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Education and full employment in the Capitalocene: Political possibilities, ecological imperatives

Jason van Tol[a]*, ORCID 0000-0002-1629-5478

[a]*University of Technology Sydney, Faculty of Arts and Social Sciences, City Campus, Ultimo NSW 2007, Australia*

**Author Correspondence: jason.vantol@student.uts.edu.au; jayveetee@gmail.com*;

Education and full employment in the Capitalocene: Political possibilities, ecological imperatives[1]

Imagine what education would look like if upon completion every graduate was guaranteed a job paying a living wage, democratically created, doing meaningful work… This is a political possibility in most countries in the world today: Modern Monetary Theory (MMT) demonstrates that, provided a country has sovereignty over its currency, which most now do, it faces no nominal constraints on spending and can always choose to guarantee jobs and maintain full employment. Yet a pervasive feature of the neoliberal phase of the Capitalocene has been precisely the opposite: high and rising rates of un- and underemployment. This article examines the reasons for this trend and argues that its impact on education has been both unnecessary and detrimental. Finally, it suggests a strategy for educators to reverse this trend and the associated policy of economic growth, and, with reference to history, imagines what the effects such a reversal might have.

Key Words: school-to-work transition; Modern Monetary Theory; full employment; Job Guarantee; education; neoliberalism

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Introduction

According to Moore (2016, p. 5), Andreas Malm was the first to coin the term Capitalocene, in 2009, since which time many other scholars have integrated it into their work. Its ascendancy is due to the shortcoming of its cousin, the Anthropocene, to explain the origin of the multiple crises now facing the earth (Moore, 2016, p. 5): biodiversity loss (IPBES, 2019), climate change (IPCC, 2021), overextension of the nitrogen and phosphorus cycles (Rockström et al., 2009; Steffen et al., 2015), and so on. While the Anthropocene lays the blame for these crises on 'us', the Capitalocene makes a more discriminating case for identifying their source by focussing on the rise of capitalism and its characteristics of private property, production for profit, and above all, growth (Alexander & Gleeson, 2020, pp. 357-360; Hickel, 2021; Wallerstein, 1974, 2011a).

To help environmental educators link the Capitalocene to their work, the foremost expositor of the Capitalocene, Jason W. Moore, insists on the inseparability of "Nature" and "Society" (Moore, 2015, pp. 13-14). He argues that "'[*t*]*he* economy' and '*the* environment' are not independent of each other. Capitalism is not an economic system; it is not a social system; it is *a way of organizing nature*" (Moore, 2015, p. 14, emphasis in original). This organization of nature, here connoting something pervasive, holistic, including humans, yet nonetheless amenable to critique, is what Moore (2015, p. 13) refers to as the 'double internality' of capitalism through nature and nature through capitalism. To choose just one outstanding example of the false dichotomy between 'the environment' and 'the economy', or 'nature' and 'capitalism', consider the Orbis Spike (Lewis & Maslin, 2015). In 1610 there is a sudden dip, or spike, in atmospheric carbon dioxide. The most likely cause of this 'environmental' change is the arrival of Europeans in the Americas in 1492, the ensuing deaths of 55 million

indigenous people, and the associated abandonment of 56 million hectares of previously farmed land. This ‘Great Dying’ (Koch et al., 2019) of the indigenous peoples of the Americas resulted in the reforestation of those 56 million hectares, its associated carbon drawdown, and the pronounced dip in atmospheric carbon dioxide (Koch et al., 2019; Lewis & Maslin, 2015, p. 176). “Put simply, humans make environments and environments make humans—and human organization” (Moore, 2015, p. 14).

The human organization of environmental education arose in a formal sense in 1972 in response to the environmental crisis (Cutter-Mackenzie-Knowles et al., 2019, p. 952), which, following the transdisciplinary perspective of the Capitalocene, has been closely intertwined with the financial crisis, climate crisis, COVID crisis, and perhaps most importantly, the ‘crisis of democracy’ (Crozier et al., 1975). Fortunately, the sort of interdisciplinary approach needed for understanding and dealing with this polycrisis was built into the foundations of environmental education (United Nations, 1972, p. 24).

The formal establishment of environmental education occurred at roughly the same time as two other key events, elaborated below: the beginning of the modern monetary era in 1971, and the first political instantiation of neoliberalism in 1973. Before focussing in on these concurrent events, important to emphasize is that formal education (i.e. mass compulsory schooling) arose in the 19th century as a product of industrial capitalism and the rise of employment and wage labour which underpins it (Sukarieh & Tannock, 2015, pp. 48-51). As the Capitalocene has continued to develop, more people have been drawn into the capitalist world-system (Wallerstein, 1974, 2011a), and their preparation to participate in it is shaped by education (Bowles & Gintis, 1976; Connell et al., 1982; Morgan, 2019; Sukarieh & Tannock, 2015, ch. 2; Willis, 1977). In the academic literature this is usually taken for granted in the so-called ‘school-to-work transition’.

The school-to-work transition is a heavily researched topic, directly connecting the interests of educators and economists. A prevailing issue is the extent to which education should be aimed at conferring employability skills, versus other goals of personal, cultural, and citizenship development (Marshall & Symonds, 2021; Siri et al., 2022; Wintersteller et al., 2022). While these purposes of education are not necessarily antagonistic, the tension between them has intensified in recent decades due to rising rates of unemployment and underemployment (those who have work and want more but cannot find it). An implication, sometimes made explicit even in high-level publications (e.g. UNESCO, 2016, p. 7; UNESCO & ILO, 2018, pp. 12, 36), is that the problem of unemployment is educational in nature, and that therefore education should be used to solve it. However, much less attention in the school-to-work literature has been directed at the political economic causes of unemployment. Moreover, database searches return not a single academic source in the school-to-work literature on full employment or the Job Guarantee, which are a locus of progressive policies in labour market economics. The purpose of this article is thus two-fold: first, it aims to explain the political economic causes of unemployment; and second, in so doing, it aims to liberate education from the increasingly narrow goal of conferring employability skills by elucidating the role of the Job Guarantee, explained below, and thereby increasing the opportunities to fulfil other purposes of school, including those of environmental and sustainability education. I turn now to the beginning of the modern monetary era.

Modern Monetary Theory

Modern Monetary Theory (MMT) is a school of economics which describes in detail how banking and financial systems actually work. The qualifier 'actually' is important because the mainstream economic explanations of these systems are based on fallacies that serve, perhaps unwittingly, certain ideological preferences (Mitchell et al., 2019,

ch. 8; Mosler, 2010). As a result many criticisms of MMT are unjustified (e.g. Bossone, 2021; Drumetz & Pfister, 2021; Palley, 2019). Nevertheless, while the view presented here is sympathetic to the purely descriptive aspect of MMT about the workings of the financial system, some policy prescriptions that flow from MMT (e.g. the Green New Deal) can be improved by making use of concepts from physics, environmental science, and most of all ecological economics, the last of which has just begun (Williams & Taylor, 2022). No attempt is made here to present a treatise on MMT; readers interested in a fuller overview might start with Mosler (2010), with more advanced analysis by Wray (2015), and more advanced still by Mitchell et al. (2019), amongst much other literature. Rather the emphasis here is to highlight MMT's key insights that bear directly on the policy choices that impact education through its relationship to (un)employment.

One of the key concepts of MMT is a 'sovereign currency'. Any government that has a monopoly on the issuance of its own currency and has a floating exchange rate is said to have a sovereign currency (Mitchell et al., 2019, pp. 325-326; Wray, 2015, pp. 41-44). If, for example, I attempted to issue American dollars, I would be charged with counterfeiting, which is a serious crime. Also, if a government pegs its currency to another country's currency, gold, or something else, it concedes some of its control over domestic policy since it needs to amass and retain the foreign (or gold, etc.) reserves necessary to maintain the peg. Most governments in the world today have a sovereign currency, with the Bretton-Woods system of fixed exchange rates and a gold standard being abandoned by Richard Nixon in 1971 (Mitchell et al., 2019, pp. 13-14).

The next key insight of MMT relates to the sequence of government spending and taxation. Most people believe that governments collect taxes in order to spend, but MMT demonstrates that the causality is backwards: governments must spend first in

order for people to pay taxes (Mitchell et al., 2019, p. 137; Mosler, 2010, pp. 19-33; 2022; Wray, 2015, p. 141). As a consequence of the government's currency sovereignty and sequence of spending and taxation, it faces no nominal constraints on spending, only real constraints based on the availability of resources, and it can always afford to buy anything for sale in its own currency. Importantly, this includes labour. In other words, the government can always choose to guarantee jobs and maintain full employment (Tcherneva, 2020; Wray, 2015, ch. 8). That is to say, unemployment is a political choice, not an economic necessity, contrary to mainstream economic theory which views unemployment as normal, or even 'natural' (Samuelson & Nordhaus, 2010, p. 626; Tcherneva, 2020, pp. 6-7).

But why do people work for the government's currency at all? This fundamental question is often overlooked when discussing (un)employment, but is a key part of the MMT money story. Preceding the above sequence of government spending and then collection of taxes is the imposition of a tax liability (Mosler, 2010, p. 28; 2022). By demanding that people pay taxes in the government's currency, this compels them to work for it since tax evasion can be penalized by dispossession of property, going to jail, and so on. In other words, the imposition of taxes creates unemployment, which by definition is people looking for paid work. The government can then offer employment by spending its currency into existence, and then finally collect the taxes. One of the implications of this logic is that unemployment results from taxation being too high, government spending being too low, or a combination of both.

With this brief exposition of MMT in view, I now demonstrate how the MMT era, which as noted above began in 1971, commenced at roughly the same time as neoliberalism, and situate them within the much longer history of the Capitalocene.

The contemporary Capitalocene

The Capitalocene, the age of capitalism, began about 500 hundred years ago and has developed through its agricultural, industrial, and now financial stage (Hudson, 2021; Moore, 2016, p. 7; Wallerstein, 1974, 2011b). For the purposes of this paper, it will be helpful to focus on the two phases of the Capitalocene since the end of World War II: the Keynesian phase that followed immediately after the war and persisted until the 1970s, which was followed by the neoliberal phase which has continued until today. Of particular importance is the differential influence that these two most recent phases of the Capitalocene have had on education. Before highlighting their differences it is important to understand one crucial commonality: they have both been committed to economic growth (Keynes, 2009; Samuelson & Nordhaus, 2010), not just economically, but politically too (Blyth, 2002, pp. 91-95). Because the economy is a real thing, requiring real materials and energy – which come from the environment – for the production of real goods and services, this commitment to economic growth has had disastrous ecological consequences, dubbed the ‘Great Acceleration’ (Anthropocene Working Group, 2019), a point to which I return below. Now to the differences.

Keynesianism

John Maynard Keynes published his magnum opus, *The General Theory of Employment, Interest and Money*, in 1936. By Keynes’ own description the *General Theory* is “primarily a study of the forces which determine changes in the scale of [economic] output and employment as a whole” (Keynes, 2009, p. 3). Writing in the midst of the great depression, Keynes was interested in alleviating the high rates of unemployment, and recommended government expenditure to grow the economy, and as businesses expand, employment opportunities (Keynes, 2009). The logic behind this

relationship between economic growth and employment is simple, and governments embraced Keynes' recommendation following World War II, after which it was impossible to suggest that governments could not, or should not take an active role in promoting full employment as they had done during the war (Robinson, 2003, p. 114). In Australia this resulted in the *Full Employment in Australia* White Paper (Commonwealth of Australia, 1945), and in the United States *The Employment Act of 1946* (US Congress, 1946).

The definition of full employment, though intuitive, varies (e.g. compare the classical view given by Samuelson and Nordhaus (2010, p. 639) to a more modern view given by Sloman et al. (2010, p. 240)). It is not my intention to elaborate on the different meanings of full employment throughout all times and places. Rather, for the purposes of this paper, the reader is encouraged to associate full employment with the Job Guarantee, which "is a public policy that provides an employment opportunity on standby to anyone looking for work, no matter their personal circumstances or the state of the economy" (Tcherneva, 2020, p. 1). I return to this idea below.

As a result of Keynesian pro-growth policies, following World War II the third quarter of the twentieth century witnessed the highest rates of economic growth ever in human history (Piketty, 2017, p. 120). Excluding the agricultural sector, Australia experienced growth rates of five percent throughout the sixties (Pitchford, 2003, p. 201), while from 1950 – 1970 Europe experienced annual average growth rates of 3.8%, the US 1.9%, Africa 2.1%, and Asia 3.5% (Piketty, 2017, p. 120). At the same time unemployment was kept low: following World War II Australia did not experience unemployment rates over two percent until 1975 (Australian Bureau of Statistics, 1986, p. 287). Australia was not unique in this regard, as every Western nation maintained full employment through the Keynesian policy of promoting economic growth (Hobsbawm,

1994, pp. 328, 329; Mitchell & Fazi, 2017, p. 17). However, these conditions began to unravel in the 1970s.

Neoliberalism

In sharp distinction from the Keynesian era, one of the characteristic features of neoliberalism has been not only a departure from full employment, but the deliberate pursuit of unemployment as an economic tool for combatting, with varying efficacy, inflation (Mitchell & Fazi, 2017, pp. 39-41; Tcherneva, 2020, pp. 23-27). This inverse relationship between inflation and unemployment was first dubbed the Phillips curve, which developed into the current clunky concept of the non-accelerating inflation rate of unemployment (or NAIRU) (Samuelson & Nordhaus, 2010, pp. 620-623). The rationale between the supposedly conflicting goals of full employment and inflation is that when jobs are plentiful and unemployment is low, workers and unions demand higher wages, confident that they will not be fired, or if they are they can easily find work elsewhere. In turn businesses raise prices leading to a wage-price spiral causing inflation (Samuelson & Nordhaus, 2010, pp. 620). The solution is to generate the opposite scenario: by ensuring a sufficiently high level of unemployment workers become desperate and do not demand higher wages. Former Federal Reserve Chairman Alan Greenspan, for example, cited "worker insecurity" for the US's low inflation in the mid-1990s (Board of Governors of the Federal Reserve System, 1998, para. 5).

However morally questionable the preceding logic may be, government policy is heavily influenced by the NAIRU and the desire to keep a large and growing stock of people un- and underemployed (Tcherneva, 2020, pp. 23-27). This policy has especially impacted young people (those 15-24 years old), for whom unemployment rates have ranged as high as about 50% in countries like Greece and Spain (Bessant et al., 2018, p. 7), 66% in South Africa (Dawson & Fouksman, 2020, p. 229), and over 20% in

Australia (Australian Bureau of Statistics, 2020). Globally, the youth unemployment rate is 15.6%, with young people more than three times as likely to be unemployed as their adult counterparts (International Labour Organization, 2022, p. 26).

While neoliberal policies of cut-backs and underspending generally have become commonplace, it is important to recognize that neoliberal doctrine was adopted politically at about the same time as the MMT era came into being in 1971, granting governments a new dimension of sovereignty over their currency. Since then, led by economists Milton Friedman and Friedrich von Hayek, neoliberal doctrine began supplanting the Keynesian era of full employment and the welfare state, based on the ideological framing of individual freedom (free markets, free trade, etc.), and reducing government intervention in the economy for these purposes. Politically, this first took place in Chile in 1973, with the US-backed instalment of Augusto Pinochet, and much attendant violence. Later, in the 1980s, it took the form of Margaret Thatcher in the UK and Ronald Reagan in the US. How and why this complex transition occurred is beyond the scope of this paper, but see Mitchell and Fazi (2017, esp. part 1, pp. 15-158); also Harvey (2007). With the foregoing foundation laid, we are now in a position to consider how these phases of the Capitalocene have differentially impacted education.

Education under neoliberalism

Education for employment, or "e4e" as it is sometimes referred to (Sukarieh & Tannock, 2015, p. 68), has become an increasingly common purpose of education in the neoliberal era, particularly in countries of the Global North. As Sukarieh and Tannock (2015, p. 67) summarize:

> Overwhelmingly, the dominant response to rising youth unemployment world-wide has been to focus critical attention on the failures of the education system to meet

> the needs of corporate employers, and provide students with the particular skill set that employers wish to see when recruiting new employees.

Indeed, national and subnational governments that have educational policies at the secondary school level explicitly aimed at preparation for employment include Australia (Council of Australian Governments Education Council, 2019, pp. 6, 10, 14, et passim), Ontario (Ontario Ministry of Education, 2013, p. 23), New York (New York State Education Department, 2015), the UK (UK Department for Education, 2017, pp. 23-25), and New Zealand (New Zealand Ministry of Education, 2020, pp. 7, 9, et passim), amongst many others.

The predilection for employment preparation is increasingly an objective of universities too, for example, in the UK (Tymon 2013; Tomlinson 2012), Australia (e.g. UNSW Sydney, 2020, p. 25), and the US (e.g. University of Central Florida, 2022, pp. 11, 17), a trend which extends throughout OECD countries (Gedye & Beaumont, 2018, p. 406).

Some key international organizations support this trend. For example, the World Bank (2018) advises that "[f]or individuals, education promotes employment, earnings, and health" (p. xi) and that "[e]ducation raises human capital, productivity, incomes, employability, and economic growth." (p. 38) Yet, it explains, "the learning that one would expect to happen in schools—whether expectations are based on formal curriculums, the needs of employers, or just common sense—is often not occurring" (p. 4).

Promoting education for employment appears to be an even greater preoccupation of the World Economic Forum (WEF), judging by some of its recent reports. It suggests that

> educators should work closely with employers to understand which skills are in demand and how they are deployed in the workplace. Arguably, however, no one understands the context of skill deployment in the workplace better than employers themselves. Allowing employers to play the role of educators, for at least part of a curriculum, helps bridge the gap between learning and application. (2022, p. 17)

Similarly, teachers are advised to “work with local employers to understand the environments within which children will be operating once they enter the labour market and leverage these interactions to ensure curricula and learning experiences better prepare children for the future of work” (World Economic Forum, 2022, p. 24).

The WEF has endorsed many local initiatives that link education to the needs of employers, for example the Accelerated Work Achievement and Readiness for Employment (AWARE) project in Indonesia, which is supported by the JP Morgan Chase Foundation and partners with 65 private sector companies including BMW, Globe Telecom, LG Electronics and Schneider Electric. The project “specifically focused on expanding workplace readiness within the ICT sector” and “create[d] direct links between students, schools and industry leaders to support work-readiness among youth through structured, work-based learning” (World Economic Forum, 2020, p. 18). The WEF lauds many more such examples of public education attending to the needs of private employers (2020, pp. 17, 18, 19, et passim), assuring readers that “[m]isalignment between schools and employers and expensive models of high-quality learning limit access to the skills needed to enter the labour market, resulting in about 10 million young Africans struggling to find jobs each year” (2020, p. 17), all of which is promulgated without any acknowledgement, or perhaps understanding, that unemployment is a political economic phenomenon, not an educational one. What follows is a brief investigation of how this may have developed.

The rise of education for employment

Harvey (2007, p. 43) identifies the Powell Memorandum as the beginning of the implementation of neoliberal ideology in the US. Just prior to being appointed to the Supreme Court by Nixon, Lewis Powell circulated a private memo amongst the US Chamber of Commerce in August 1971. The purpose of the memo was to identify sources of and suggest remedies to the attack on American capitalism. Part of the attack, the memo stated, was of course being mounted by communists, socialists, and other organized labour, but these were not the primary sources identified. Rather it was from the "perfectly respectable elements of society: from the college campus, the pulpit, the media, the intellectual and literary journals, the arts and sciences, and from politicians" (Powell, 1971, pp. 2-3). Powell went on to say that in most of these groups the attack is only perpetrated by a minority within them, yet "these often are the most articulate, the most vocal, the most prolific in their writing and speaking" (1971, p. 3). Something had to be done.

One of the key strategies Powell recommended was to infiltrate both secondary and tertiary education with neoliberal doctrine as a vital, long-term approach to defend American capitalism and repel the attacks on it then underway (1971, pp. 19-20). Judging by the rise of un- and underemployment, coupled with the ascendancy of education for employment reviewed above, Powell's suggestion has been made quite effective.

A similar development occurred in Australia, though here it appears to have originated from within the government. The Karmel Report of 1973 was the first systematic intervention of the Australian federal government in education, with a comprehensive plan of goals and priorities (McLaren, 2014). With regard to the purpose of school, the Report stated that "[s]chools can build within themselves a community

where both education and people are valued, and where the influences of the market place do not dictate the price placed upon individual talents" (Karmel, 1973, p. 14). Note that this was published during Australia's full-employment era, which as mentioned above ended in 1975.

Over a decade later, with neoliberalism underway and rising rates of unemployment, the next Karmel Report described the purpose of school quite differently. Now the Australian government wished for "an improved relationship between secondary education and employment and tertiary education opportunities and requirements" (Karmel, 1985, p. 68), and it went on to say that although it "does not believe that the sole purpose of education is to fashion the young to the needs of the labour market; nor does it believe that this is the Government's intention" it nonetheless stated that "employment immediately after schooling or after further study, is an expectation for the great majority of people" (1985, p. 68). Moreover, to affirm the subordination that students as future employees were expected to incur, the Report explained that:

> [o]ne set of skills required in this role [as an employee] is that which involves selecting behaviour which is appropriate in the work place. When and how to accept authority, how to comply with directions and how to learn what is expected in different situations tend to be learned by experience and demonstrated in every day life…. Work experience programs and increasing employment of secondary students as part-time workers…offer the prospect of spreading understanding of labour market expectations among young people well before they seek to become fulltime members of it (p. 72).

In fact, the whole tenor of the Karmel Reports shifted under neoliberalism, with the latter infused with economic 'rationality', concepts, and jargon.

Recalling the insights above based on MMT, the entirety of the foregoing changes to education to align it with neoliberal values, aims, and outcomes, has been

both unnecessary and detrimental. For while the purpose of education has shifted toward preparation for employment and job-readiness, this has occurred in tandem with neoliberal policies that attack students and working people by deliberately keeping a large and growing stock of people un- and underemployed, stoking competition amongst them, much like a perverse form of musical chairs.

In the final section of this paper, I wish to imagine what education might look like if a full-employment policy were successfully pursued anew, much like it was under Keynesianism, and further, what consequences this might have for society and the environment more generally.

Environmental education escape plan from neoliberalism

Drawing on the insights of MMT explained above, returning to full employment through a Job Guarantee ought to be a priority not just for environmental and sustainability educators, but all educators. Tcherneva (2020) details how governments can guarantee jobs paying a living wage, democratically created, doing meaningful work that cares for people and the environment. In brief, this involves setting a socially inclusive living wage funded by the federal government using its currency sovereignty, with jobs created by local councils that align with community needs, many of which are envisioned to be 'care work', both for people and the environment, and are not easily automated. Achieving full employment in this sense would not only greatly improve the lives of the large and growing stock of people deliberately denied paid work (Tcherneva, 2020, pp. 27-38), but it would liberate education from the demand that it focus on serving the needs of employers and preparing young people for an uncertain future in a competitive labour market. With this educational emancipation attained, teachers and students could then focus on other pressing social and ecological issues, such as citizenship rights and responsibilities, democratic participation in society, and

rectifying biodiversity loss and climate change. To be sure, the Job Guarantee is not a panacea; in a well-functioning society, it seems likely that private sector jobs would, and should, provide significant employment opportunities. The point is that achieving and maintaining full employment is not the business of the private sector; this is a job for government in relation to its citizens in a decent society. With reference to history, the remainder of this section imagines what education under these conditions might look like.

The Keynesian era of full employment was a time of significant social progress: the civil rights movement, anti-war movement, and women's rights, were all underwritten by the assurance of paid work. Full employment also contributed to the radical student movement of this time, which reached its zenith in 1968 with the worldwide uprising of young people. As Ali and Watkins (1998, p. 11) explain:

> The generation of students who were on the campuses in 1968 had known neither unemployment nor defeat. They were critical of the previous generation…who had been unable to defeat unemployment and had permitted the rise of fascism…. Students everywhere experienced a system incapable of fulfilling its promises, let alone satisfying their intellectual and social needs…. This new stratum of students…developed a conscience as well as a political sensitivity which soon began to erupt on the streets of every major capital city and on every continent.

Hobsbawm (1994, p. 301) characterizes the student movement of the full-employment era similarly, for unlike their parents' generation

> the discontents of the young were not blanketed by the consciousness of living through times of staggering improvement…. The new times were the only ones that young men and women who went to college knew….they felt things could be better, even when they did not quite know how. Their elders, used to, or at least remembering, times of hardship and unemployment, did not expect mass radical mobilizations at a time when, surely, the economic incentive for them in the developed countries was less than ever before…. But, paradoxically, the fact that

> the impetus for the new radicalism came from groups unaffected by economic discontent…[meant that] they could ask for far more from the new society than they had imagined.

That under neoliberalism governments have chosen to abandon full employment and deliberately keep a large and growing stock of people, especially young ones, un- and underemployed, is, from the perspective of MMT outlined above, nothing less than a form of class warfare, committed against students and working people, with disastrous consequences for education that has become systematically exploitative, busily equipping young people with employability skills, even while governments target the 'optimal' rate of unemployment, which they easily obtain through underspending and other austerity measures (Mitchell & Fazi, 2017, p. 234). While the 'Great Dying' of the indigenous peoples of the Americas was an outright massacre, the neoliberal pursuit of unemployment is a form of 'soft power' used to discipline workers and students. Educators must know a better society, and a return to a full-employment era, similar to the one described above, might induce young people, and others who join them, to "ask for far more from the new society than they had imagined." Doing so would thus contribute to Australia's national educational policy goal that all young Australians become "[a]ctive and informed members of the community who…work for the common good, in particular sustaining and improving natural and social environments" (Council of Australian Governments Education Council, 2019, p. 8). Having expounded on the improvement of social environments through the Job Guarantee, I end by turning attention to the goal of sustaining natural ones, which is more directly the remit of environmental and sustainability educators.

Sustaining natural environments

Mentioned above is that both the Keynesian era of full employment and the neoliberal

era of unemployment have depended on economic growth to provide employment opportunities. Mainstream economists believe that the economy can grow forever because they are accustomed to viewing the economy in terms of value, expressed in prices (e.g. dollars, yen, etc.), which appear unlimited. But for over half a century ecological economists have been arguing for limits to economic growth because they view the economy in terms of volume of material and energy flows, collectively referred to as 'throughput' (Daly, 1993, p. 326; Daly & Farley, 2011, p. 6), the technical term for resources. These two perspectives of economic activity are connected, and Daly (2014, p. 63), amongst many other ecological economists, has argued that because of this connection, and the fact that the earth is finite, economic growth has limits. In other words, while the financial economy described above by MMT is an abstract, immaterial system, it is tethered to what economists call the 'real economy': the production and consumption of goods and services, which is a concrete, material- and energy-dependent system which does not just interact, but is coincident with the environment. A poignant example: the IPBES (2019, p. 12) identifies the innocuous sounding 'land-use change' as the single biggest cause of negative impact on nature since 1970, mostly through the expansion of agriculture which now occupies over one third of the earth's terrestrial surface. Is this land-use change part of 'the environment' or 'the economy'? Recall Moore's Capitalocene principle of the double internality: economy in the environment and environment in the economy; the answer of course is both. That is to say, the 'environmental crisis' is indistinguishable from an 'economic crisis'.

While environmental degradation continues to decline, throughput continues to increase, both in terms of humans' material (Lenzen et al., 2022) and energy use (International Energy Agency, 2021). Given the simple insight of ecological economics

above, a necessary feature of ecological sustainability is straightforward: the imposition of limits on throughput. But how are such limits to be imposed? If you decide to ride your bike, get solar panels, and grow your own vegetables while everyone else does the opposite, the imposition of limits on throughput necessary to achieve ecological sustainability and stem the environmental crisis will not be sufficient; such limits must be collectively imposed. So how will such collective limits on throughput be imposed? Educational politics and power must play a role.

I argued above that unemployment is a political economic phenomenon, not an educational one. This needs to be qualified, especially in light of the transdisciplinary perspective needed to understand and resolve the polycrisis of the Capitalocene. As contended, MMT demonstrates that unemployment is a political choice, not an economic necessity, contrary to mainstream economic doctrine which prohibits progressive policies like the Job Guarantee. Thus education does have a role in bringing an end to unemployment and neoliberalism more generally: it is needed to generate the collective understanding of the Job Guarantee as a political possibility, and other progressive policies. One of the key characteristics of the Job Guarantee mentioned above is the opportunity for the democratic creation of paid work through local council's consultation with the community. In this sense the Job Guarantee fulfils the traditional goal of socialism, much obscured by propaganda and twentieth century history (Chomsky, 1996, pp. 91-93): that working people have ownership and control over their work. On this issue Dewey's (1989, p. 76) call for an educated public, not just for democracy, but *as* democracy, was clear: "In order to restore democracy, one thing and one thing only is essential. The people will rule when they have power, and they will have power in the degree they own and control the land, banks, the producing and distributing agencies of the nation." Such an environmental democracy that grants

popular control over the land and other key institutions may impose the collective limits on throughout needed to end not just the environmental crisis, but the crisis of the Capitalocene. The political possibility of full employment would thus conduce to the ecological imperative of the collective imposition of limits on throughput.

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References

Alexander, S., & Gleeson, B. (2020). Urban social movements and the degrowth transition: Towards a grassroots theory of change. *Journal of Australian Political Economy*, *86*, 355-378.

Ali, T., & Watkins, S. (1998). *1968: Marching in the Streets*. Free Press.

Anthropocene Working Group. (2019). *What is the Anthropocene? – current definition and status*. Retrieved August 11, 2020 from http://quaternary.stratigraphy.org/working-groups/anthropocene/

Australian Bureau of Statistics. (1986). *The labour force, Australia: Historical Summary, 1966 to 1984*. Retrieved from https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6204.01966-84?OpenDocument

Australian Bureau of Statistics. (2020). *6202.0 Labour Force, Australia, Table 22. Underutilised persons by Age and Sex - Trend, Seasonally adjusted and Original*. https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release#unemployment

Bessant, J., Farthing, R., & Watts, R. (2018). *The precarious generation: A political economy of young people*. Routledge.

Blyth, M. (2002). *Great transformations: Economic ideas and institutional change in the twentieth century*. Cambridge University Press.

Board of Governors of the Federal Reserve System. (1998). *Monetary Policy Report*. Retrieved December 30, 2021 from https://www.federalreserve.gov/boarddocs/hh/1997/february/testimony.htm

Bossone, B. (2021). Why MMT can't work. *International Journal of Economic Policy Studies*, *15*. https://doi.org/10.1007/s42495-020-00055-w

Bowles, S., & Gintis, H. (1976). *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life*. Routledge & Kegan Paul.

Chomsky, N. (1996). *What Uncle Sam really wants* (A. Naiman & S. Niemann, Eds.). Odonian Press.

Commonwealth of Australia. (1945). *Full Employment in Australia*. Retrieved from http://www.billmitchell.org/White_Paper_1945/index.html

Connell, R. W., Ashenden, D. J., Kessler, S., & Dowsett, G. W. (1982). *Making the difference: Schools, families and social division*. Allen & Unwin.

Council of Australian Governments Education Council. (2019). *Alice Springs (Mparntwe) Education Declaration*.

Crozier, M. J., Huntington, S. P., & Watanuki, J. (1975). *The Crisis of Democracy: Report on the Governability of Democracies to the Trilateral Commission*. N. Y. U. Press.

Cutter-Mackenzie-Knowles, A., Logan, M., Khatun, F., & Malone, K. (2019). A cartography of environmental education. In E. Lees & J. E. Vinuales (Eds.), *The Oxford Handbook of Comparative Environmental Law*. Oxford University Press.

Daly, H. E. (1993). The steady-state economy: Toward a political economy of biophysical equilibrium and moral growth. In H. E. Daly & K. N. Townsend (Eds.), *Valuing the earth: Economics, ecology, ethics* (pp. 325-363). MIT Press.

Daly, H. E. (2014). *From Uneconomic Growth to a Steady-State Economy*. Edward Elgar.

Daly, H. E., & Farley, J. (2011). *Ecological economics: Principles and applications* (2nd ed.). Island Press.

Dawson, H. J., & Fouksman, E. (2020). Labour, laziness and distribution: Work imaginaries among the South African unemployed. *Africa*, *90*(2), 229-251. https://doi.org/10.1017/S0001972019001037

Dewey, J. (1989). *The Later Works, 1925-1953. Volume 9: 1933-1934* (J. A. Boydston, Ed.). Southern Illinois University Press.

Drumetz, F., & Pfister, C. (2021). The meaning of MMT, Banque de France Working Paper #833. https://publications.banque-france.fr/en/meaning-mmt

Gedye, S., & Beaumont, E. (2018). "The ability to get a job": Student understandings and definitions of employability. *Education + Training*, *60*(5), 406-420.

Harvey, D. (2007). *A brief history of neoliberalism*. Oxford University Press.

Hickel, J. (2021). *Less is More: How Degrowth Will Save the World*. Windmill.

Hobsbawm, E. (1994). *Age of Extremes: The Short Twentieth Century, 1914-1991*. Abacus.

Hudson, M. (2021). Finance capitalism versus industrial capitalism: The rentier resurgence and takeover. *The Review of radical political economics*, *53*(4), 557-573. https://doi.org/10.1177/04866134211011770

International Energy Agency. (2021). *World Energy Balances Highlights (2021 Edition)*. https://www.iea.org/data-and-statistics/data-product/world-energy-balances#data-sets

International Labour Organization. (2022). *Global Employment Trends for Youth 2022: Investing in transforming futures for young people*. https://www.ilo.org/global/publications/books/WCMS_853321/lang--en/index.htm

IPBES. (2019). *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf

IPCC. (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. C. U. Press. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf

Karmel, P. (1973). *Schools in Austalia: Report of the Interim Committee for the Australian Schools Commission*. A. G. P. Service.

Karmel, P. (1985). *Quality of education in Australia: Report of the Review Committee*. A. G. P. Service. https://digitised-collections.unimelb.edu.au/bitstream/handle/11343/115449/scpp-00095-nat-1985.pdf?sequence=1

Keynes, J. M. (2009). *The general theory of employment, interest and money*. Classic Books America. (1936)

Koch, A., Brierley, C., Maslin, M. M., & Lewis, S. L. (2019). Earth system impacts of the European arrival and Great Dying in the Americas after 1492. *Quaternary Science Reviews*, *207*, 13-36. https://doi.org/https://doi.org/10.1016/j.quascirev.2018.12.004

Lenzen, M., Geschke, A., West, J., Fry, J., Malik, A., Giljum, S., Milà i Canals, L., Piñero, P., Lutter, S., Wiedmann, T., Li, M., Sevenster, M., Potočnik, J., Teixeira, I., Van Voore, M., Nansai, K., & Schandl, H. (2022). Implementing the material footprint to measure progress towards Sustainable Development Goals 8 and 12. *Nature Sustainability*, *5*(2), 157-166. https://doi.org/10.1038/s41893-021-00811-6

Lewis, S. L., & Maslin, M. A. (2015). Defining the Anthropocene. *Nature*, *519*(7542), 171-180. https://doi.org/10.1038/nature14258

Marshall, E. A., & Symonds, J. E. (Eds.). (2021). *Young Adult Development at the School-to-Work Transition: International Pathways and Processes*. Oxford University Press.

McLaren, J. (2014). *Karmel Report: Schools in Australia*. Dictionary of Educational History in Australia and New Zealand. Retrieved August 10, 2022 from https://dehanz.net.au/entries/karmel-report-schools-australia/

Mitchell, W., & Fazi, T. (2017). *Reclaiming the State: A Progressive Vision of Sovereignty for a Post-Neoliberal World*. Pluto Press.

Mitchell, W., Wray, L. R., & Watts, M. (2019). *Macroeconomics*. Red Globe Press.

Moore, J. W. (2015). *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso.

Moore, J. W. (Ed.). (2016). *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. PM Press.

Morgan, J. (2019). *Culture and the political economy of schooling: What's left for education?* Routledge.

Mosler, W. (2010). *Seven Deadly Innocent Frauds of Economic Policy*. Valence Co., Inc. http://moslereconomics.com/wp-content/powerpoints/7DIF.pdf

Mosler, W. (2022). *White Paper: Modern Monetary Theory (MMT)*. Retrieved August 3, 2022 from http://moslereconomics.com/mmt-white-paper/

New York State Education Department. (2015). *100.2 General school requirements*. New York State Education Department. Retrieved October 5, 2020 from http://www.p12.nysed.gov/part100/pages/1002.html#h

New Zealand Ministry of Education. (2020). *Action plan for Pacific education 2020–2030*. Ministry of Education Retrieved from https://conversation.education.govt.nz/conversations/action-plan-for-pacific-education/

Ontario Ministry of Education. (2013). *Creating pathways to success: An education and career/life planning program for Ontario schools*. Queen's Printer for Ontario Retrieved from http://www.edu.gov.on.ca/eng/document/policy/cps/CreatingPathwaysSuccess.pdf

Palley, T. I. (2019). What's wrong with modern money theory (MMT): A critical primer, FMM Working Paper, No. 44, Hans-Böckler-Stiftung, Macroeconomic Policy Institute (IMK), Forum for Macroeconomics and Macroeconomic Policies (FFM), Düsseldorf. http://hdl.handle.net/10419/213401

Piketty, T. (2017). *Capital in the Twenty-First Century* (A. Goldhammer, Trans.). The Belknap Press of Harvard Univesity Press.

Pitchford, J. D. (2003). Problems of Australian macro-economic policy in the seventies. In P. Groenewegen (Ed.), *Australian economic policy, theory and history* (pp. 199-214). Faculty of Economics and Business, University of Sydney.

Powell, L. F. J. (1971). *Powell Memorandum: Attack On American Free Enterprise System*. https://www.reuters.com/investigates/special-report/assets/usa-courts-secrecy-lobbyist/powell-memo.pdf

Robinson, J. (2003). Contradictions in capitalism today: Where do we go from here? In P. Groenewegen (Ed.), *Australian economic policy, theory and history: R.C. Mills Memorial Lectures, 1958-2003* (pp. 111-122). Faculty of Economics and Business, University of Sydney.

Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, III, F. S., Lambin, E. F., …, & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, *461*, 472–475.

Samuelson, P. A., & Nordhaus, W. D. (2010). *Economics* (19 ed.). McGraw-Hill Irwin.

Siri, A., Leone, C., & Bencivenga, R. (2022). Equality, Diversity, and Inclusion Strategies Adopted in a European University Alliance to Facilitate the Higher Education-to-Work Transition. *Societies*, *12*(5), 140. https://www.mdpi.com/2075-4698/12/5/140

Sloman, J., Norris, K., & Garratt, D. (2010). *Principles of economics* (3rd ed.). Pearson.

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., …, & Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), 1259855-1259851–1259855-1259810.

Sukarieh, M., & Tannock, S. (2015). *Youth rising? The politics of youth in the global economy*. Routledge.

Tcherneva, P. R. (2020). *The Case for a Job Guarantee*. Polity.

UK Department for Education. (2017). *Unlocking talent, fulfilling potential: A plan for improving social mobility through education*. Department for Education Retrieved from https://www.gov.uk/government/publications/improving-social-mobility-through-education

UNESCO. (2016). *Education 2030: Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4*. UNESCO.

UNESCO, & ILO. (2018). *Taking a whole of government approach to skills development*. https://unesdoc.unesco.org/ark:/48223/pf0000265549

United Nations. (1972). *Report of the United Nations Conference on the Human Environment*. https://digitallibrary.un.org/record/523249?ln=en

University of Central Florida. (2022). *Unleashing Potential: Becoming the University for the Future*. https://www.ucf.edu/unleashing-potential/

UNSW Sydney. (2020). *2025 Strategy Update*. https://www.2025.unsw.edu.au/

US Congress. (1946). *The Employment Act of 1946*. Retrieved from https://fraser.stlouisfed.org/title/employment-act-1946-1099

Wallerstein, I. (1974). *The modern world-system I: Capitalist agriculture and the origins of the European world-economy in the sixteenth century*. Academic Press.

Wallerstein, I. (2011a). *The modern world-system III: The second era of great expansion of the capitalist world-economy, 1730s-1840s*. University of California Press. (1989)

Wallerstein, I. (2011b). *The modern world-system IV: Centrist liberalism triumphant, 1789-1914*. University of California Press.

Williams, S. J., & Taylor, R. (Eds.). (2022). *Sustainability and the new economics: Synthesising ecological economics and Modern Monetary Theory*. Springer.

Willis, P. E. (1977). *Learning to labour: How working class kids get working class jobs*. Saxon House.

Wintersteller, T., Wöhrer, V., Danz, S., & Malik, M. (2022). "They Really Only Look for the Best": How Young People Frame Problems in School-to-Work Transition. *Social inclusion*, *10*(2), 335-346. https://doi.org/10.17645/si.v10i2.5158

World Bank. (2018). *Learning to Realize Education's Promise*. https://www.worldbank.org/en/publication/wdr2018

World Economic Forum. (2020). *Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution*. https://www.weforum.org/reports/schools-of-the-future-defining-new-models-of-education-for-the-fourth-industrial-revolution/

World Economic Forum. (2022). *Catalysing Education 4.0: Investing in the Future of Learning for a Human-Centric Recovery*. https://www.weforum.org/reports/catalysing-education-4-0-investing-in-the-future-of-learning-for-a-human-centric-recovery/

Wray, L. R. (2015). *Modern Money Theory: A primer on macroeconomics for sovereign monetary systems* (2nd ed.). Palgrave Macmillan.