the experience of teaching and learning. Learners are challenged to recognise and negotiate complex social relationships in ways that resonate with the above mentioned constructs of coherence, connectedness and diversity.

Building on these characteristics of transdisciplinarity and DiY Citizenship, a DiY pedagogy intentionally invites the learner to question the contemporary observed precariousness of the world, and to make sense of how educational policies, institutions and disciplines impact on this experience of precariousness. An emphasis on transdisciplinary approaches means that students are less concerned with the fixed genres or disciplines of learning, and challenging the very distinctions that have had a significant historical impact on learners and teachers.

The teacher and learner respond to the myth of individualism through attending to the collective nature of their work and their knowledge, valuing an altogether different kind of institutional set up than what is presented in the highly individualised systems of, for instance, contemporary Aotearoa New Zealand. In other words, the curriculum addresses the very problem of individualistic thinking in education. For teachers and school communities, addressing the systemic manifestations of individualism and competition are challenges to accept not for the students but with the students.

This challenge recognises that students are already willing and able to engage their learning in agile ways that work constructively with the idea of the future as precarious – whilst at the same time recognising precariousness as an observation that says as much about what is valued and what is desired in the world. Working pedagogically with precariousness as an interpretation avoids falling into the trap of thinking that the future is known. Afterall, the future might not be precarious in its many forms, including employment. It might actually be highly prescriptive and reliable – who knows? Yet the problem of predicting whether or not certain prophecies come to pass does not, arguably, negate the benefit of engaging with their possibilities. There are rich learning moments to be explored in responding collectively to the observed, and worrying, environmental and economic trends. In a DiY pedagogy, the politics of this learning intentionally highlights the ways in which the metanarratives of socio-technological progress are implicated in these trends.

One purpose of DiY pedagogy is then to respond to any anxiety regarding a future without future. In this way DiY pedagogy puts into practice the ideas of complexity, fluidity and uncertainty in a way that may better avoid the contradictions of contemporary education systems and their attendant rhetoric regarding the dispositions of twenty-first century learners.

These are our suggestions for further research by educators into more radical strategies for engaging with the future through a DiY pedagogy. This is the kind of research programme that happens in and across school communities. This research begins with DiY teachers opening up, or perhaps even being more open to, questions concerning the future, and inviting students to do it themselves.

Conclusion: back to the future

DiY pedagogy is presented in this article as a pedagogical tool that helps us manage an anxiety regarding a future without future. We have explored DiY pedagogy as related to, and moving on from, a range of educational provocations and projects designed to

equip both a system and a learner with a sense of being prepared for an uncertain and jobless future. Through ideas associated with a DiY ethos and DiY citizenship, we have suggested there is merit to engaging in the creative making of new transdisciplinary spaces for teaching and learning. The idea is that these spaces of knowledge, traditionally seen as situated 'between' or 'outside' of the institution, can be utilised as pedagogical survival tools, working on a variety of levels.

For DiY pedagogy, the focus is not so much on what kind of worker you will grow up to be, but rather what kind of worker you already are, and how your work already helps you make sense of the world day to day. One might imagine that, perhaps ironically, the idea of precariousness will become precarious if and when students begin to take the properly incredulous attitude towards the myths of stability and known futures. A realisation of the mythical nature of past educational promises highlights that there is nothing particularly precarious about any age, past, present or future. The three themes of educational futures, coherence, connectedness and diversity, then become productive ideas for engaging in the present of a Do It Yourself pedagogy.

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