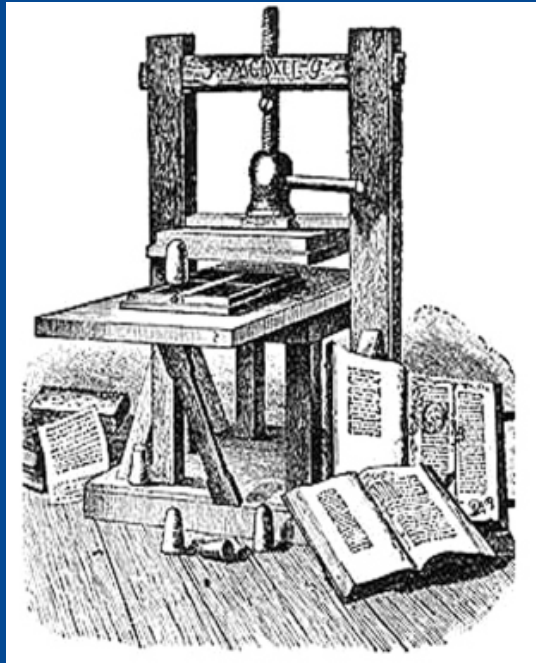


Knowledge Cultures

A Multidisciplinary Journal

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Knowledge Cultures

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A Multidisciplinary Journal

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Learning, technologies, and time in the age of global neoliberal capitalism

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(eds.)

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CONTENTS

**EDITORIAL: LEARNING, TECHNOLOGIES, AND TIME
IN THE AGE OF GLOBAL NEOLIBERAL CAPITALISM [11]**

SARAH HAYES, PETAR JANDRIĆ

**UPDATE YOURSELF:
LEARNING TO FORGET IN THE KNOWLEDGE SOCIETY [18]**

GERALD ARGENTON

**THE SLOWLY STRUCTURED CLASSROOM: NARRATIVE TIME,
LIVED EXPERIENCE AND THE CONTEMPORARY HE CLASSROOM [32]**

AMANDA RUSSELL BEATTIE

YOU'VE GOT MAIL: TRACKING AND FRAMING ACADEMIC LIVES [49]

CHRISTINE SINCLAIR

**TIME, *TELOS*, *TECHNE*, *DOXA*:
THE CHALLENGES OF MASSIVE OPEN ONLINE COURSES [65]**

RICHARD TERRY

**ENABLING BOTTOM-UP PRACTICES IN URBAN
AND ARCHITECTURAL DESIGN STUDIOS [84]**

BURAK PAK

**UNLOCKING THE POTENTIALITY AND ACTUALITY OF ICTs
IN DEVELOPING SUSTAINABILITY-JUSTICE
CURRICULA AND SOCIETY [103]**

VASSILIOS MAKRAKIS

**ASSEMBLY LINES OR ASSEMBLAGES: WHAT THE HUMAN EQUATION
CAN TEACH US ABOUT CREATIVITY AND
A MODERN EDUCATION SYSTEM IN THE DIGITAL AGE [123]**

PAUL SYME

**BRAIN-BASED LEARNING FOR ACCELERATED ONLINE EDUCATIONAL PROGRAMS
AS A FOUNDATION FOR RESISTANCE OF
PREDATORY PRACTICES ON THE "TIME-POOR" [144]**

LYDIA ROSE

THE CHANGING CHILD [163]

JULIE RESHE

THE ETHICS AND IMPACT OF DIGITAL IMMORTALITY [178]

MAGGI SAVIN-BADEN, DAVID BURDEN, HELEN TAYLOR

**FEATURE ARTICLE: INTERVIEW WITH SIÂN BAYNE.
FROM ANTHROPOCENTRIC HUMANISM TO
CRITICAL POSTHUMANISM IN DIGITAL EDUCATION [197]**

SIÂN BAYNE, PETAR JANDRIĆ

EDITORIAL: LEARNING, TECHNOLOGIES, AND TIME IN THE AGE OF GLOBAL NEOLIBERAL CAPITALISM

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The study of time, technology and learning has preoccupied scholars across disciplines for decades. From the psychological impacts of networked gadgets to the nature of perception, attention, communication and social interaction, through the paradigm of 24/7 teacher/student availability, to the acceleration of study programs and research, these themes are dialectically intertwined with human learning in the age of global neoliberal capitalism. Indeed, for some scholars, time has been discussed as the ‘fourth dimension in the globalisation of higher education’, due to the experience of compressed time and a perception of ongoing pressure for academics to master time (Walker, 2009). A general understanding of time, now reified as a resource, or an investment that is definable and exchangeable, has accompanied the establishment of capitalism to pervade our lives, our language, our higher education institutions, our teaching, and our learning (Walker, 2014). As modern global capitalism has progressed from industrial production to incorporate new digital technological innovations and knowledge-based economies there are assumptions that technology drives our accelerated experiences of time. Certainly technology is implicated, when many of us feel that we may be judged as bad by any decision to ‘disconnect’ (Powers, 2010: 35) from an all-consuming connectivity. Yet ‘time compression has multiple dimensions’ and whilst temporal aspects concerning technology and learning are now being addressed by a range of authors, there is an urgent need to connect social theory with detailed empirical studies (Wajcman, 2008: 59).

In response to this, using various critical approaches and methodologies the authors in this volume ask diverse probing questions, from varied cultural locations around the world, about the multi-dimensional, individual and social experience of

time, by teachers and learners of all kinds, imbued in contemporary neoliberal technoscapes. Many themes connect to constitute what we can come to 'know', yet the 'social' and the 'technical' are frequently still discussed as if these were separate spheres, in relation to human learning, rather than mutually shaping of each other within capitalism and influenced further by the ideological construct of time. Duncheon and Tierney (2013) suggest that 'traditional theoretical and methodological approaches to time research no longer capture the nuances of digital, temporal realities' which require theoretical analysis, firstly of clock time, measured in linear units; then socially constructed time, experienced subjectively according to people's social and cultural contexts; and lastly, as virtual time, which as a new category, synthesises emergent temporal theory in the digital age (Duncheon & Tierney, 2013: 239). Though diverse in nature, the articles in this collection discuss both socio-cultural and temporal transformations linked to technology and learning and can be classified into three broad themes. The first theme is interested in temporal experiences within time and learning; the second theme is about practical implementations of these concerns, and the third theme inquires into relationships between our understanding of time and human nature. In many articles, the boundaries between these themes are blurred and fluid. Yet, this general classification does indicate the present state of the art in studies of time, technology and education.

In the opening article for this collection, "Update Yourself: Learning to forget in the Knowledge Society", Gerald Argenton describes social acceleration using the analogy of software updates. He inquires into the loss of connections between present society and its past and future alternatives, and the transformation of the present into scattered moments. On this basis, Argenton argues that academics should reclaim time free from administrative and other duties in order to fulfill their role of knowledge developers and social critics. The next paper, "The Slowly Structured Classroom: Narrative time, lived experience and the contemporary Higher Education classroom" by Amanda Russell Beattie, brings this critique directly into the classroom. Focusing on the negative aspects of our current understanding of time in teaching and learning, Russell Beattie argues for establishing relational and affective classroom communities through story-telling and reflexivity. In "You've Got Mail: Tracking and framing academic lives" Christine Sinclair focuses on the information overload facing contemporary academics through extensive usage of e-mail. Designed as an explorative study within the framework of third-generation activity theory, this study has returned a negative result. Therefore, Sinclair uses Cultural Historical Activity Theory (CHAT) to show that counting and categorising emails misses the crucial problem of higher education in relation to neoliberal imperatives. In conclusion, the study shows the need to understand e-mail usage as a collective practice and points towards various implications of such an approach.

These articles indicate the importance of 'experience' in education, not simply received as a finished product, swiftly delivered to students by universities, and

reified in recent higher education policy texts as if it were a thing entitled: ‘the student experience’ (Hayes and Jandrić, 2016; Jandrić and Hayes, forthcoming). Such a rendering is misleading, when experience is really an ongoing narrative, produced *over time* as part of challenging learning processes, such as growth, autonomy and thinking (Argenton, 2015: 931). Facts and figures can surely provide many useful inputs, yet the relationship between time and education resides primarily in the realm of human feelings and emotions. This should not be confused with a fetishisation of student satisfaction, that serves to constitute neoliberal subjectivities in education (Amsler, 2011: 58), but rather the classroom might be reclaimed as an emancipatory space where students and teachers can be creative, emotional and imaginative, as they take time, to embrace their individual identity and subjectivities. Here the emphasis is on time, not as given, or natural, but rather time is understood as culturally and individually specific and also ontological.

Shahjahan makes the important point that ‘time colonizes our bodies by reconfiguring, reorganising, or ordering it to enact certain postures, language, and gestures that increasingly manifest neoliberal subjectivity. In busy lives, we may ‘set aside’ time to focus on our bodies: to eat, to work out, to sleep, relax, seeing these activities as an ‘investment’ (Shahjahan, 2015: 493). This simply treats our bodies as inert objects to be managed by the mind (Freiler, 2008) and reinforces a dominant culture of disembodiment (Rendon, 2009) where our bodies are not really acknowledged ‘except as a commodity whose exchange is tied to market value’ (Shahjahan, 2015: 494). To re-embody the body in the learning environment, Shahjahan suggests we need to slow down, and mindfully value our bodies as valid knowledge producers that aid us in generating focus and stillness that anchors us in the ‘now’ moment. This approach is appropriately supported by some of the researchers in this section and developed through their choice of method. In order to explore their own experiences of time, Amanda Russell Beattie and Christine Sinclair have each used a fairly uncommon but highly appropriate method of auto-ethnography (Starr, 2010). We are especially fascinated by Sinclair’s failure to explain her own experience using the third-generation activity theory. Indeed, we believe that Sinclair’s negative result presents a very important contribution, and needs to be taken as a signpost for the future. In studies of time and education, human experience simply cannot be explained by dry scientific facts or indeed packaged and delivered – and these three articles offer new and important directions for forthcoming research in the field.

The next group of four articles inquires into human relationships with time in particular educational settings. In “Techné, Telos, Doxa: The challenges of Massive Open Online Courses”, Richard Terry explores Massive Open Online Courses (MOOCs) from the perspectives of time as social and technological practice imbued in global neoliberal capitalism. Drawing on Pierre Bourdieu’s theoretical concept of *doxa*, Terry inquires into the discourse of technology-focused research in the educational domain, which even if unconsciously, can

remove human beings from educational praxis (Hayes and Jandrić, 2014: 204). In the next paper too there is a sense of that, via decades of neoliberalisation, urban design has become increasingly isolated from society and users. In “Strategies and Tools for Enabling Bottom-up Practices in Architecture and Urban Design Studios”, Burak Pak explores the temporalities of emergent practices in the fields of architecture and urban design. Pak investigates bottom-up practices that characterise design tactics grounded in time, and suggests Participatory Action Research (PAR) as a possible route towards enabling bottom-up social knowledge building. On such a theoretical basis, Pak proposes alternative routes towards enabling bottom-up practices in the design studio.

“Unlocking the Potentiality and Actuality of ICTs in Developing Sustainability-Justice Curricula and Society” by Vassilios Makrakis explores the potentiality and actuality of information and communication technologies in education for sustainability and justice. Makrakis develops the DeCoRe plus methodological approach aimed at pre-service teacher education, and shows that education for sustainability and justice can be highly enhanced by two major complementary trends: Open Education Resources (OER) and OpenCourseWare (OCW). In this way, it is claimed, the existing temporality of being can be transformed into a new temporality of becoming. The last paper in this series, “Time to Learn Creatively” by Paul Syme, analyses the provincial Department of Education, Nova Scotia, Canada’s Action Plan for Education, 2015. Looking into theory, Syme first shows that new socio-economic structures and challenges require creative, adaptive, and imaginative citizens. Then he turns to practice, and analyses the main pillars of the Plan – the 3R’s: Renew, Refocus, Rebuild. Syme’s analysis shows that where modernist principles become inadequate, constructivist pedagogies might accommodate the needs of future citizens in relation to creative development in shifting notions of time.

Focused on various practical problems and applications, this group of articles indicates the importance of time studies in diverse aspects of academic work and experience. From the fully online world of Massive Open Online Courses, through to a combination of online and offline work on the design studio, to political questions pertaining to justice curricula and (provincial) education strategies, the shifting notions of time have become basic concerns at all levels of education. At the nexus between time, education, and technology, this collection has clearly arrived into the area where theory and practice are intertwined in a complex interplay called critical praxis (Freire, 1985). This application of theory as ‘an element in action leading to new social forms’ (Horkheimer, 1972: 216) demonstrates that studies of time, education, and technology are concerned with practical everyday matters, and also with over-reaching social issues such as equity, justice and emancipation. As a consequence, this group of articles sends an important message that time studies should enter more deeply, and also more extensively, into mainstream educational research.

The third, final theme of this Special Issue, is focused on relationships between time and human nature. The first paper in this series, “The ‘Time-Poor’, the ‘Educational Industrial Complex’ and the Biology of Learning: Brain-based learning in accelerated online educational programs” by Lydia Rose, critically examines the notion that we all have the same amount of time and therefore the same responsibilities for its management. Through careful examination of the functions of the human brain, Rose rethinks and resists neoliberal constructions of time and the Educational Industrial Complex. She concludes that neoliberal practices encourage predatory marketing to these groups, and seeks resistance in the practices of brain-based learning. In “The Changing Child”, Julie Reshe develops two conceptual models: repressive temporality of common sense and emancipative temporality of critical thinking. Reshe shows that the perspectives of common sense construct a child as a passive object, and that such constructions are unsuitable for emancipation and critique. She shows that contemporary mainstream critical pedagogy – in spite of its proclaimed criticality – still retains aspects of repressive common sense temporality. On that basis, she proposes a continuous model of transition between childhood and adulthood, which is never fully completed, and which reshapes critical emancipatory education into a continuous never-ending process. The final article in this Special Issue, “The Ethics and Impact of Digital Immortality” by Maggi Savin-Baden, David Burden, and Helen Taylor, explores the emerging concept of digital immortality, defined as the continuation of an active or passive digital presence after death. The authors examine available literature around various aspects of digital immortality: technological, emotional, social, financial, legal... On that basis, the authors conclude that digital immortality – at least for the time being – is still very far from a viable realisation and is indeed a potential cause for concern.

Articles gathered around the theme of relationships between time and human nature inevitably bump into restrictions caused by a human lack of knowledge about ourselves. The relationship between brain-based learning and accelerated learning is uncertain, and its emancipatory opportunities are not particularly clear. Yet, Rose presents a clear case of problems associated with the Educational Industrial Complex, thus connecting the individual and the social, the inherited and the constructed. These articles also bump into various technological restrictions. However, dismantling the myth of digital immortality, Maggi Savin-Baden, David Burden and Helen Taylor again arrive to the inevitability of looking at the individual, the technical and the social in reference to each other. Finally, Reshe shows that studies of time and education reveal certain problems with our existing critical theories. Perhaps we are not as critical as we would like to be, and this research direction offers a fresh opportunity to examine our own theories and practices. Certainly, in compiling this Special Issue, the irony was not lost on the editors or the authors concerning the challenge (due to lack of time) for bringing this collection together! Studies of relationships between time and human nature thus provide us with two main insights: an understanding of our own limitations,

and fresh theoretical and practical opportunities for improving our existing theories.

This Special Issue has identified three main themes in and around studies of time and education. The first theme points towards the importance of lived experiences and raises questions about reclaiming time for learning individually and collectively, when in a neoliberal context, there is frequent discontinuity that hinders us from making connections over time. Critically reflexive thinking enables people to re-write their lived experiences, whether this involves their approach towards emails or the ways in which they teach. Personal narratives capture experience and create knowledge that is autobiographical, but also not linear. Thus new directions for forthcoming research in the field are identified. The second theme points towards the importance of time studies in contemporary education, and concludes that time should get a much more prominent place in educational research. Time frames and a sense of purpose can structure educational practice, but under these circumstances we can also question what is not discussed, for example, in the virtual spaces of MOOCs. We can notice where human participation may be missing too, when, as a result of decades of neoliberalisation, architecture and urban design have become increasingly isolated from society – and most importantly – users. The third theme points towards the limits of our science and ourselves as human beings, and shows that understanding temporal aspects of human nature can create important inputs to theories that seem fixed and complete. These themes are though just general conclusions that cannot explain nuances contained in the presented papers. However, they do indicate the rising importance of studies of time and education, and we are sure that this field will significantly grow in the future.

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UPDATE YOURSELF: LEARNING TO FORGET IN THE KNOWLEDGE SOCIETY

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ABSTRACT. Social acceleration may be described through the analogy of software updates. That is, updating to the latest requires some sort of forgetting of the former. This article argues that knowledge is increasingly severed from learning and thinking, following Bauman's (2005) insight that contemporary society no longer produces a culture of learning but rather a culture of forgetting, disengagement and discontinuity. First, I will review the development of the knowledge society and its promise, which social acceleration will let us forget that the same promise is still pending in contemporary discourse. Then I will address the problem of disengagement, or fear of involvement, which consequently alters the relation people have with each other and learning. Discontinuity is when society loses its connection with its past and future alternatives. Time ceases to be inscribed in duration to become scattered moments, drifting loose with the relentless overflow of information. However, learning takes time; it is a built-in property that was also forgotten alongside the 'updating' of the contemporary conceptions of knowledge. One needs time to think and connect what was, what is and what could be to foster imagination and creativity, to figure out that society could be otherwise and become an object of critique, and most importantly, an object of involvement and learning.

Keywords: forgetting; promise; knowledge society; involvement; time

1. Introduction

The argument of this article is that knowledge is increasingly severed from its relation with learning and thinking. Following Bauman's (2005) insight that contemporary society no longer feels itself a culture of learning and accumulation of knowledge, it seems instead a culture of forgetting, disengagement and discontinuity.

In education, knowledge is related to the dimension of learning. It is a process that occurs between the mere availability of knowledge (developed below under

the term of “potentiality” (Rosa, 2014: 126)) and its actual acquisition or understanding, thus requiring time and some involvement on the part of the learner. Knowledge and its related practices are a part of what we call culture. It makes culture the repository of learning, involvement and continuity. So how can a culture become one of forgetting?

Bauman (2005) describes such a culture as a state of contemporary society in which social forms such as conditions of action and life strategies are changing so fast that they become obsolete before the actors have a chance to learn them, let alone understand them properly. Accordingly, one is prompted to forget previous learning to embrace equally short-lived new promises and new solutions. This implies not only a new status of knowledge as developed by Lyotard (1983), but also a new status of ignorance as a by-product of the overflow of information, different from a bare lack of knowledge (Bauman, 2005; Giroux, 2014).

Social acceleration may be described through the analogy of software updates. That is, whenever newer ‘versions’ are overwritten on previous ones, updating to the latest requires some sort of forgetting of the former. In the following, the respective dimensions of forgetting, disengagement and discontinuity will be discussed.

The first section attempts to trace the advent of the knowledge society to its roots and consider the promises and prognosis that were made by then. Promises that were never meant to be kept, and were forgotten to leave place to the successive updates of newer, more efficient, more gratifying ones. To illustrate this, I find particularly revealing to review the peculiar first chapter of *The Postmodern Society: A Report on Knowledge* (Lyotard, 1983) and the sociocultural context under which it was written. We may summarise its argument as twofold. It both describes the developing knowledge society and heralds its *promise*, ages ahead of the available technology and social conditions of the 1980s. Though, the swift development of information technologies will easily let us forget that it is the same broken promise which is still pending in contemporary discourse, some 40 years after Lyotard.

Then I will address the problem of disengagement, that is, the fear or burden of involvement, through the example of networked relations which connect as much as they isolate, even in relations such as friendship (Turkle, 2011). Such a contemporary tendency is not to be overlooked, because it alters the relation people have with each other, learning and the unknown.

Discontinuity is when society loses its connection with its past and its future alternatives (Bauman, 2005; Eriksen, 2010). Under such conditions, educational institutions such as schools and universities cannot be places of learning and thinking unless they allow singular moments, requiring time that is not measured or assessed, to occur. Learning takes time; it is a built-in property of learning that was forgotten alongside the ‘updating’ of the contemporary conceptions of knowledge and learning. I will expose critical concerns about the possibility to reduce knowledge to “the form of informational commodity” to be sold and consumed

(Lyotard, 1983, p.5) in its relations with learning and thinking. It is the problem of discontinuity or as Jameson (in Lyotard, 1983, Foreword) has it, the problem of the relationship to temporality.

2. The Broken Promises of the Knowledge Society: Remembering Computerised Societies of the Early 1980s

The knowledge society and its former versions

The social condition known as the knowledge society has recently developed in many ramifications that have in common that they share an economical paradigm that Peters (2013) calls knowledge capitalism, namely, knowledge creation and knowledge production under conditions of capitalism. Certainly, the term knowledge society would suppose that its components are of social nature, instead of economical or technological. But I will keep the term ‘society’ to highlight neither the creators nor the producers of knowledge, but the end-users, the consumers of such knowledge, users that may become entangled in a web of social conditions that, borrowing Bauman’s expression, melt and change faster than the time it takes for them to cast.

First, let us briefly consider the socio-historical background of knowledge society which has, until now, bore many names and supported many causes. Lyotard (1983) describes knowledge as the major stake in the world wide competition for power. This is what makes the *Report on Knowledge* a valuable contribution to the understanding of the evolution of the relations to knowledge in the early knowledge society. However, one does not have to wait for him to follow the evolution of communication sciences in the early 20th century (whence the term ‘communication’ acquired its contemporary meaning) in their relation with what Mattelart (2004) calls the Triangle of Power. Namely, government, corporations and military intelligence, which were known to be the main funding sources for the research and development of theories, practices and technologies that would never have existed without it. The development of communication technologies have been heavily backed by the need for law enforcement applied to mass society (Le Bon, crowd psychology, 1895), media control and propaganda (Lasswell, 1927), radio signal transmission and encryption technology (Shannon and his communication model (1949) sees the first use of the term ‘information’ in its contemporary meaning), ballistic missile trajectory computation (Von Neumann and the ENIAC, 1947). The former were government funded, the latter applied to military uses (Mattelart, 2004).

After WW2, some scientists, grieving that the products of science were used in warfare and massive destruction, critiqued the ‘modern barbarism’ unleashed in the name of the Triangle of Power.

Among them, mathematician and engineer Norbert Wiener, founder of cybernetics, proposed not only a theoretical model for interpreting the world through the unifying concept of communication, but also the bold project of a

fundamental reformation of human society, which core value was to be the transparency and commensurability of communication (read: information processing). Wiener called it the *communication society*, a yet-to-come *technology-led society* living under the hegemony of information processing machines, or more precisely, in symbiosis with these, because in Wiener's view, it was possible to explain the behaviour of every living being through the analogy of data processing (Breton, 1997). He is one of the first who argued the possibility to equal human knowledge to quantities of information. His influence inspired the rise of popular science magazines from the 1950s till 1960s, filled with the glittering images of a cybernetic future. Though, as time passed, the communication society seemed late to show up and was later forgotten to leave place to the *information society*, boosted by the later development of information technology, which core concept was still a technological one (Breton, 1997).

In 1976, the sociologist Daniel Bell coins the term 'knowledge society' in describing an *economic shift* from an industrial society that produces material goods to a post-industrial economy in which the production was concentrated in services, ideas and communication (Hargreaves, 2003). The knowledge economy now focuses on knowledge generation rather than its mere technological processing and diffusion. Though, it also has its own bold project, which will be discussed below. One may wonder where the learning has gone when knowledge is 'processed' and 'generated'. When accessibility to knowledge is deemed to be the sufficient condition for its learning, does knowledge production and knowledge acquisition, that is, learning, occur in the same breath?

I believe that one of the most interesting examples to illustrate this is Lyotard's *The Postmodern Condition* (Original French version 1979, English translation 1983) rightly subtitled *A Report on Knowledge*, and particularly its peculiar first chapter. A report on knowledge can usually be understood as a detailed account of the present condition of knowledge at the time when it was written. However, some kind of a prospect about its future is also expressed in it. So that the *Report on Knowledge* seems also to herald what I call the promise of the knowledge society. I will consider briefly some of the key words of the first chapter, titled "The field: Knowledge in computerized societies", which mirrors quite closely the stance of the above mentioned evolution of the concept of knowledge society and its promise.

- The equation of knowledge and learning to information (Lyotard, 1983: 4, emphasis added).

"The nature of knowledge cannot survive unchanged within this context of general transformation. It can fit into the new channels and become operational only if learning is translated into *quantities of information*."

- Knowledge production and knowledge economy (Lyotard, 1983: 4–5, emphasis added).

“Knowledge *is and will be* produced in order to be sold, it *is and will be* consumed in order to be valorized in new production (...).”

“Knowledge in the form of *informational commodity* indispensable to productive power *is already and will continue to be* a major – perhaps the major – stake in worldwide competition for power.”

Lyotard’s work is better known for its arguments about metanarratives and legitimation, which he develops extensively in the subsequent chapters. However, in this first chapter of *The Postmodern Condition*, although Lyotard warns that “[a]t any rate, we know it is unwise to put too much faith in futurology” (Lyotard, 1983: 3), the tone and style of the chapter is indeed filled with prospective or predictive expressions, such as ‘is and will be’ (Cf. above quotations). If counted, there are 15 occurrences of such expressions in the mere 4 pages of the chapter. Knowledge here faces the ultimatum to become “operational (that is: commensurable) or [to] disappear” (Lyotard, 1983: xxiv) to conform the needs of the forthcoming developments of the new economic order. We can read this chapter, cautiously sent back to the realm of possibilities in Lyotard’s following developments about the death of the modern metanarratives, as referring to the (new and improved) postmodern metanarrative of information technology, in other words, its promise.

The promise

The ‘reporting’ of the state of knowledge and its ‘prospective’ developments made here have a certain similarity with the same prospects voiced by Wiener some 30 years before. Lyotard himself is widely referring to the advances in communications that have taken place since WW2 as being a cause, if not *the* cause that affected the state of knowledge (Malpas, 2003). And arguably, by titling his first chapter “Knowledge in computerized societies”, Lyotard seems to reiterate the Wienerian promise of an “hegemony of computers” (Lyotard, 1983: 4). Considering that *The Postmodern Condition* is a report on knowledge, we are entitled to believe that it describes the state of society by the time it was written, in the year 1979 (for the French original version). Though, the swift development of computer technologies will easily let us forget that there was *no such thing as* a computerised society or hegemony of computers in those days. To verify that, suffice to take a look at what the computer market looked like then. I will use an advertisement published in a computer magazine (*Byte*, July 1980, see Figure 1 below) as an example.

In this advertisement for a new model of computer, the maker gladly boasts to provide the potential customer with a machine fit with a top-of-the-art 10MB Hard Disk for the nice price of \$3495 (USD). A quick rate conversion using an inflation calculator¹ tells us that \$3495 in 1980 was the approximate equivalent of \$10700 (£7400) by now. To sum up, such a machine was neither available to an average income household nor average budget companies, its use was limited to governmental institutions or major companies that could afford it. Moreover, one

can hardly imagine the possibility of making and sustaining a hegemonic computerised society out of the low specifications of the early 1980s computer technology, also given the fact that networking technology was not yet available in civil applications.

Figure 1 Advertisement in a computer magazine in the early 1980s (*Byte*, July 1980).

10 Megabyte Hard Disk
\$3,495*

5440-12 Top Load Drive
* Factory rebuilt 10MB cartridge disk drive only
A new Cameo Data Systems controller is available for \$1,495
\$4,495 for a brand new Ampex 10MB drive only

COMPUTER COMPONENTS

Circle 279 on inquiry card. 5848 Sepulveda Boulevard Van Nuys, California 91411 213•786-7411

BYTE July 1980 291

Source: http://www.marcofolio.net/images/stories/fun/other/history/10_mb_harddisk.jpg
(Original picture truncated for emphasis purposes).

The above arguments allow us to understand the knowledge society, both as described by Lyotard and after him, as a twofold structure whose respective components are not in phase with each other. First, there is the *actual* knowledge society, surrounded with information technology which is functional, available and widespread in industry and society. It is characterised by the rise of the knowledge economy and the equation of knowledge to information that is pertinently observed by Lyotard. Knowledge, Lyotard argues, is no longer organised toward the fulfilment of human goals but valued in terms of efficiency and profitability (Malpas, 2003).

Second, there is the *promise* of the knowledge/information society, one which is never to be upheld, because information society is, borrowing Saito's (2010) expression, 'like a ghost with no legs'. Unlike its material counterpart, the promise of the information society is always ages ahead of actual technology and social conditions, a renewed version of the 'yet-to-come' society envisioned by Wiener. It is presented in a speculative future tense, and as such, no more than 'the dreams the information society dreams of itself' (Saito, 2010). I shall argue in the following that such a promise is, after countless updates, still pending in contemporary society and that it is *still* not in phase with the actual technology and current social conditions.

The contemporary promise is (still) basically the easy access and processing of information/knowledge and the easy connection with an enlarged social environment. It is merchandised using attractive concepts such as relationship, friendship, creativity, openness, freedom, etc. These are all but endless deferrals of the promise of a better life (Giroux, 2012), promises of fulfilment or 'potentialities' (Rosa, 2014).

The concept of potentiality used by Rosa originates from a former development about the paradoxical structure of the consumption act by the Swedish economist Staffan B. Linder. He argues that contemporary society is witnessing an increasing scarcity of time, where time is becoming a "scarce commodity" (Linder, 1970, p.2). The fundamental, though widely going unnoticed problem Linder exposes is that though buying requires only a few seconds, consuming what one has bought takes time. Consuming means to put to use and gain the gratification that the act of purchase more or less directly promised. For example, using a new camera takes more time than its purchase, for one has to *learn* how to use it in order to gain gratification from its use, and thus, to consume it at the full sense of the term. Then what about knowledge? One cannot use knowledge the very minute following its 'purchase'. Following the camera analogy, one has to *learn* how to use it in order to gain gratification from its consumption. Rosa's potentialities means *whatever possibilities one is empowered with* through the purchase (and before the consumption) of a merchandise, but these potentialities remain unachieved unless the necessary time and process unfolds to allow their actualisation.

Linking the above concept of potentiality with Lyotard's model of knowledge 'sold and consumed' on the part of the would-be consumer, we may argue that what is sold is not knowledge itself but the *potentialities* of knowledge (the main element of the promise of the knowledge society). These remain unachieved either because of the gap between the promise and the current state of society and technology (discussed above) or because the potentialities of knowledge are not allowed the necessary time for them to be achieved through learning. The race for efficiency and profitability seems to have provided an amount of potentialities to the point of redundancy, but left no time for these to be achieved. It develops so swiftly that we forget that the gap between potentialities and achievement remains

unbridged, as we abandon the previous promises to embrace easier, faster, more seductive ones.

3. Disengagement: In the Haven of Relationship without Commitment

One could rightly claim that by now, computers have gained more than a million times more memory capacity and processing speed; that they have become widespread in society and their use extended to the individual user. Thus, they have come to facilitate communication between individuals, companies and other institutions. All those claims are legitimate. But what do we make out of these improvements?

Based on an extensive fieldwork on network mediated relations, Turkle (2011) showed that knowledge and relationship are not so easily available. The permanent possibility of connection whenever and wherever one wishes, or to be always 'online' is what Turkle calls 'connectivity'. It is what makes the aforementioned relation with an enlarged social environment (the 'social networking') possible, but it also has the frustrating peculiarity to isolate as much as it connects. For the culture of connectivity is also that of disengagement.

Turkle observes an adjacent fear of the risks and disappointments inherent to relations with our fellow humans. Relations to other people require commitment, are complicated and ambiguous, and may disappoint or sometimes suffer betrayal. In the form of online connections, the no-risk relationship redraws the boundary between intimacy and solitude². Receiving flows of messages from various sources (some being of unknown origin), we rejoice in the feeling of togetherness the exchange provides, while in the same time, alone facing the very screen where these messages appear. Connectivity gives just the right amount of access and possibility of control, it becomes the relationship the way we want it, safe and predictable³. We can have connection when and where we want or need it, and can easily disengage once we are done, without having to bear the burden of commitment. In so doing, we can minimise emotional exposure, relying to what Turkle calls 'edited selves' or 'pre-corrected selves', personae of ourselves designed to securely relate on social networks and that are one of the needed skills to survive in such conditions. Though, when relations are reduced to mere connections, there is a risk that we come to see others only as objects to be accessed.

Paradoxically, connectivity is a world where *too much* is possible, and measuring fulfilment to the metric of what could be accomplished is like acting as if one was always available and the connections always gratifying. This is, unfortunately, not the case. It generates anxiety resulting of not being able to meet the potentialities or to 'miss something out'⁴ of the relentless flow of information one is exposed to. Anxiety is also a mostly forgotten or unmentioned part of the new connectivity. Under such conditions, there is not only anxiety about the difficulties of life with people, but also craving for relation, which begets yet

another form of anxiety. It is different from the anxiety deriving from the burden of involvement. It is the anxiety arising from the fear of disconnection of a self that is fragile and dependent on connection, from which it gets a sense of purpose, or even a sense of being (Turkle, 2011). Against Lyotard's argument about the death of modern metanarratives, Turkle observes the appearance (or persistence in a new form) of narratives in contemporary society. Namely, the narrative of technology that "begin[s] with respectful disparagement of what came before and move[s] to idealize the new". She sums up that "we have to love our technology enough to describe it accurately. And we have to love ourselves enough to confront technology's true effects on us. (...) Technology helps us to manage life stresses but generates anxieties of its own, the two are often closely linked" (Turkle, 2011: 242–243). These narratives are in every sense, similar to the promise of the information society discussed in the previous section.

Another corollary would be the following: we insist that our world is increasingly complex, yet we have created a communication culture that has decreased the time available for us to sit and think uninterrupted. As we communicate in ways that require more and more speed, we do not allow sufficient space and time to consider complicated problems (Turkle, 2011). Just because, from the start, the reason we went to crave for connectivity was precisely to escape such a complexity.

The arguments of this section are also a link to the previous section on the point of view of relationship. Here we have people who are connected while isolated in a communication pattern that hides as much as it shows. The anxious care to avoid 'complicated problems' is nothing but another side of the escape from relational involvement and the time and effort it requires. In Bauman's words, in uniform environments, while not incurring the risk of miscomprehension, we unlearn the art of negotiating shared meanings (Bauman, 2007).

4. Discontinuity: Knowledge without Thinking?

We have heard a lot about the equation of knowledge to information, but is the equation not a too simple and reductive one? Are we in the realm of the actual contemporary society or in that of the short-lived promises made to be forgotten when updated? Eriksen (2010) states that never before have people had access to more information, but this does not mean that they also became better informed. It also means that the amount of information one can access is not proportional to the knowledge pertaining to such information. Eriksen argues that the uninterrupted flow of information of all sorts we are exposed to on a daily basis is filling all the gaps of 'empty time' (That is, in a state of information redundancy, times relatively free from information. The most scarce resource in such a state being freedom from information), like having a cup of coffee undisturbed, or just daydreaming. That is also, time 'off', formerly used to connect, sort or understand previously gained information; for short, *time to think*. But when exposed to an overflow of

information with no time to sort it, time ceases to exist as duration, but continue to exist as a series of saturated moments without a ‘before’ and an ‘after’ to separate them, about to be overtaken by the next moment. One cannot pace down, let alone stop to look around, consider one’s situation, and think about the available alternatives, because one can do nothing but drift with the flow.

Creativity

Taken the other way round, when growing amounts of information are distributed at growing speeds, it becomes increasingly difficult to contextualise them. This has consequences on the way we relate to knowledge, work and lifestyle in a wide sense (Eriksen, 2010).

Creation is relegated to recirculation, that is, recycling. Eriksen calls this phenomenon ‘stacking’, when swiftly updating information rewrites itself over the previous ones in the manner of software updates. Information piles over previous ones and what counts is only what stands on the top of the pile. Worthy to notice is also the prospective view of Lyotard about the role of universities, described in the English translation as sites for “*job retraining* and permanent education” (Lyotard, 1983: 49, my emphasis) but seen as sites for “recycling (*recyclage*) and permanent education” (Lyotard, 1979: 81) in the original French version. The latter being, I believe, much more mechanical than the translation would have it.

Creativity mainly comes to be understood under the label of potentialities production, severed from the acquisition and transmission (to the cultural sense of the term) of new knowledge. It is made a professional activity, undertaken by people sometimes called ‘creators’, a label that is of recent origin. But notwithstanding the fact that some professions are more ‘creative’ (to the sense of ‘producing the new’ and eventually merchandising it) than others, creativity in itself is not the exclusive realm of some professionals but a human ability that is latent in every individual. We can link these creators with the persons Lyotard (1983) calls the ‘decision makers’ that undertake the task of *decision*, of course, but also that of *imagination*. Here again, there are certainly some persons that are in such a position so to have to make important decisions, but this does not mean that other people are not able to make decisions or imagining by themselves without some service industry to provide it, consequently robbing people of their creative or imaginative abilities to delegate it to ‘specialists’ that will undertake, for a price, a task that was formerly free, but (as always) time taking. Reclaiming creativity means to take the time for it to occur, to let people (and, the case occurring, students) know and value their abilities and acknowledge the time that the process requires to unfold.

New forms of ignorance

Giroux (2014) observes that the overflow of information produces knowledge devoid of context, disconnected from the broader relations and historical contexts that gave them meaning. It has also produced a *culture of illiteracy* and undermined the conditions necessary to enable people to be engaged and critical agents. The

value of knowledge now comes to be linked to a crude instrumentalism. Consequently, it facilitates the emergence of new forms of illiteracy, in which many young people cannot focus very long on specific tasks (attention to tasks as well as to people) and connect discrete pieces of information to larger narratives (Giroux, 2012). This means that it is not sufficient to access information, one has to learn how to connect it, so to understand the relation it has with other bits of information and its situation in a larger context. This is the daunting and time-taking process that was formerly known as knowledge acquisition.

It has already been proven that the most important consequence of this may be summed up as fragmentation (Eriksen, 2010; Bauman, 2005) or decontextualisation (Giroux, 2014). The ensuing loss of coherence is therefore incompatible with the consideration of complexity and its problems⁵. It produces rather a tendency to escape the ‘burden’ of thinking about which Giroux even argues that, in the endless search for instant gratification that characterizes contemporary society, “this is reinforced by a banal entertainment state that views thinking as an impediment to happiness” (Giroux, 2012: 98).

In the same line of argument, Bauman (2005) observes that the impetuous growth of new knowledge and the no less rapid aging of the old combine to produce *human ignorance on a massive scale*. It also implies the *collapse of long term thinking* (Bauman, 2007) that leads to a splicing of both political history (the temporal process through which people relate to each other in society) and individual lives into a series of short-time projects which are too fragmented to withhold steady relations or individual life projects till their actualisation. So instead of learning, the individual is prompted to forget previous learning (or as the title of this article suggest, to ‘learn to forget’). This means that:

“Past successes do not necessarily increase the probability of future victories, let alone guarantee them; while means successfully tested in the past need to be constantly inspected and revised since they may prove useless or downright counterproductive once circumstances change. A swift and thorough forgetting of outdated information and fast ageing habits can be more important for the next success than the memorization of past moves and the building of strategies on a foundation laid by previous learning” (Bauman, 2007: 3, emphasis in original).

To summarize the above developments, we shall distinguish two forms of knowledge and two forms of ignorance (or illiteracy, in Giroux’s terms), as indicated in Table 1 (knowledge) and 2 (ignorance) below:

Table 1 Forms of knowledge

Knowledge is	Information / ‘potentialities’	Thinking and learning
Time is	Moment	Duration / temporality
Renewal pattern	Stacking	Accumulation
Span	Short-term	Long-term
Relation to context	Decontextualised	Contextual
Relation to learning	Learn fast, forget fast	Process of accumulative learning
Relation to society	Instrumental*, disengagement	Relational involvement
Culture of	Forgetting	Learning

* Considers relations as problems to be solved. A definite solution to a definite problem or at least a mean to devise a way to make believe the problem has been solved.

Table 2 Forms of ignorance

Ignorance is	Information overload	Lack of knowledge
Due to	Thinking / learning time scarcity	Information scarcity
Relation to learning	<i>Augmented</i> by the learning/ forgetting cycle acceleration	<i>Reduced</i> by the learning process

5. Afterword: Knowledge and Time

All that remains is what Rosa calls potentialities. In a world structured by the imperatives of efficiency and profitability, we are deemed to strive for the achievement of short-term desires, rather than for their evolution on the long term. So the unachieved potentialities are swiftly replaced by new and improved ones (that are doomed to be unachieved either). Finally, we tend to forget what we ‘really’ meant to achieve or what we ‘really’ wanted (Rosa, 2014).

As places of knowledge, educational institutions, and particularly the students, teachers and researchers that constitute its flesh are plagued by the twofold structure of the knowledge society as well as by the similarly twofold division of knowledge itself. The starting point of this article was Bauman’s statement about the rise of the culture of forgetting, it is also the plague’s diagnosis. If educational institutions are to remain places of knowledge, critical thinking and creativity, we do not need new policies or new methods. What we need is simple enough to be omitted from the thick, cumbersome and costly reports from administration boards and ministries. As I hope to have argued thoroughly in this article, we shall reclaim *time*, that kind of time that is neither measured in time budgets nor instrumentalised in programmes and schedules. For involvement in relationships takes time, involvement in learning takes time, thinking takes time, to have something we mean to achieve takes time to achieve, and finally, creation takes time. Castoriadis (1996) observes that among the many creations in human history, one is particularly singular: the capability a society has to question itself. But the main symptom of the plague of our times is that our civilisation has stopped questioning itself. That means the demise of autonomous thinking. Following Castoriadis, Bauman (2001: 54) adds that: “When people accept their impotence to control the

conditions of their lives, they surrender to what they take to be unavoidable – society ceases to be autonomous, that is, self-defining and self-managing; or, rather, people no longer believe it to be autonomous, and thus they lose the courage and the will to self-define (...).”

Then the providers of self-definition will gladly undertake the thinking task on our behalf, with a price tag on it. For any individual, self-definition takes time, years indeed, years of involvement, relationship, thinking and learning. It is where questions are born, critique is born, knowledge flourishes, and from there, knowledge may be shared and developed, if only time allows.

NOTES

1. Inflation calculator retrieved from: <http://www.saving.org/inflation/inflation.php?>
2. According to a survey conducted in 2010 by the Institute of Social Research of Michigan University, since the year 2000, young people have reported a dramatic decline in interest in other people. Absorbed in those they have ‘friended’ through social networks such as Facebook, they lose interest in more demanding friendship relations (cf. Turkle, 2014, p. 293 and p. 345, note 29).
3. The kind of relations that is typical of those under instrumental rationality as Ritzer (1998) describes it. According to Ritzer, the four characteristics of the rationalisation process are: calculability, predictability, efficiency and substitution of human technology for non-human technology (mediation by technological instruments).
4. Psychologist Larry D. Rosen (2012) even suggests that acute cases of anxiety of ‘missing something out’ can lead to psychopathological disorders classified in the leading reference in psychiatry, the *Diagnostic and Statistical Manual* (DSM), as obsessive-compulsive disorders.
5. Even in their leisure pursuits, recent research shows that people strive to condensate as much pleasurable experiences as they can in the smallest time span possible, leaving the planning and the ‘thinking’ relevant to such activities to specialist staff (Cf. Argenton, 2015).

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THE SLOWLY STRUCTURED CLASSROOM: NARRATIVE TIME, LIVED EXPERIENCE AND THE CONTEMPORARY HE CLASSROOM

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ABSTRACT. The detrimental impact of a globalised, highly technological world within the academe is well documented. The combination of moral efficiency, the global proliferation of contemporary capitalism and the compressing of time and space all have a role to play in the professional practice of contemporary higher education. This article attends to the negative outcomes of time and professional practice. It suggests the narrative classroom as one means of demonstrating agency and disrupting the status quo design of the higher education establishment. It employs an autoethnographic methodology to preface individual voice cultivated through storytelling and reflexivity. It suggests that this transformative process entails the establishment of creative communities. These communities are, by their very nature, relational and affective – and a necessary component of individual transformation.

Keywords: time; agency; professional practice; critical pedagogy

1. Introduction

The detrimental impact of a globalised, highly technological world within the academe is well documented. (See for example Giroux, 2002; Lunch, 2006 & 2007; Sloan, 2008; Patrick, 2013; and Hayes and Jandrić, 2014.) The critiques focus on the challenges of a neoliberal framing of higher education, and seek to disrupt the co-modification of knowledge and the understanding of the student as a consumer therein. This article attends to this state of affairs, paying particular attention to the role that time has played in bringing it about. I suggest, drawing on autoethnographic reflections, the idea of the narrative classroom as one way of disrupting the neoliberal framing of higher education.

The narrative classroom experience reveals how lecturers are agents of change. They are capable of challenging status quo iterations of teaching and learning,

thereby slowing down the learning journey in the classroom. This framing of the classroom suggests – drawing on insights from narrative theory (Bruner, 1991) – that a focus on lived experience as a pedagogical tool can slow down the classroom. Storytelling does not follow a linear trajectory. Consequently, the transformative experience fostered by storytelling challenges traditional iterations of time. It suggests a non-linear experience that does not attend to the demands of clock time. In order to support such claims, section one describes the narrative classroom and the added value of subjective methodologies. Part two examines my own teaching and learning reflections and observations acquired during the course of my final year module, Contemporary Political Theory. The final section imagines how this approach might continue to develop and thrive in the future. In making such claims, I am mindful of two inter-related challenges: namely, the lack of engagement from students and the wider fear that reflexive, autobiographical framings of teaching and learning might engender. I address these challenges in the conclusion.

Judith Walker (2009) attends to the challenges that time in a globalised world places on the lived experience of the contemporary academic. She identifies a series of understandings of time. Clock time distinguishes the modern society from its pre-modern counterpart. It highlights the move away from space and nature and the use of lunar cycles – for example, to determine time cycles. The pre-modern interpretation of time displays a symbiotic relationship between society and nature. It suggests a long-term, evolutionary view of the future. Walker notes how some scholars, for example Urry (1994), describe this period as glacial or timeless. Clock time removes this slowing down and challenges the symbiosis of nature and society. Instead, time – and the influence of capitalist modes of production – is increasingly associated with moral efficiency. Individuals must master time. They are no longer simply ‘in’ time. Walker goes on to distinguish global time from this interpretation of clock time. She suggests that capitalism’s transformation of the global sphere, combined with newly emerging technologies, has contributed to a compression of time. This has rendered individuals powerless and anxious as they seek to manage their lived experience aware of the ongoing pressure to master time. Such mastery is revealed in academics’ ongoing output of scholarly articles and acquisition of research income while attending to their teaching responsibilities. Failure to demonstrate these goals, she argues, is evidence of academic failure.

I suggest that the academic’s creative potential is also being silenced as demands for mastery remain unchecked. Roxanne Lynne Doty (2004) argues in her interrogation of the academic voice that ideas and innovation do not guide the mastery outlined by Walker (2009). Rather, academics now manage their career attuned to the needs and structural requirements of tenure. With this in mind, I want, in this article, to draw the focus towards another particular aspect of our shared professional practice. I wonder what implications this speeding up of time, and the demands of research excellence, has on the professional practice within the

classroom? I suggest that the classroom is a political space within which academics can exert a degree of agency, challenging the unfolding expectations of time, control and subject mastery. This agency begins by attending to the personal and challenging patriarchal iterations of teaching and learning. It focuses on the cultivation of personal relationships within the classroom, which, as current research suggests, are critical to the successful university experience. (See for example Chambliss, 2014, and Todd et al., 2006.) I draw on the discourses of critical pedagogy to sustain this idea, and argue on behalf of the creative potential of both lecturers and students. Both the students and the lecturer are understood to be co-producers of knowledge in this experience. They are responsible for the creation of the learning community established through shared autobiographical experiences and enhanced by reflexive practices.

I suggest, drawing on my own teaching and learning practice – herein referred to as professional practice – that this approach facilitates an alternative, slower learning environment. Throughout the article, I offer my experience of developing and practising narrative principles within the formal classroom. I draw on Bartholomew (2015), who suggests that an autoethnographic approach offers beneficial insights to understanding our shared professional practice. I extend his argument and offer this reflexive potential to students as well. This reflexivity allows individuals within the classroom to probe their own identity and authenticity and ponder their agentic capabilities. We can understand this experience as falling broadly within what is now identified as transformative learning. (See for example Taylor & Cranton, 2012.) I suggest such transformations challenge iterations of clock time and upset the pre-eminence of global time.

2. Narrative Approaches as a Challenge to Time in HE

Time, in the unfolding of the history of ideas, has been studied by Hutchings (2008). She suggests that the concept of time is portrayed as something to be controlled – it has a predictive quality. She shows in her interrogation of time and political thought that the philosopher enjoys a particular position within this unfolding narrative. The philosopher predicts the future and controls the unfolding of history. It is a privileged position that has allowed for a particular institutional design of the state.¹ Hutchings's claims are supported by the writings of other contemporary scholars. For example, Hom (2010) documents the relationship of clock time and the unfolding of history. He suggests that institutional practices such as colonialism, the Great War and the effects of post-colonialism contributed to the mutually supportive role of time and the rise of the modern global state. Likewise, McIntosh (2015) discusses the controlling nature of time. He, like Hutchings, notes how time has been harnessed throughout history to control individuals' daily lives. While McIntosh's writings reveal the role of time throughout history, he is likewise critical of the role that time plays in the production of contemporary scholarship. His interrogation of peace research and

the democratic peace thesis reveals that causal thinking about war – and the ability to predict its occurrence – emphasises universal and general findings to the detriment of a highly nuanced understanding of the wider temporal and spatial roles that time ought to play in the academe.

We can, I suggest, find elements of that controlling element of time in professional practice. Judith Walker's (2009) work on time in higher education provides some insight into its ability to control the life of the lecturer. She suggests that the ability to harness time is one means through which the academic can demonstrate a mastery of her subject. The good academic is the fruitful academic who publishes, attends conferences and acquires grants. This is very similar to the historical work on time produced by Hom (2010), who looks to the evolutionary development of monasteries and suggests that the good monk – like the contemporary academic – was judged on his ability to efficiently negotiate the demands of time by carving out appropriate space for both prayer and the everyday tasks. But there is more to be said about the controlling aspect of time in higher education. It frames not only the voices of researchers, as suggested by Doty (2004), but also the methods through which research is produced. (McIntosh, 2015)

There is, within Hutchings' (2008) interrogation of time, a looming challenge to the role that causality plays in the wider unfolding of the history of ideas. She does not engage with the intersection of causality and social science methodologies in this particular work. What is interesting, however – and what is hinted at in the works of Hom (2010) and McIntosh (2015) – is the simultaneous rise in a particular form of knowledge. As the philosopher came to cement his role as knowledge predictor, there was, at the same time, an emerging focus on universal knowledge claims to the detriment of particular and idiosyncratic interpretations of the social and natural world. For example, Alasdair MacIntyre's (1984) interrogation of modernity provides a scathing critique of what he calls the *Enlightenment Project*. He demonstrates to his readers that the unfolding of history offers individuals only one side of a wider story of moral knowledge. In this work, he goes on to suggest that in seeking to achieve a rational understanding of the world, individuals have prefaced certain forms of knowledge over others. This has had a detrimental effect on the institutional design of the community. MacIntyre turns to the idea of tradition in order to re-imagine the possibilities of moral institutional design. In a similar fashion, Stephen Toulmin (1992) offers a critique of modernity and the prefacing of universal and rational knowledge that emphasises causality and empiricism. He contends that the turn to rational and universal knowledge was one path chosen to engage with social malaise over a period of 400 years.

The writings of MacIntyre (1984) and Toulmin (1992) suggest how causal findings have come to dominate knowledge production. What is more, Hutchings (2008) reflects on the agents (the philosopher) that helped this dominance come to pass. To wit, Hom (2010) and McIntosh (2015) reveal it to be a relationship that remains firmly in place within the academe, prompting academics to adopt a

particular voice as they negotiate the demands of research and publications. I suggest that this singular influence is likewise evident in the teaching demands of the contemporary academic. Perhaps, more subtly, it also informs the way in which lecturers engage with students in their classroom. If we draw inference from the suggested development of voice by Doty (2004) and attend to the role of teaching, it is quickly apparent that the significance of teaching is cast aside. Writing in 2006, Shapiro demonstrates that teaching – and in particular scholarly teaching – is not a valued part of the tenure process. He suggests that if teaching is to become a central part of acquiring tenure, the structures of the university in particular and higher education in general must change. It is brave, he suggests, for untenured academics to build a career on teaching accolades. Should they chose to do so, it is, he writes, “at their own peril.” This is an insecurity that is well documented in the academe. Kahane (2009) writes that for newly appointed faculty members – or those who have yet to obtain a permanent position – the uncertainty and lack of support in the academe, juxtaposed with the need to appear confident and in control of their classroom, can render them insecure.

Kahane (2009) documents his own experience as an untenured sessional lecturer and rehearses what it was like to acquire the protection of a permanent position at a Canadian university. He highlights the insecurity of teaching large classes as an inexperienced lecturer, and the need demonstrate to his students that he could answer any question they put to him during the lecture. He suggests that in order to attend to the vulnerability he experienced, he sought to master the canon of philosophical texts he was charged with teaching. Yet this mastery, he writes, was simply a disguise. He employed it to gloss over the wider fear of being found wanting, of being a fraud in the classroom. Kahane goes on to discuss this coping mechanism in some detail. He identifies what he calls a ‘pedagogy of lack’. This approach is contrasted with what he then goes on to identify as a ‘pedagogy of plenty’, discussed in detail in part three. A pedagogy of lack does not contribute to a positive learning space in higher education. It masks the fear and vulnerability the lecturer feels. And it does not recognise the contributions that students can – and ought – to make in the classroom because it contributes to the silencing of the student voice so that the lecturer can dominate. Kahane (2009) reflects on his reliance on such an approach. He suggests that it was detrimental to his own conception of self while also not giving due deference to students’ development. The classroom was a space within which specialist knowledge was transferred from one specialist entity to a student. There was little space for affective engagements, mindfulness or community building.

I suggest that this need to appear strong, in control and able to respond to every possible question is likewise a product of the moral efficiencies Walker (2009) discusses. Moreover, it stands in opposition to the classroom as an emancipatory space within which students and teachers can be creative, emotional and imaginative as they embrace their very subjectivities. Kahane’s (2009) reflections are reminiscent of the writings of bell hooks (2010), whose works in critical

pedagogy suggests that higher education ought to provide a space within which to query identity and understand the transformative potential of education. Such transformations are not necessarily comfortable, and will necessarily unsettle those that seek it out. Yet as Giroux (2015) has suggested, pedagogy ought to be disruptive. It demands students be critical and query the status quo in order to achieve that elusive and sought-after freedom discussed by hooks (2010). A pedagogy of lack shuts down such conversations – it does not invigorate them. I do believe, however, that this can be overcome. I suggest that narrative framings of teaching and learning that focus on stories and lived experience provide recourse for the lecturer. Narrative approaches can attend to the challenges that emerge in the face of time and mastery, which are characteristic of the modern-day teaching environment.

Narrative approaches begin with stories. Writing in 1991, Bruner provides the reader with ten archetypes of narrative. To begin with, narratives are diachronic. They account for a series of events happening over a period of time. They begin with a specific event in time, and it is this event that focuses the unfolding of the wider story. The unfolding stories may not follow a linear process and they may – and most likely will – challenge iterations of clock time. Consequently, the unfolding story may never clearly adopt one singular, discernible path. Yet it is this path that can foster the transformation of the academic and student voice. This path fosters reflection. Moreover, there is space for agency. Agents can exercise their own individuality as their own autobiography unfolds. Such stories are non-linear. They emerge through the creative and emotional outlets of our selves, cater to the transformative potential of critical pedagogy and defy causal framings of clock time.

A focus on autobiography suggests an interrogative capacity. Crossely (2000) suggests that such an interrogation allows the individual to be in time rather than controlled by time. For Crossely, narrative provides a revelatory function. By telling stories and engaging with our autobiographical selves, the narrative processes reveal symbols and a wider understanding of culture within the quotidian. Much like Breuner (1991), Crossely's (2000) work hints at the possibility of narrative moving beyond structure in order to understand the subjective positioning of self in the various worlds of which we are a part. We do not live guided by time, as Hom's (2010) descriptive unfolding of western accounts of time suggests. Rather, multiple interpretations and understandings of time interweave within our daily lives. Narrative time, which is non-linear, suggests how being in time can be simultaneously transformative and elevating. It attends to the possibility of relational learning as it prompts reflexive thinking. This, I suggest, can prompt individual transformation while building a learning community. I tease out the implication of this account of time in the final section of the article.

There is value in the subjective and interpretive nature of narratives. There is a need, as Giroux (2015) argues, to disrupt the status quo. This negotiation is akin to

the lived experience of being human. It is the act of contestation – and the meaning that emerges – that provides the ontological embeddedness of a narrative. For Bruner (1991), this might just be the ultimate strength of narrative. In essence, it outlines how to work collaboratively while probing dissonance and tension. He suggests that within this interrogation there is space for charity and compassion – an approach that defies the logic of rights, obligations and legal representation in the resolution of struggles. Narrative openly lies in the field of contestation. Learning how to engage, while probing for deeper meanings, reveals the relational nature of our social existence and offers a mode of contestation that is critical but not confrontational. This can be uncomfortable. However, as Amsler (2011) suggests, comfortable pedagogies only enhance the status quo teaching expectations, they do not transform. The veracity of a narrative approach lies not in the expected reproduction of sought-after ends but rather in the acceptance of the story into society's wider fabric. Perhaps most importantly, the structure of the narrative provides a space within which our own autobiographies can unfold. Narrative approaches suggest an alternative understanding of knowledge creation and attend to the (potential) transformation of the academic voice in both students and lecturers.

3. The Narrative Classroom Examined

Telling stories reveals a voice. This voice, I suggest, is reflexive and interrogative. It is not the voice that Doty (2004) criticises. Rather, the narrative voice that emerges from within the autobiographical self is one of discovery and deeper understanding. This voice attends to lived experience and, if properly supported, prompts a deeper level of knowledge of one's self and of others. It has the potential to be transformative for all individuals within the classroom. The individuals, and in this case I refer both to the student and the lecturer, understand themselves as part of a sharing community. Elizabeth Dauphinee (2010) writes about the potential for community development within an autoethnographic experience. She suggests that such communities are neither linear nor hierarchical. What is more, they are not epistemological entities but ontological ones that foster creative knowledge production. They are, she writes, "spaces of opportunity for creation and fruitful debate that seek not to destroy the ideas and risks we might be willing to take, but instead to foster them" (817). I see, in this notion of community, many parallels to the type of community building in the classroom that hooks (2010) endorses. I draw on these two discourses in order to attend to the self-discovery that emerges in the act of telling one's story.

Autobiography, I acknowledge, is an unorthodox approach within the social sciences – although it is growing in reputation. For the most part, autobiography, as Behar (1996) writes, is situated outside the formal boundaries of knowledge creation. She suggests this is the case because autobiography, memoir and anecdotes fail to meet the expectations of causality and verifiability deemed

important within the academy. “What bothers critics,” she writes, “is the insertion of personal stories into what we have been taught to think of as the analysis of impersonal social facts. Throughout most of the twentieth century, in scholarly fields ranging from literary criticism to anthropology to law, the reigning paradigms have traditionally called for distance, objectivity, and abstraction. The worst sin was to be ‘to personal’” (1996: 12–13). Research into this methodology, however, suggests it is one vehicle for creating relationships and interconnectivity in the wider world. As Inayatullah (2010) has suggested, telling stories reveals a deeper level of connectivity with those around us. He challenges the assumption that personal revelations might alienate others. In telling his story to others, he writes, he began to witness a previously inexperienced level of shared connectivity with others. It is an idea that is similarly noted by those who use narrative techniques to address experiences of trauma. Crossely (2000) suggests telling stories provides individuals with a way of connecting their own sense of self to the wider world. Writing about those who experience trauma, she attends to the manner in which storytelling can restore a connection to a wider notion of the common good. Narrative techniques – and autobiographical storytelling in particular – situate individuals within environments that suggest the potential for positive development of communities.

The knowledge that is produced within this type of community is, by necessity, co-produced. Reflecting on this idea, Bleiker and Briggs (2010) note it requires a particular disposition on the part of the subject. The individual is the author of his or her own learning journey. They must, by necessity, “cultivate openness” with the outside world. Here I am suggesting that in the classroom we can achieve such openness – but in order to do so we must move away from the notion of students as consumers and higher education as a purchasable commodity or good. I am, in this design, suggesting that students are co-producers of knowledge. Students must, by necessity, embrace this role in order to facilitate the aforementioned transformation but also to cultivate the required relationships to support such a journey. In making this claim, I am drawing on the insights of McCulloch (2009), who suggests that understanding students as co-producers not only fosters community development but also pushes students to become active participants in the classroom. This offers students a stake in the outcomes of the community, and it consequently challenges the individualism evident in the neoliberal design of the contemporary university. The experience of higher education is transformed. It becomes a journey that fosters deep learning.

My own role as the lecturer was also transformed within this narrative setting. I remained informed by the quality demands of the QAA but I was mindful that I was not dictating the terms of knowledge dissemination. Instead, I was facilitating a journey for the students, providing them with increasing autonomy and independence as the course progressed. I took several key steps to help with this transformation. Some of these were structural and related to the planning and implementation of the module itself. Other changes attended to the QAA demands

and subject benchmarks of politics and international relations. The final set of changes was personal and revelatory, and attended to the suggestions articulated by Brigg and Bleiker (2010) and Dauphinee (2010) – namely, I rendered my vulnerability in the teaching space explicit. I detail these changes below.

I developed two-inter-related course documents for students to help them on their learning journey. The first, a module handbook, outlined their role in the module. I was mindful that most students had not previously engaged with topics relating to political thought, nor were they accustomed to drawing on their own lived experience to inform academic narratives. Consequently, I divided the 12-week module into two six-week halves. In the first half of the module, I facilitated the discussion and expected the students to come prepared to discuss the literature assigned. To help with this, the classroom space was semi-structured. The first ten minutes were a discussion recalling the previous week's discussion. This was followed by 15 minutes of creative writing on the part of the students, who reflected on these ideas and wrote down their own thoughts. This was then followed by some personal reflection sharing, which dovetailed into the new weekly discussions. The module handbook described these structural expectations while providing key readings on both political theory and narrative methodologies. I hoped that these documents would enable students to prepare for class aware of the authors and narratives under discussion. More importantly, I hoped they would facilitate the development of trust within the classroom. Trust, I suggest, is necessary if students are to feel secure and render themselves vulnerable by sharing their lived experience honestly and openly.

To support reflexive thinking alongside a critical interrogation of contemporary political theory narratives, I aligned the assessments with the learning outcomes. Students were required to demonstrate in their submissions a reflexive – and necessarily subjective – framework. They were required to submit one reflexive piece of writing that engaged with core works of political theory. They were also expected to collaborate within a group to prepare and lead one two-hour seminar, concluding with a second reflexive submission. This submission reflected on the nature of the presentation, the use of formal and informal feedback and the transformative nature of the presentation experience itself. The first submission was completed in week six. The second submission was submitted after the winter break to allow greater time to practise and produce reflexive thinking.

The value of this alternative knowledge production is clear. This approach demands attention to excluded forms of knowledge. The pursuit of this approach facilitates transformative experiences but does so at the expense of efficiency and exchange value – ideas that are aligned to the institutional identity of neoliberal university designs. As hooks (2010) writes, it prompts a critical and engaged ethos among students, sustaining their critical abilities well beyond the university experience. However, it is not the status quo methodology training that students tend to receive. Consequently, students worry about the grade they will receive and if they might fail. They are rendered insecure throughout this process. While this

insecurity is an important experience of the reflexive process, it must be attended to and supported appropriately.

In order to attend to this revelation, I developed – alongside the module handbook – an assessment handbook that detailed the nature of the assignments, provided key literature on how to write within a subjective and narrative approach and outlined the assessment criteria and process. I also made myself available to students beyond the classroom and traditional office hours. I built time into the learning hours, outside of my assigned teaching hours, to meet with these final year modules and attend to their creative engagements within the module. For the presentation, students were offered small group tutorials of three to four students to work through the seminar. Within this group, students were offered the opportunity to negotiate their assigned texts, interrogating the wider messages while attending to the challenge of reporting them to their fellow classmates. Summative feedback was also offered on the structure and content of the presentation itself, in order to ensure that the information aligned with both the assessment criteria and the module's learning outcomes. Informal learning opportunities extended beyond this small group tutorial. Students routinely sought me out to work on their own written submissions as well. Students struggled to understand what their 'voice' might be and how to represent it on the page. Having been trained to produce works of an empirical nature and seek out the social scientist within them, it was hard to unlearn this approach. Much time was spent in these lessons interrogating students' learning journey and understanding how to represent this on the written page.

For these structural changes to have any impact, I also had to learn how to present myself openly and honestly. If I could not enact that very vulnerability and openness I was demanding of my students, the relational learning could not begin – nor, I believed, would students accept my authenticity within an autoethnographic experience. Consequently, I had to surrender the traditional power bestowed on the lecturer in the classroom while presenting an honest account of who I was. I had to reveal the multiple identities, stories and lived experiences that informed who I was and what I wanted to encourage my students to become. While I relied quite heavily on the idea of authenticity to reveal my pedagogical approach, authenticity is a challenge to autoethnographic methods; indeed, the idea of authenticity itself can be troubling. Jones et al. (2012) suggest in their study of identity and intersectionality in higher education that authenticity is difficult to achieve when deciding which personality to present to the audience. What is more, they note that identity can be fluid and multidimensional, consequently what may or may not be authentic depends on the time and location of the engagement. However, I knew that to connect with the students I had to provide insight into my teaching approach, which was relational, multilateral and premised on the building of personal relationships. To allow for this to develop, the stories I used to inform the political theory narrative drew on my own experiences of being a student, mother

and researcher, but also my newly discovered scepticism in the social justice narrative – itself under examination in this particular module.

4. Reflexivity, Transformation & Autobiographical Time

Autoethnographic learning – informed by an autobiographical interrogation of self and academic discourse – can be transformative. As Starr (2010) has written, autoethnography can be simultaneously critical and transformative as a pedagogical tool. She draws on autoethnographic approaches in order to query identity and privilege in multicultural countries, specifically Canada. She notes that within Canada the multicultural heritage is not reflected by those engaged in the practice of teaching. She suggests that an autoethnographic interrogation of teaching practices can reveal subtle assumptions about race, identity and privilege, which – if suitably supported – can transform the learning environment. I suggest, tangentially, that it is this reflexive interrogation that my students were embarking upon during our informal meetings and within the classroom. Transformative learning suggests a change on those involved in the learning process. As Markos and McWhinney (2003) suggest, transformative education involves a degree of introspection on the self prompted by significant changes in lived experience. They suggest that such transformations begin “when a person withdraws from the world of established goals to unlearn, reorient, and choose a fresh path” (16). When Kahane (2009) writes of his use of mindful techniques and his adoption of a pedagogy of plenty, he notes, in his narrative feedback from students, that many of his students experienced this type of re-orientation.

My own feedback within the module reflection forms revealed a similar type of transformation in the ideas, opinions and understandings of self within the classroom. Aston University’s module reflection forms ask students to rate the lecturer using a scale of 1-5 on a series of pedagogical and stylistic experiences in the class. This is followed up with a space to reflect on the course, prompted by a series of questions. Students were asked to comment on what they enjoyed and what could be improved, and to provide any additional comments they felt necessary. The responses reflected on many of the changes discussed in both section one and two. For example, students described the flipped lecture style – along with the classroom layout and the topics covered – as being things that stood out. One student commented on the reflexive nature of the assessments, suggesting they challenged his worldview and prompted deeper reflection on his part. The notion of lived experience also stood out for students. They commented on how it helped challenge assumptions and provide innovative alternatives to their authenticity as students and their positionality in the world. This feedback was insightful. It revealed fear of the unknown, of not having engaged with reflexive learning styles. There was also fear of doing the work ‘wrong’. But, interestingly, the students recognised the value of being pushed to reflect and build on their own lived experience to generate both personal and academic insights.

This introspection defies the causality evidenced in social science methods. To reflect, and in turn, narrate, our lived experience does not align with the outcomes of a social science methodology. Our lived experiences and the stories that they generate defy the linearity of time that authors such as Hutchings (2008), Hom (2010) and McIntosh (2015) have queried. While a singular concept of time, such as linear time, might order the various stories that suggest a person's identity and temporal subjectivity, autobiographical storytelling bifurcates such linearity. To remember a story is to recall a past event, yet this storying is happening in the present. What is more, as Brockmeier (2000) points out, even if we are living our lives and telling our stories in the present, we are constantly living with an eye to the future. He is concerned with the various ways time reveals itself in the unfolding autobiographical narrative. Reading his work, it becomes clear that time features in a variety of way as individuals decide how to author their stories. A focus on authorship reveals some interesting questions. For example, how will a particular plot line in our lived experience unfold, and what impact will that have on the path we then follow? What is more, lives are generally informed by certain expectations of the future. How those expectations impact on our unfolding futures will not only impact what the present story will become, but will also affect how we reflect on the story once it has become a memory. The future interpretation of that memory will have an impact on the remembered present. Thus, it is deeply problematic to suggest that autobiographical reflections can be related to the causal inferences evidenced in a scientific methodology. Autobiographical time, unlike clock time, is unpredictable and open to alternative endings during the storying process.

The unfolding autobiographical reflections inform reflexive knowledge creation. Reflexive thinking suggests a space within which the process of storying and re-storying lived experiences can unfold, making space for information that may or may not have been relevant during the story's first telling. Reflexive thinking allows authors to re-story their lived experience. It facilitates the inclusion of otherwise unexpected information. In their work on reflexive thinking, Ackerley and True (2008) suggest that this type of reflexive thinking is beneficial to research design. They write of the process of research design and knowledge creation and what to do when the information gathered does not fit with a project's intended outcomes or desired conclusions. The transformative potential of reflexive research and teaching is likewise noted by Wilkinson (2013), who suggests that probing the dissonance that emerges in the face of unexpected results – while uncomfortable – reveals unexpected opportunities and insights into “the nature and politics of knowledge production” (403).

As Epston and White (1990) suggest in their work on narrative therapy, re-storying – as part of a reflexive process – allows individuals the opportunity to author and re-author their stories on their own terms. White and Epston suggest that narrating our lived experiences provides individuals with a way of making sense of their temporality and positionality in the world. Through a process of

reflection, interrogation and restoration, individuals come to understand the story on their own terms, making use of previously unacknowledged or unknown facts of the story. This idea is likewise articulated by Crossely (2000). She suggests that storytelling is a way of being in time and a method of re-situating the self in the relationships and communities we want to be a part of. However, what emerges from this reflexive process is that the stories – and their excavation – are non-linear. This type of knowledge creation relies not only on personal narrative but also on time-lapsed revelations. In telling one's story, the individual memory work combines flashbacks and flash-forwards. The rate of progression is determined by the author's ability to negotiate and assimilate secondary information. Much like Bruckmeier's (2000) articulation of a retrospective teleology, this re-authoring is neither predictable nor controllable.

I suggest that within this storying process alternative skills development occurs. These skills are central to the transformative process: namely, critical reflection, empathy and engaged citizenship (to name but a few). This skill set stands at odds with the notion of moral efficiency discussed by Walker (2009), and might be interpreted as a challenge to the mastery identified by Hom (2010) and McIntosh (2015). However, if the philosopher enjoys the prominent and influential position that Hutchings (2008) describes, then this criticality is a much-needed antidote to the individualism and insular ideals of neoliberal institutional design. The aforementioned skills foster community development like that articulated by Dauphinee (2010) and hooks (2010), and this community is a vital component of the narrative experience. It provides the audience and teaches individuals how to listen. Listening, I suggest, is central to reflexivity and the authoring of stories. As Giani writes, listening is a relational experience. She notes: "in order to be able to listen to the other person you have to listen to yourself" (77). Listening, then, is both a workout and a training process. It exposes the individual to greater possibilities and experiences. "This is because," she goes on to suggest, "it is the other person and the multiple everyday contexts (both formal and informal) that provide a great deal of questions, problems, queries and emotions that tell us something about ourselves" (77). Listening – and being attuned to its relational expectations – is an equally important part of the reflexive process. I suggest that in listening to the stories of others, we, as an audience, become central to the restoring process and provide the structural support within which uncertainty can be probed.

Reflexive work is a fearful work, as it demands a level of introspection about who we are and what we do. Consequently, the listening that occurs within this community must transcend the privilege and asymmetries of power that typically structure the classroom. Thompson (2003) attends to the challenges of reciprocal listening. She writes that accepted forms of listening have moral criteria that seek to ensure all individuals are all included, no one is left with a bad feelings and no one is blamed. This, she suggests, is problematic. A radical account of listening, she concludes, can be transformative if it acknowledges the multiple vulnerabilities that each individual carries and starts from a position of empathy and recognition.

Radical listening involves all members of the community presenting an authentic account of themselves. The added benefit of this presentation of the self is the emergence of the community. This radicality is likewise discussed by hooks (2010). She writes: “Hearing one another’s personal experience in the classroom promotes an atmosphere of cooperation and deep listening. Ultimately, the negative possibilities that can arise when teachers validate the sharing of personal experience are small compared to the positive rewards when such sharing helps create a community of learning and enhances ways of knowing” (58).

I suggest that such a transformative can be achieved within the space of the narrative classroom. Lecturers must attend to the various imbalances of power and listen to what their students are conveying in their stories. It is within these disclosures that vulnerabilities emerge and reflexive practices can be sustained. In seeking to practise radical listening and identify the creative voice of transformation, it is possible to create a wider, holistic learning environment.

5. Conclusion

I have suggested that narrative approaches to learning and teaching can slow down our professional practice and attend to the wider pastoral needs of our student populations. I hope to have shown that my own experiences in framing a classroom in this particular way, – drawing on autoethnographic methodologies, prompts reflexive thinking. This, I argue, allows students and lecturers to re-imagine themselves as part of a learning journey and co-producers of knowledge therein. Implicit within this claim is the idea that autobiographical (or narrative) time must by necessity slow down the learning process. There is much to be said about the outcomes of this approach. It is transformative for all involved in the learning journey. The reflexivity demanded of storytelling and the authenticity it requires from all involved fosters new and interesting ways of attending to the world. It highlights the multiple roles we all play in the ongoing design of our communities, and the need to attend to the multiple vulnerabilities and expectations that individuals carry with them. This approach has much to say about the potential within higher education to developed engaged and active citizens beyond the formal classroom experience.

There remains much to be said about this particular approach. We must begin to imagine how to embed this approach further in the institutional structures of higher education. Similarly, we must remain aware of the challenges of scepticism and mistrust that will emerge from within communities. For example, students must unlearn the individualism that sustains subject mastery and the learning that focuses on the moral efficiencies of clock time. This is hard work, and as Amsler’s (2011) research demonstrates, it is work that not all students will embrace. It will take time and patience, and not all students will relish the reflexive challenges articulated throughout this article. Rather than shy way from this challenge, I draw strength from hooks (2010), who suggests that such students only push her to think

of more creative and imaginative ways of engaging students in learning. We must heed this advice.

There is also a potential for a similar challenge from colleagues who fear the hard work of reflexivity. Those who embrace the call to attend to a slower, narrative approach may experience a marginalised position within the community. Rather than walk away from this experience, I suggest it be embraced and absorbed. Drawing on what Giroux (2016) has called the exiled academic, I suggest that this approach has much to offer those that seek to challenge status quo iterations of neoliberal framings of higher education. Giroux writes: “Less an oppressive space of containment and deskilling, exile can become the grounds for a revitalized kind of public space and activism where a new language, a new understanding of politics, and new forms of solidarity can be nurtured among the displaced – that is, among those who refuse the neoliberal machinery of social and political violence that defines education solely as a source of profit, mode of commerce, and ‘feel good’ pedagogy.”

A narrative framing of the classroom has the potential to disrupt the status quo. Moreover, it has the capacity to re-ignite an imaginative and personal form of knowledge creation that begins – but does not stop – in the classroom. I suggest that one happy consequence of this approach is the slowing down of the learning journey and the flourishing of genuine relationships premised on empathy, criticality and transformation.

NOTE

1. Institutional design in this context references the work of Robert E. Goodin. He suggests a minimalist definition of institutions. They are, he writes, “the stable, recurring, repetitive, patterned nature of the behavior that occurs within institutions, and because of them” (22). See Goodin, R. E. (1998). *The theory of institutional design*. Cambridge: Cambridge University Press.

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YOU'VE GOT MAIL: TRACKING AND FRAMING ACADEMIC LIVES

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ABSTRACT. Email has become a pervasive feature of academic life. Its impact on academic time will be immediately familiar to contemporary readers; simultaneously, however, academic work associated with email may be hidden from official recognition. Awareness of this contradiction stimulated a proposal to investigate email use over a year of an academic's life to explore tensions among administrative, research and teaching tasks, using third-generation activity theory to frame the findings. The proposed investigation proved to be too ambitious and unworkable. However, earlier and contemporary forms of Cultural Historical Activity Theory (CHAT) may still illuminate both the reasons for failure of the study and how email has contributed to the expansion and transformation of the activity system of higher education. A revised study and a comparison with an alternative account of "overload" – files and other artefacts in an attic – suggest that counting and categorizing emails would miss the crucial issues of the object of higher education and internalization of responses to neoliberal and other imperatives. The study concludes with a need to detach from a personal response to email and recognize its contribution to collective practices and their implications, including resistance and solidarity in the face of excessive and hidden workloads.

Keywords: Cultural Historical Activity Theory (CHAT); higher education; hidden labour; overload; transformation; internalization

1. Introduction: Learning from Failure

When I first encountered email in the 1990s it helped me to get through my tasks more quickly; now it slows them down. Something has changed over time in the way email mediates what I – and my colleagues, students and others – actually do in a university context.

I hypothesized that categorizing and reviewing an academic's emails over an academic year might reveal other tensions and contradictions within and across university administration, research and teaching. I hoped that my own experience of this, taken along with other studies, might contribute to a framework for

identifying pressure points and opportunities for synthesis of different aspects of academic life. I planned to use Cultural Historical Activity Theory (CHAT) – especially as espoused by Engeström (1999) – to develop this framework because of his emphasis on contradictions and tensions as sources of societal change. CHAT’s emphasis on complex social interaction involving rules, division of labour, exchange and mediation seemed clearly relevant to my quest to explain email overload.

In the event, the proposed study proved to be overambitious and unrealistic. The factors that made it so, and reflections on the thought experiment leading to the hypothesis, provide an alternative route for exploring email’s mediating role in distributed professional practices in universities. A final analogy with clearing out an academic’s attic suggests that there may be some precedents from pre-internet times that relate to this situation.

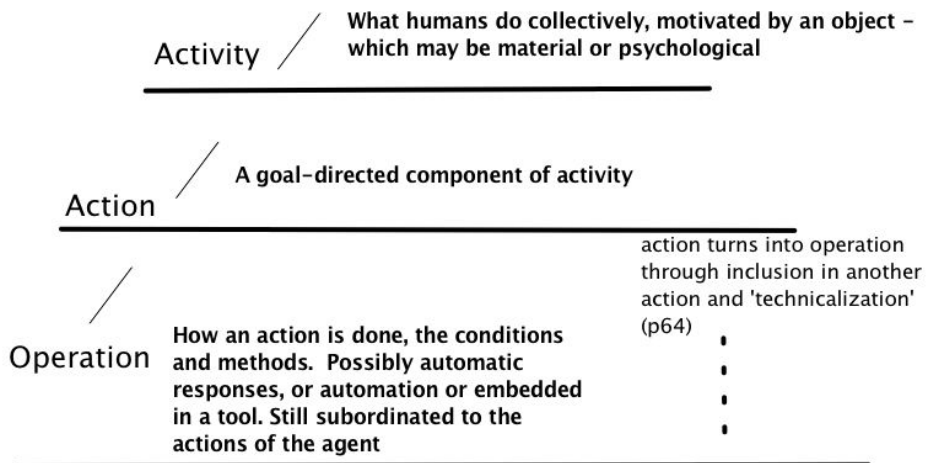
I still found CHAT to be a useful way of framing my discussion, drawing not only on Engeström but also on the work of his antecedents: Vygotsky (1896–1934) and Leont’ev (1903–1979). A very brief summary of CHAT’s key features follows, to elucidate its potential. By positioning email in a cultural-historical context, I can then offer an explanation for my initial (failed) plan and the more modest one that followed.

2. Cultural Historical Activity Theory (CHAT): Its Potential for Exploring Email Overload

Sometimes simply called activity theory, the approach described here offers useful reference points for exploring relationships between humans, what they do, and how it is mediated. The technical use of the word “activity” developed from Vygotsky’s insights about the role of mediation – through artefacts and tools, including language – in the higher forms of thinking and action (Vygotsky, 1978). A key focus is the material and mental objects of activity and how these are transformed through internal contradictions created by human actions over time. The cultural-historical tag highlights the dialectical shaping effects of everything we do, individually and together. Despite its pre-internet origins, CHAT would seem to offer an appropriate theoretical frame for changes in how email affects practice.

CHAT has itself been subject to the kind of transformative social processes that it seeks to analyze, and can be difficult to pin down. In claiming that it is a unified theory, as opposed to a set of theories, Sannino et al. (2009) invoke the basic structure of activity proposed by Leont’ev (1981) which I have summarized in Figure 1.

Figure 1 Leont'ev's model of the general structure of activity



Source: Derived from his description (Leont'ev, 1981: 41–65)

The fundamental idea of activity theory is that human activity is a collective process, oriented at an object which supplies the motive for the activity (Leont'ev, 1981). It is mediated through goal-driven actions subordinated to the main activity. Leont'ev illustrates this with the activity of a hunt, with the object of food. A division of labour requires one person to whittle a stick for a weapon, another to beat the bushes, others to actually kill the animal or deal with the carcass etc. The object of hunting is both material and psychological – there has to be some kind of shared meaning for what the group of people are doing together.

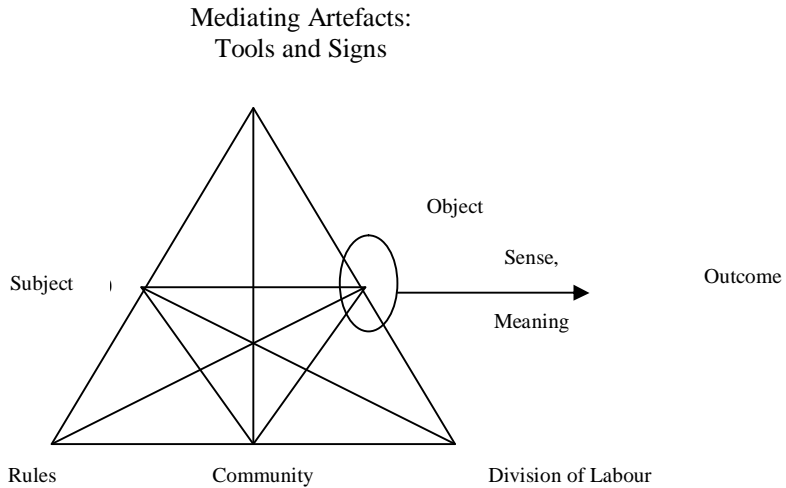
An activity cannot exist without a chain of actions (Leont'ev, 1977). Some of these actions may also be subordinated to other objects and activities and may even be spoken of as activity systems themselves. For example, weapons-making has evolved from an action in a hunt or a battle into a commercial activity, with the object of making money.

The operations level of analysis contains former actions subsumed into newer ones. Whittling a stick – once an action in itself – becomes with practice an operationalized method in the action of making a weapon. Ultimately, it is likely to be fully “technicalised” and achieved through automation, Leontev uses the action of changing gear in a car to illustrate this progression through operationalizing an action to automating it through technology.

The object of activity both shapes and is shaped by the activity through internal contradictions and tensions and through changes brought in through different participants and over time. Engestrom, in his third generation model of activity theory (Vygotsky and Leont'ev providing the first two), highlights the need to consider this internally dynamic system as a whole. His famous “triangles” draw to attention the sites where tensions and contradictions may occur internally in the

activity system. In later works, he considers points of disruption that happen across activity systems as well as within them.

Figure 2 The structure of a human activity system (Engeström, 1999)



Email is by its very nature a form of mediation that brings to an individual the intentions and objects of other individuals, groups, teams, collectives, professions, and commercial organisations. In responding to email, an individual participates in the emergence of shared activity contributing to such social groups. In this sense, the individual “assimilates the experience of humankind” (Leont’ev, 1981: 58), including the practices and meanings embedded in email as it has developed over time.

3. Email’s Development in a Neoliberal Context

At the same time as email emerged in universities, critical writers in the sector were increasingly using the word “neoliberal” to refer to a managerialist, performance-based culture that appears to suggest business-like competition as the main object of higher education. Considered in the light of Engeström’s model in Figure 2, we can see opportunities for tensions between the community and its shared objects and how these objects might be threatened by internal contradictions. The neoliberal culture did not eradicate previous or alternative objects of university-based activity, but co-existed with them, resulting in tensions and contradictions for academics. In the humanities and social sciences, for example, there are tensions between a social justice agenda and a market-oriented one (Mann, 2008); indeed, there is evidence of a need for actions to comply with both of these in my current inbox.

The word “tension” indicates a concern not simply about which agenda to deal with next; there can be questions of identity and integrity when making those choices. In a neoliberal context there is a tension “between metric performances and authentic and purposeful relationships” (Ball, 2003: 223). With aspects of email, there is a pressure to be seen to respond in a “timely” fashion as well as to engage in important collegial dialogues that might have an impact on genuine human problems.

For all but a few pioneering academics, email emerged in the early to mid 1990s as a novel convenient way to get in touch with employees, colleagues, friends and businesses. For asynchronous connections, it replaced letters and memos; for synchronous, it reduced the need for phone calls and conversations, including informal ones. In these roles, it appeared to save a lot of time. As has been the case with many new technologies, its potential influence was underestimated at its introduction – one writer reports that initially it was expected to take up an hour each day (Weiss Roberts, 2014). She now finds that it saturates all waking moments, along with other forms of technological connection.

How did email change from being a time saver to permeating so much of every academic’s daily life? My father retired as a university professor in 1989 and never sent an email in his life, despite being an early user of computers. He did still have problems with information overload though, and I return to this at the end of the paper. The activity of higher education was surely mediated in different ways only 30 years ago, yet familiar aspects persist through our buildings, traditions, organizational structures, and indeed many of our dialogues and actions as individuals apparently working towards a common object. Email carries some of our former actions; it also creates new ones.

There is already some literature on overload from email both in business and in academic life. Pignata et al. (2015) cite a range of papers recording factors associated with email use that lead to workplace stress, including its disruptive nature and the use of excessive monitoring. The authors’ own investigation into pressure points highlights not only volume but also issues to do with unnecessary emails and expectations of quick responses. They conclude that “email overload is a salient feature of work life for university employees” (Pignata et al., 2015: 170). In addition, they recommend staff training and organizational protocols for improving email practices. In an environment already overloaded with organizational protocols, however, this may need careful thought.

Examples of a human activity might be hunting (motivated by food), driving (motivated by the need to travel), or higher education (motivated by the need for critical transformation of students’ knowledge, thinking and being). Of course, the objects might be differently worded or even actually different for different people: for example self-preservation, status, or profit-making respectively.

What can we say about the actions that have been transformed and mediated through use of email as a tool? The action of sending a memo (embedding information and/or instruction) is still there, but there are so many other potential

actions and interpretations of them there too, along with changed conditions, especially relating to time and duration. A student asking a question after a class involves an action that can now happen at any time rather than in the five minutes immediately following a lecture.

In the activity system of higher education, email is a mediating tool serving several agents, with different immediate intentions or goals, some of which may be in conflict, or even invisible. Email thus has played a part in the dialectical process of transformation of universities through internalization and externalization of the ways in which higher education is conducted. In that transformation, email is an artifact or “a history in the present” (Fenwick, Edwards, & Sawchuk, 2011: 73) that shapes practice.

In its own transformation across different contexts, email has been seen (among other things) to: remove the “absence” of connection between sending and delivery of a message, thus collapsing time (Eriksen, 2001), create invisible audiences through blind copying and archiving (McKenna, 2005), increase hierarchies and marginalization (Fominaya, 2015). These arguments share a suggestion that email not only shapes our actions but also has a concealing effect – an issue that has also been identified in relation to academic labour through managerial rhetoric around academic practices involving technology (Hayes, 2016).

The changing relationships highlighted by these authors will inevitably be exacerbated in institutions such as universities where email is used to pass on regulatory and exhortatory messages. Yet many of the papers on academic life that refer to email bring out the individual’s sense of responsibility for their own poor management of the technology that has now moved a long way from its 1990s origins as a novel and convenient way of keeping in touch with people. This paper also contributes to a certain extent to this sense of self-deprecation, but moves into a more positive territory of exposure of hidden tasks and collapsed durations, and a search for constructive forms of response.

4. A Rationale for Investigating Email Now

At the turn of the millennium, Eriksen warned of effects of “*information lint*” (Eriksen, 2001: 118): fragmented information-based tasks that require attention and thought. Replying to e-mail is his first example. Something else always needs to be done before an academic can tackle a major project. Some emails do not warrant a simple reply, but provide a need for action for their recipient. The accumulation of such tasks means that many major, speculative or blue skies projects just never get done or not completely. Eriksen refers to “unintended consequences” of our acceleration of time through technology – reporting on the disappearance of the idea of “duration” leading to fragmentation and loss of the right to be “unavailable”. In the years since he wrote this, the exponential growth of this process has continued, making more poignant the suggestion that we might have lost something in the compression: “...if the entire culture is based on extreme

speed and particular, agreed-upon ways of measuring efficiency, *and the opposition disappears into the dark holes of academia* and high culture because it is unable to catch up, then it is in no way certain that a lot of people would notice the difference” (Eriksen, 2001: 153, emphasis added).

Keeping academics busy “catching up” with institutional forms of “information lint”, such as compliance with the need to plan, record, store, review, and evaluate all aspects of their teaching and research lives is surely a good way to ensure that they cannot devote any thinking time to challenge the status quo or engage in potentially dangerous ideas or opposition. Taken singly, each email exhortation towards compliance with institutional regulations, good practice, or quality assurance can be recognized for its fairness, reasonableness and its appropriate level of accountability. Taken together, the email deluge serves to create a metaphorical weight that leads to anxiety and overwork in susceptible people, and there seem to be many academics who fall into this category. Such levels of accountability are associated with a neoliberal emphasis on performativity and deprofessionalisation of academics (Olsson & Peters, 2005).

5. Methods for Managing Email – And for Researching the Email Problem

It is perhaps not surprising that papers that refer to the problem of email overload contain a plea for help for academics to manage this. I had hoped that in investigating my emails through an activity theory lens, I would simultaneously write a paper and do some overdue housekeeping. However, although the overload does contain many unnecessary emails that can be annoying, getting rid of them does not remove the required actions embedded in others.

One issue for a method for coping with this problem (and researching it) is how the material situation of an email overload is internalized by those affected. A personal observation is that I suspect that I am physically unable to comply with everything I have to do or indeed want to do; a necessary key skill is to work out where the priorities should lie. There may be tensions and contradictions between the requirements and what the academic feels should be the priorities: for example, between completing a piece of academic research when there are emails about the workload model and emails from anxious students. The implication is that the individual has to find time to do them all or cope with the consequences.

I am using my own reflections, framed through CHAT, on the email overload and potential consequences of non-compliance and hope that sharing this provides a useful stimulus for colleagues to do similar. The focus of my study is a collection of around 14,000 incoming emails in the academic year 2014–15. As seems to be the case with management of email, and indeed with other reports of similar attempts to capture the process (for example, Drake, 2015), there was initially a planned method and secondly a very much reduced set of actions, particularly in relation to the level of detail that I had hoped would be enlightening. I have included a section on each.

I have been in my current institution for four years. I have amassed 50,000 emails in my in-tray in that period, despite deleting some emails immediately and having occasional purges of some types of email, for instance any from Amazon. All of the emails have been opened and read; many have been flagged for later attention (something I did not feel the need to do until about a year ago). Many of this large number are junk and should be deleted, but some are still useful and I use email as an extended memory, for instance to locate: technical instructions; records of events; students' actions, concerns or contact details

This problem may be even more exacerbated in other spheres of activity, such as business or journalism. Rao (2015) reports having 584,341 *unread* emails. If my own collection were to reach such proportions, I would not be able to function – I already find that my retrieval systems are less effective than they were.

Every summer, I determine to take a whole day or ideally two to do some “housekeeping” on my email and my computer files. I have never managed this; there has never been a day when I haven't had to do something else, often involving answering numerous emails. As other writers on the topic have found, answering emails has spilled into weekends, evenings, early mornings and holidays. My experiences recorded here also demonstrate to me that a day would have been unlikely to be sufficient for what I planned anyway.

Initial plan

The plan was to sort these 14,000 emails into five folders: Academic, Research, Administration, Other and Junk. The first three were to be the main focus of the study; the extent and themes of Other would also be taken into account as part of the analysis. Junk was to be collected initially to see whether a distinction might be made from Other and the decision as to whether they warranted investigation postponed until the collection had been made.

My plan included identification of further categories to the five initial ones. I was particularly keen to find examples to investigate the reasons for the level of anxiety I felt over email. I recognized that any single email might have several themes: I myself am guilty of entitling an email “various”, a habit I will now change because of insights from the current study.

I intended to use software to code and analyse the topics from a CHAT perspective. I wondered about the dominance of emails on particular issues, the relative preponderance of research, teaching and administration and the numbers of emails kept that were not necessary. More than quantitative issues, though, I was interested in the insights offered by emails associated with time pressures, risk avoidance and performance.

A revised plan, influenced by other authors

Time set aside to work on the task and writing it up kept disappearing for reasons already discussed in terms of Eriksen's “information lint”, though this is not the

main reason for the failure of the project. That was still associated with time: the duration of a single act of coding and the accumulation effect of 14,000 of these.

Additional background reading helped me to see that what I had planned was not going to be possible. Pat Drake's paper describing the use of an email collection to explore women and leadership in education provided an illustration of the same dilemma. "The large volume of over 6000 emails in itself was such as to deny the possibilities of meaningful categorisation" (Drake, 2015: 148). This made me think that even if I just spent 30 seconds on coding each message this would entail many hours of work. Like Drake, "I did not need the emails to remember the angst" (Drake, 2015: 154); nor, I decided, did I need to put their themes into relevant software to make judgements about what was happening as a result of email overload.

A more contained study of email (Weiss Roberts, 2104) shows it was possible to categorise the sources of 235 emails in a 48 hour period, yet still the author (a physician and educator) immediately concludes "Perhaps it is more accurate to say that each day in the physician's life is continuous 'e-presence' and 'e-distractions,' combined with other real-time activities" (375). Drake's (2015) paper too refers to emails in the round – what prompted her to write her paper was a "cache" or "genre" of emails that had a shared sense of powerlessness and anger and that also jointly made her feel misrepresented and wrongly positioned in her new role as an academic leader.

Between them, these two papers made me aware that what I was thinking about was not 12,000 to 14,000 undeleted emails in each year – it was how email as a continuous and shared process was affecting me as an individual and also the people I worked with collectively. I decided to capture my thinking as I attempted to undertake the first stages of the "impossible" task. I transferred the emails from my in-box to a folder entitled 2014–15 – itself quite a time-consuming task – and at the same time audio-recorded my impressions as the email titles passed my eyes. I then replayed the recording to allow me to identify key "meanings" of email from the year I had looked at. These are captured in the section below.

6. Impressions from a Year's Emails

As the emails passed my eyes while I gathered them, I noticed that I spoke more about my own habits, weaknesses and tendencies than about their content. However, there are a couple of lists of content that show how many disparate and seemingly random themes present themselves in an exercise such as this. I also noted the absence of some emails I would once have found. I became very aware of politeness conventions and respect for friends, but also a concern about the mix of work and other emails. Within work contexts, there are still many phatic messages – "thank you Christine" – that seem to be polite but also tell me that everything necessary has been completed. There are observations about the techniques senders use to attract attention. The overwhelming impression (as anticipated) was an

emotional one – guilt about not doing things “properly” with respect to answering and controlling email. I drew an analogy with a physical equivalent (keeping things in the attic) and found this to be generative in terms of thinking about changing my attitudes to email. I have taken some quotations and reflected further on the implications using CHAT to guide me.

The result is impressionistic and emphasizes an emotional response to the email corpus rather than a scientific approach. Using my own responses helps in avoiding some of the more tricky ethical implications of categorizing and perhaps citing emails that involve a range of people in my own institution and beyond. Yet it does not obviate all of the ethical dilemmas, as it is clear that I am critical of institutional and national strictures on academic time and practices. The fragments of my impressions selected are neither objective nor complete; I have found them useful, however, for highlighting the illuminating effects of a CHAT perspective on email.

Short quotations from my recording are:

1. I haven't taken sufficient trouble to learn how to do the email housekeeping I should be doing.
2. It's a huge mix...
3. Messages about [new] emails are now sliding in and making a noise to let me know they're here – they're very insistent.
4. Our email system changed ...
5. I've cut myself off from some mailing lists
6. At least I have a record of my dealings with them [PhD students]
7. I started to realise I'm a contributor to this deluge as well
8. I'm going to write about my father who never used email but had similar [hoarding] tendencies to mine

These are elaborated in the following section.

7. Email in the frame of CHAT

1. I haven't taken sufficient trouble to learn how to do the email housekeeping I should be doing.

There were several comments early in the recording about my guilt at having amassed such a huge collection in four years. I have never properly archived email in over 23 years of using email; my “system” has always amounted to answering email immediately and deleting bits periodically. This broke down about a year ago when I discovered I did not have time to deal with email immediately and had to resort to flagging or marking as unread. I had thought that the archiving process would be relatively quick and simple, but as is often the case with first use of technology, it was not intuitive.

In terms of the activity system of higher education, the action of filing does not make a major contribution to my own engagement with the motives of education of

students and scholarship associated with digital education. It is interesting that the division of labour that once separated out the more administrative functions in a university began to change in the 1980s and 1990s when practitioners began to do their own typing and document keeping. Copies of memos would once have been filed by administrators and available for consultation. This ancient history does not excuse my poor email filing, but the distance from my own major motives and goals offers an explanation. Combined with the time required to learn how to do it properly, the result is two time-consuming sets of actions that distract me from what I see as more pressing ones. In other words, the work I am doing now might once have been done by two or more people. There is no time in our workload model for the extensive filing exercise I intended to do.

My previous approach of “dealing” with email immediately suggests something that has been operationalized. I automatically open emails marked as new – that is done without thinking. Once I could take action on them: now I sometimes have to reflag them, creating a new “trigger” for action, but it works in a different way. What was once an almost synchronous response (on seeing the email) has now become more asynchronous.

2. It's a huge mix...

... of notifications, the need for compliance (possibly less than I might have thought), and I'm starting to recognize names of people who've sent me emails in the past who I've since got to know more closely, ... contractual details from publishers...As things pass I can see I've missed ...participating in interesting events, I see exclamation marks because people are wanting to really draw attention. There's a mix of a sort of politeness. ...

There was less emphasis on content in my comments than might have been expected from my self-imposed goal of finding out about the content of my emails. As well as the above list, already interspersed with other more “process” type comments I noted a few personal and political messages, some nagging ones from academic and professional networks such as Linked In and ResearchGate and many messages from apps I'd signed up to such as Scoop-it and Pinterest which I did not have time to follow up.

Further reflection on content, which I did not comment on directly in the gathering exercise, is that many of my messages are conversations with a couple of close colleagues, and I frequently do a search under these people's names in order to locate some important information. I am interested that this did not really feature as significant in my gathering up process. I suspect it is because I was more alerted to annoying or alarming messages.

The observation on there being less call for compliance that I had suspected is also interesting. There are indeed some messages that do this, but they loom large

in my mind – and other observations (see especially number 6 below) suggest that I self-regulate for this anyway. In this way, I have internalized the dominant culture.

Taken together with my first quote above, the impression is that many of the disturbing emails are attempts to influence my attitudes to what higher education teaching and research should be – things that are trying to “sell” me an approach. The ones that I did not particularly react to but have identified as valuable are those that offer resources that will help me with my tasks – from people who have taken similar actions in the past. Crucially, they are from people who share my understanding of the object of our collective activity.

3. Messages about [new] emails are now sliding in and making a noise to let me know they’re here – they’re very insistent.

I became aware of the increasing insistence of signs to attract attention and the need for us all to be able to control our own attention in the face of this (Rheingold, 2012). If Vygotsky were still alive, he might see this as a tension between the stimulus-response mechanism and higher order socially-mediated thinking.

Persistent and insistent distractions depend on our willingness to respond automatically to a signal: my operationalized response to immediately open emails now needs attention as it is becoming oppressive. I have already imposed a ban on myself from keeping email-bearing devices in the bedroom and from looking at it after 9 pm. When I am successful with this, it has helped sleep. It is also necessary to consider what has been operationalized here when email does interrupt sleep; it means that contact from students and staff is acceptable at any time of day or night. (See also point 7 below.)

4. Our email system changed ...

Structural and technological changes have an effect on the activity system that can often be hidden – new systems may change what is allowed in unseen ways, both positively and negatively. They may introduce new tensions and contradictions, and change routes to achieving goals and objectives. An advantage of changing a system, however, is that it is an opportunity to bring such differences to the surface and see any adaptations at the point that they are made – with the associated opportunity to determine what should be valued. In this case, the new system highlighted the need for consistency and control across a huge organization and raised questions about the role of external technology providers in determining the communicative functions within a university (which is too big a topic to pursue here but does indicate an intersection of activity systems – commercial and academic).

5. I've cut myself off from some mailing lists

The exercise produced a number of observations about loss. One result of being potentially overwhelmed by email has been to cut off some of the supply, including some that was previously valued and more associated with my own view of our collective object.

I have also seen how the wish to cut off has resulted in students not receiving essential messages. They have not accessed their student emails because of what they perceive as spam associated with them. This is a key problem for universities, especially with online students. The email, far from mediating, is a source of noise in the system. Some writers see this as a sign for the need for new collaborative tools (Rao, 2015).

6. At least I have a record of my dealings with them [PhD students]

The full quote from which this was taken is:

As I work through all this I'm seeing messages come up from my PhD students, they always give me a little qualm – is this something I've followed up appropriately? At least I have a record of my dealings with them and that can be important for compliance with recording for management; and this is why I don't throw out many emails because we're expected to comply with so much and expected to know when we've seen people, but as soon as we've seen people rather than recording it we're moving on to the next task or answering the next email.

The reason for qualms over my doctoral students is that I know that they may (or should) have something for me to think about. When writing up my notes on them, their emails remind me of the timing and themes of our meetings. I have to record that they are all “engaged” each month, in order to meet Border requirements for some students. The University aims to treat all students the same way, so any such requirements have to be met for all students. This is an instance where two activity systems – university and border control – intersect and affect each other, with implications for practitioners.

While the email corpus here serves as an extension of my memory for this purpose, it also contains examples of some emails generated when I have not complied, through an oversight. I try to avoid getting these – it means additional emails have to be sent and received.

7. I started to realise I'm a contributor to this deluge as well

This reflection, which follows from the one above, is suggested several times. I first realized this around 22 years ago when a colleague complained that an email I'd sent to the whole university had interrupted a train of thought through an alert

sound. Rules governing Email systems have evolved to ensure that few people are allowed to send messages to the whole university or even whole groups – there are gatekeepers for such messages. While this is understandable, it allows for additional unintended consequences and positioning of people as those who can and cannot instigate a message chain.

My main point here is that I am a part of the activity system and should not just see myself as a victim of it. The email system, which can also be regarded as an activity system in its own right, is sustained through the exchanges that continually transform it. My own contributions play a small part in the internalization and externalization processes that lead to change. Undertaking this exercise has led to my questioning and deciding to regulate some of my own actions within the activity of emailing.

8. I'm going to write about my father who never used email but had similar [hoarding] tendencies to mine

As I looked at the emails I had amassed, I was starting to formulate an impression of what I wanted to write about. I realized that there was a strong analogy between my planned filing and tracking and what I have been doing over six years or so in tidying my late father's study and loft, on monthly visits to the family home. My father was an academic before the advent of email. He kept papers, though – and they quickly got out of control, along with many household articles, clothes, furniture, gifts, empty boxes, photographs... the list is about as long as my categorization of emails would be. His collection also included some artefacts from his own parents, my mother's family, and my stepmother's own artefacts are also there. In sorting out his things, I have to look out for genuinely useful or valuable items of information or artefacts – taking into account emotional responses from my stepmother and myself. It has been a fascinating process, mingled with sadness and joy. There are still treasures to be found and their disposal is difficult because of the emotional ties. I have found various futile attempts at filing and recording, including in some of his (obsolete) computers; they all defeated him.

My overwhelming thought with respect to my father's own relationship to these items is that they were a burden to him and he would not have been able to find anything important, except for those things that he would have positioned very carefully in obvious places. The volume of "stuff" made him feel burdened with tasks, but these were tasks of controlling and accounting rather the more mathematical and pedagogical ones he enjoyed. His problems were very similar to mine, and might similarly be considered by drawing attention to the objects of different activity systems.

8. Conclusion

The main tenets of CHAT across three generations can throw some light on the themes raised here. The study highlights the transformation of email from a useful alternative tool for communication to a shaping medium with hidden effects.

From Vygotsky's foundational work on the social basis for development of higher mental functions through processes of internalization and externalization, we are reminded that our use of email is a collective practice to which we contribute as well as internalize. Those of us who use email as a mnemonic device, for example, should aid others who do the same, perhaps by offering clear subject headings.

Leont'ev's tristratal model of activity provides a vocabulary that helps us to consider how we operationalize and automate intentional human actions within our tools and mediating artefacts. Our email exchanges embed the intentions of others, though these may be implicit or hidden and are open to interpretation as we internalize them. But our personal internalizations become externalized in our continuing use of email and contribute to the collective practice. 14,000 unarchived emails may well be evidence of an individual's poor "housekeeping", but also indicates a change in division of labour and a culture of competing pressures on time. Additionally, a repeated theme through the paper is the need to recognize that work can be rendered invisible through processes of operationalizing and loss of a sense of duration. Sending a single email to a worried student can involve hours of unrecognized academic and pastoral labour. I have recently made this observation in an email to management.

Engestrom's recent and contemporary work on activity systems – which emphasizes collective implications and also the boundaries within and across systems – suggests the value of collaboratively identifying contradictions and tensions that lead to expansion of an activity system. Contradictions around emails indicate an activity in need of renewal – for higher education to work effectively, its participants need to resolve problems caused by the internalization of potentially harmful practices. Thus rather than an individual academic counting or measuring the effect of an overabundance of emails, the study suggests that a more useful approach is to work collectively. That way we might identify not only what is hidden but also what may be contributing to our shared feelings of stress and oppression as our academic identities are being eroded in favour of a market-driven activity system that aims to record and measure and optimize the use of academics' time.

An attic full of artefacts, many of them print based – but also including items from a period of increasing production, consumption and regulation in the domestic sphere – suggests an inability to cope with 20th century accumulations of material objects associated with an academic life. Similarly, an overburdened inbox represents a 21st century collation of digital artefacts that have meanings we may not yet fully understand.

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TIME, TELOS, TECHNE, DOXA: THE CHALLENGES OF MASSIVE OPEN ONLINE COURSES

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ABSTRACT. The paper will consider the research, development and ongoing production of Massive Open Online Courses (MOOCs) within a contested field in which an ideal of “unconditional and free” learning, where “intellectual stimulation and personal development” flourish, seems set in opposition to the risks of a neo-Weberian ‘silicon cage’ of institutionalised instrumentalism in practice. The paper will seek to address MOOCs, a special case within the wider educational domain, from the perspectives of existing theories of time, technology, social process, social practice and social change, and in the broader, global context of neoliberal capitalism, and the assumptions about socio-political realities that accompany and underpin it. In particular the paper will draw on the theoretical concept of *doxa* developed by Pierre Bourdieu to interpret the discourse of technology-focussed research in the educational domain.

Keywords: MOOCs; doxa; capitalism; power; technology; time

1. Introduction

This paper will explore issues of knowledge production and their relationship to concepts of time, technology, purpose and power in the context of education systems in capitalist societies. In this context, an investigation of the representation of time helps provide perspective for a critique of collective representations of ends and means, and their relation to political power and domination. Two terms are introduced to examine these relationships, operating within two social domains: *telos* refers to purposive political direction towards given ends; *techne* refers to the means to pursue and deliver these purposes – these include the various uses of technology. These two terms function in this discussion as general signposts or heuristic devices rather than rigorous analytical categories, the aim being to illustrate how representations of time might be investigated as socially constructed

dimensions of both *telos* and *techne*, in which power makes use of representations of time to meet its own ends.

Pierre Bourdieu's concept of *doxa* is introduced into the argument as a potentially useful analytical tool in relation to investigations of current discourse and practice in the domain of higher education. The concept is deployed to shed light on how the political attributes of time are, to use Bourdieu's terminology, "misrecognised" as such so that critical resistance to the dominant, arbitrary representations of time and their role in the pursuit of political ends (that are so taken for granted as to be almost invisible) is marginalised. The extent of this marginalisation is traceable through the example of higher education in an emerging economy – India – and the significant role played by the adoption of a *techne* of neoliberal capitalist belief and practice in creating the conditions for the misrecognition of time in its political context.

This socio-political perspective on time can be traced further into the field of educational discourse and practice, delineated by, for example, debates about the nature of teaching and learning, the role of technology in education, and also a *lack* of any debate of either of these issues in some quarters. In particular, this seeming elision of attention to the misrecognition of time's relationship with political ends, and the means to achieve them, affects inquiry into such areas of practice as Massive Open Online Courses (MOOCs), in which an intense focus on the means to deliver – the *techne* – is substituted for insights into the political ends – the *telos* – that are the driving force behind much of the social change affecting the education system itself. One of the aims of this paper is therefore to begin to discern possible future investigative perspectives on MOOCs and other forms of online knowledge production that aim to reinstate the political, and by extension to problematise representations of time.

2. Ends and Means: Theorising Time, *Telos* and *Techne*

The social representation of time as a function of power and domination has a long history, in particular in the form of discussion about the nature and significance of ends and means. This representation has long been a key concern for the Western philosophical tradition, and the various currents of social theory that spring from it. There is no space in this article for a full and critical discussion of these concepts, but the short exposition in this section of the connections between time and political purpose seeks to provide a conceptual framework to carry forward into the discussion of education and technology that follows.

That a certain set of power relations requires representations of time as a linear, measurable, controllable and finite resource is an idea that is traceable in early Western philosophical writings. Here, power is an *a priori* assumption that shapes time to its requirements. The concept of linear time for example, with its beginnings, endings and connections between the two, appears in Aristotle's thought. He engages with the metaphysical problem of purpose – *telos* – in order to

explain the causation in linear time that he believes he observes empirically in the world, by invoking goals or fixed causes (Barnes, 1982: 73). Aristotle's notions of *telos*, goals and linear time also raise the issue of the semantic ambiguity of 'ends': in one sense these are limiting points, but also, importantly, the term denotes a will to pursue these ends as political goals. Aristotle therefore imbues his representation of time with political purpose, and so grounds it firmly in social practice as socialised time.

In Aristotle's judgement the government of the state is good when it has "the good of the whole community" as its main goal (Russell, 1961: 200). He raises the question of how this 'good', a political goal – a *telos* – might be implicated in the struggle over who it is that decides what that end should be, for whose benefit, and also the means by which those ends will be achieved. Aristotle therefore presents time and political will in an inextricable relationship, through the power to determine ends and means – in other words to assert political domination over social time. Social time therefore is recognised as a dimension of political power.

Karl Marx addresses this relationship between time, ends, means, and their political underpinnings, in his concept of surplus labour, the means by which, in capitalist societies, capital asserts its domination over time by appropriating the time-value of labour, convertible into wealth through exchange value. For Marx therefore, time is an essential component of capital's exploitation of labour. Under capital "wealth consists directly in the appropriation of surplus labour time, since its direct aim is value..." (McLellan, 1971: 144). Marx therefore posits a political-economic *telos* within the wealth accumulation process based on capital and labour, in which labour is equated with time as a social object. He hints at this convertibility of 'natural' time to a socialised resource in a capitalist mode of production: "Nature becomes for the first time simply an object for mankind, purely a matter of utility, it ceases to be recognised as a power in its own right..." (McLellan, 1971: 94). The subsequent representation of time, as a denatured utility, is centrally significant in terms of time's newly-established convertibility as value, becoming absorbed into the means (*techne*) that meet the goals (*telos*) of the owners of capital: value, share of wealth, and ultimately political domination (McLellan, 1971).

Marx extends his analysis of capital's *techne* with his emphasis on the historical development of science and technology, harnessed in the service of capital as 'productive forces' that reach their ultimate utility when "...the means of labour undergoes various metamorphoses, of which the last is the *machine*, or rather an *automatic system of machinery*..." (McLellan, 1971: 132). Marx also stresses the urgency with which capital "accelerates and compels this development", in a relentless, *time-compressing* transformation of *techne* through the deliberate, rational application of science and technology (McLellan, 1971: 135).

From a Marxian point of view then, we can only meaningfully understand the relationship of time to technology – whether referring to machines, institutions, or even language and consciousness itself – as means (*techne*) viewed in relation to a

specific mode of production, its corresponding system of “social relations” of production and a certain conception of political domination relating to certain goals – i.e. a *telos* (McLellan, 1971: 136). Marx therefore grounds *telos*, *techne* and time within specific historical social structures and relations – in this case those societies organised according to the dominant *telos* of the owners of capital – in which capital’s dominance over time plays a key role.

A similar concern with issues of goals, means and their relationship to socialised time also preoccupies Max Weber’s investigations of the necessary and sufficient ethical conditions that underpin the capitalist world view. Weber invokes Benjamin Franklin, who urges his readers to “Remember that *time* is money” (Weber, 1985: 48). For Weber, Franklin’s ethical appeals confirm and reproduce a collective representation in which “Man is dominated by the making of money, by acquisition as the ultimate purpose of his life.” (Weber, 1985: 53). For Weber the acquisitive *telos* promulgated by Franklin defined an ascetic, duty-bound conception of self and salvation. Weber argues that the socio-cultural influence of this ascetic *telos* was secularised via a non-sacred, linear conception of time, finding its ultimate expression through the means and goals of capitalism as, respectively, a *techne* of machine production and a *telos* of wealth accumulation and political domination.

Weber identifies the means – “the technical and economic conditions of machine production” – as *the* factors that transformed social relations and “to-day determine the lives of all individuals who are born into this mechanism...with irresistible force.” (Weber, 1985: 181). For Weber the historical development of representations of time, *techne* and *telos* could be described as a move from “ascetic rationalism” to “its dissolution into pure utilitarianism” (Weber, 1985: 183), in which the “light cloak” of salvation-inspired asceticism becomes an “iron cage” of secular instrumentalism (Weber, 1985: 181) divorced from its original other-worldly purposes. Weber therefore no less than Marx seems to implicate the representation of time and its value (i.e. money equivalence) as a key component in the domination of social relations in a capitalist society.

This relationship between goals, means and representations of time has also attracted the attention of contemporary theorists in their critiques of modern, neoliberal forms of capitalism. For John Gray, the calculating, rational, economic subject identified by Weber is attributable to the influence of liberal humanism (Gray, 2003: xi). Gray contends that the “central doctrine” of liberal humanism, stressing the free will of the “free, conscious individual”, is a utopian error. (Gray, 2003: 41). He carries this assertion into his attack on the values of neoliberal capitalism, and the philosophy of Friedrich Hayek in particular, questioning what he claims is Hayek’s ontological fallacy: the universality of the beliefs underpinning market institutions. Gray invokes Hayek’s modernist dictum of progress moving forwards through time “...‘movement for movement’s sake’...” (Gray, 2007: 135) implying that ends and means – *telos* and *techne* – coalesce, eliding the very question of the existence of ends. In Hayek’s neoliberal

universe, time is co-opted to the bidding of a *telos* that hides itself within its own means; this phenomenon of the elision, the disappearance, of ends is discussed further in the next section with reference to Bourdieu's concept of *doxa*.

Acknowledging Hayek's modernist fascination with movement, David Harvey asserts that the "stress of time-space compression" at the end of the nineteenth century, both technologically and conceptually, delivered a rupture with the Enlightenment idea of an absolute, homogenous time. The new, relativistic notion of time was central to the birth of modernism and its Hayekian perpetual motion of progress (Harvey, 1990: 252). Harvey also makes a powerful connection between technology and time, in which information technologies in particular "have compressed the rising density of market transactions in both space and time" (Harvey, 2005: 3). The logic of capital accumulation urges time compression, as agents prefer ever shorter-term contracts, in a race to shorten transaction time to the minimum. As with Marx and Weber, machines and a machine mentality are crucial to this fundamental social transformation, in which time-space compression and capital accumulation are inextricably linked.

Zygmunt Bauman follows a similar line of argument to Harvey, stressing the central role of the social manipulation of time as the defining feature of modernity, the ultimate machine in the conquest of territory (space). Like the other theorists above, Bauman historicises time in social practice, socialised time having become an adjunct of *techne* (Bauman, 2012). Bauman's assertion, following Weber, is that this commitment to instantaneity has devalued the notion of eternity, or even the long-term view of time, with unknown, unpredictable consequences (Bauman, 2012). Wolfgang Streeck extends Bauman's idea in his claim that time, as defined in the economic models on which the *techne* of neoliberalism is constructed, "...always means right now." (Streeck, 2014: 176).

Two parallel representations of time are addressed by the theoretical perspectives above: one is subsumed under the priorities of *telos* – the notion that in hierarchical societies, power determines specific goals / ends that are conceived and pursued through a linear conception of time. The second representation is implicated in the means – *techne* – through which these goals are achieved, examples being Marx's concept of surplus labour or Weber's 'iron cage' of instrumental rationality, in which domination of socialised time is central to the reproduction of societies based on capitalist social relations.

The connections between these representations of time as a constituent element of the political-economic domination of ends and means, are therefore abundantly apparent in the literature of social theory. But what is the nature of the relationship of these connections to education systems, and how is it that these linkages and, as John Gray implies, the *telos* of neoliberal capitalism itself, become elided – removed from discussion? Pierre Bourdieu's concept of *doxa* provides one approach to rethinking this problem.

3. Misrecognising Time and *Telos* in *Techne*: The Role of *Doxa*

Bourdieu explicitly connects representations of time with power and domination. “Social time”, he says, “tends to fulfil, even more effectively than the division of space, a function of integration in and through division, that is, through hierarchization” (Bourdieu, 1977: 163). This notion of social time, as with the other theorists mentioned above, confronts the epistemological reworking of the seemingly natural, now wrought into the fabric of social life within what Bourdieu terms arbitrary structures of domination. And if domination is arbitrary, then so too are the representations of time implicated in it, as naturalised social objects: “Every established order tends to produce (to very different degrees and with very different means) the naturalization of its own arbitrariness” (Bourdieu, 1977: 163) in which we can include the established order’s arbitrary domination over time through both ends (*telos*) and means (*techne*).

For Bourdieu this issue of naturalisation is central to his concept of *doxa* – a zone of the “self-evident” and therefore “undiscussed”, “undiscussable”, “unsaid” beyond both orthodox and heterodox discourse, a zone in which the world is “taken for granted” and that supports the existence of a fundamental misrecognition of the arbitrariness of existing power relations (Bourdieu, 1977: 164). This rendering of the epistemological as a dimension of the political is crucial, Bourdieu argues, to an understanding of social reality: knowledge production of all kinds, including educational systems, is imbued and implicated, necessarily and inextricably, with political power (Bourdieu, 1977: 165).

By ceding logical primacy to power in this way, Bourdieu’s line of reasoning makes problematic any attempt to correct the misrecognition of power relations through knowledge production or education alone. Instead, effective critique of the undiscussed is driven primarily by events, conditional on an objective crisis that “destroys self-evidence practically” and that engenders a struggle for dominance among competing discourses (Bourdieu, 1977: 169). He makes this necessary, antagonistic quality abundantly clear when he claims that “Classification systems are social products and, as such, they are fought over in a permanent struggle.” (Bourdieu, 1993: 58). Critical struggle against a dominant *telos* is therefore a necessary but not sufficient element in rediscovering, contesting and resisting the naturalisation of representations of time.

Bourdieu claims that this dominant *telos* is associated with an economic calculation that gives shape and direction to social practice, which itself derives from “playing for stakes that are non-material and not easily quantified” (Bourdieu, 1977: 177). For Bourdieu, economic calculation, with its interests and “stakes in the game”, is a key ontological element in understanding all social practice, including the domain of knowledge production and exchange, that allows him to posit the “perfect interconvertibility” of economic, symbolic and cultural capital (Bourdieu, 1977: 178).

This analysis leads Bourdieu to consider the significant effect of educational systems on *doxa* in modern societies, in which he specifically equates academic

qualifications with cultural capital, and suggests that they play a role in providing “...the dominant class with what Max Weber terms ‘a theodicy of its own privilege’...” (Bourdieu, 1977: 188). In this formulation *doxa* hides the connection between inherited cultural capital and academic qualifications, a relationship that Bourdieu is at pains to investigate in later work on the role of educational institutions in modern cultural life (Bourdieu, 1988). He therefore problematises social institutions, suggesting that social reproduction is too powerful a force to allow any area of social life to escape its influence, describing an educational system as “...an institutionalized classifier which is in itself an objectified system of classification reproducing the hierarchies of the social world in a transformed form...” (Bourdieu, 1984: 388).

It’s worth noting that one important corollary of Bourdieu’s ‘reflexive’ posture is that he wishes to avoid an Althusser-like utopian approach to knowledge production, in which the production of ‘true’ knowledge about the social world, and therefore the “capacity for consciously changing that world”, is restricted to a limited number of individuals (Bourdieu, 1984: 398). Equally, he challenges the similarly utopian notion of the ‘liberatory’ potential of the education systems of modern societies, on the basis that this very experience “implies a submission to the dominant values...such as the hierarchies linked to educational qualifications or to the capacities they are supposed to guarantee” (Bourdieu, 1984: 397). The epistemological issues linked to social practice and social change, as well as agency, are inextricably caught up in the structures of hierarchy and the relations of domination of ends and means (i.e. domination over time, *telos* and *techne*) that they presuppose, relations that Bourdieu suggests are always subject to the evasions and elisions of *doxa*.

According to Bourdieu, then, a fundamental interrelationship will always exist between representations of time as a misrecognition of ends and means (*telos* and *techne*), the hierarchical forms of domination that support these representations, and education systems that play a role in reproducing this domination, subject to the transformations of *doxa* that support misrecognition. We should expect then, on the basis of Bourdieu’s model, that education systems help perpetuate a certain misrecognition of time, by evading the issue of *telos* in favour of a focus on a hierarchy-sustaining *techne*.

This process is explored in a paper that maps Bourdieu’s concept of *doxa* to the issue of neoliberalism and higher education in the modern state. In it, Rohit Chopra discusses the question of how a *telos* based on the positive effects of globalisation and liberalisation established itself as the dominant discourse in India. Chopra notes that “the criteria by which something is considered genuine cultural capital” also becomes grounds for antagonism between competing interests and levels of domination (Chopra, 2003: 428). For Chopra this manifests itself clearly in the modern Indian education system, in which science and technology education in particular – a key target domain for transformation into a neoliberal *techne* – has become a “marker of talent and capability” that leads to increased job

opportunities, social status and a powerful sense of self-esteem derived from being perceived to be “working in the service of the nation” (Chopra, 2003: 436).

Chopra claims that the upper echelons of Indian society find the means of “preserving their impermeability” from subordinate classes by internationalising themselves, both in terms of their education and their careers – a desirable but expensive “overseas education” guaranteeing prestige (Chopra, 2003: 437). A new generation of elite Indian graduates has become, to use Bauman’s term, “exterritorialised” (Bauman, 2012) – launched into the global labour market, and being both transformed by this process, and transforming themselves, into globalised labour in pursuit of opportunities made available by globalised capital (Chopra, 2003). For Chopra, as for Bourdieu, there is an intersection of knowledge and power where agents with both belief in, and stakes in, the ‘game’, jockey for position in hierarchical class power relations: “In sharing the categories of neoliberal thought, the elites of Indian society, at once, affirm and reinforce the neoliberal vision and policies of the Indian state” (Chopra, 2003: 440).

Chopra extends his critique of the Indian education system, asserting the non-neutrality of the ‘academy’ in relation to the system of power relations, specifically citing the privileging of ‘economic elites’ wealthy enough to afford the necessary private tuition in English or a science and technological education. Chopra reasserts the arbitrary nature of *doxa* where it conceals contradictions by allowing commitments to representations of science, reason, progress, liberty, and the individual to remain free of critical examination, “operating as a foundational discourse” (Chopra, 2003: 438). At the same time he notes a possibly complementary shift in pedagogical emphasis within the educational field, away from commitments to truth and knowledge per se in favour of “the acquisition of ‘skills’ needed to be competitive in a global economy” (Chopra, 2003: 438). The elision of the *telos* of political ends that this shift represents is also, as we have seen, an elision of a certain view of time and its replacement with a means-focussed commitment to pure *techne* in which any discussion of the role of time in the form of *telos* has disappeared.

As the role of the state in Indian education, particularly with regards to subsidising the affordability of courses for example, has declined, so the “key historical facts” about this transformation have been elided by *doxa* (Chopra, 2003: 439). Chopra contrasts this, the current specific historical situation, to that which pertained shortly after Indian independence, when faith in science and technology was underpinned by a vision of them being the means (the *techne*) by which an alternative *telos* of social equality might be pursued (Chopra, 2003). It is worth noting here that Harvey suggests that the criticism that a fundamentally anti-egalitarian instinct might have been the foundational *telos* of neoliberalism all along, has been made to appear “unthinkable” (Harvey, 2005: 119).

Streeck’s view is that education has a central role to play in resisting these tendencies and their efforts to compress and devalue time. He envisions a role for “critical intellectuals” to support a growing awareness among citizens of developed

nations that their views are not being heard, and challenge the voices who claim “there is no alternative” (Streeck, 2014: 160). Harvey however cautions against over-optimism, demonstrating the role of the ‘academy’ in the production and transmission of neoliberal ideas, with “a very significant impact on thinking” in schools and departments of all the world’s major research universities (Harvey, 1990: 44). For Harvey the neoliberal valorising of *techne* leads to a “...fetish belief: that there is a technological fix for each and every problem, and suggests that technological “solutionism” has been a feature of neoliberal discourse about progress from the outset ” (Harvey, 2005: 68).

In applying the concept of *doxa* to the case of higher education in an emerging economy, Chopra demonstrates its usefulness in analysing how structures of domination take control of representations of time in the context of ends and means, in which an anti-egalitarian, hierarchical *telos* is misrecognised as such and the higher education system is co-opted into a *techne* of neoliberal economism. How might Chopra’s approach, using Bourdieu’s concept of *doxa*, be extended to critically examining the role of technology in education as another element of this *techne*, in the case of Massive Open Online Courses in particular, also bearing in mind the assertions of Harvey and Streeck above about the role of the academy as a source of critique?

4. Silicon Cage? The Challenges of MOOCs

The concept of *doxa* is useful in helping to interpret the misrecognition of time in the context of a hierarchical *telos* and its adjunct neoliberal *techne* within the field of educational technology, along the theoretical lines identified by Bourdieu and Chopra. Although Gert Biesta’s work on educational discourse takes its theoretical cues from Michel Foucault’s delineation of discourse as “what can be seen, what can be said, what can be known, what can be thought and, ultimately, what can be done” (Biesta, 2005: 54), there are clear parallels with Bourdieu’s notion of *doxa* here, particularly in light of the shift in emphasis from ‘education’ to ‘learning’ that Biesta identifies. Biesta asserts that “something has been lost” as ‘education’ becomes ‘learning’ in this context (Biesta, 2005: 54); from Bourdieu’s perspective discussed earlier, this elision signifies both domination and agency in the struggle over the extent of *doxa*.

Weighing up some of the arguments of critical pedagogy in favour of an emancipatory role for education, Biesta credits it as an “Enlightenment idea” that has as its *telos*, its “ultimate aim” that “rational autonomy” of the human subject (Biesta, 2005: 54). He reasserts this: “...Education, unlike learning, is always framed by a *telos* – that is by a sense of purpose...” (Biesta, 2012: 36), indeed educational practices are “teleological practices”, making the question of purpose the single most important educational question (Biesta, 2012: 38). There is however a tension here between notions of the ‘societal emancipation’ necessarily prior to ‘individual emancipation’, reminiscent of Bourdieu’s notion of ‘necessary

crises', and the role in the neoliberal imaginary of the necessarily *a priori* autonomous subject. Biesta doesn't make this link explicit – but both notions privilege the common heritage of the Enlightenment-humanist concept of the freedom of the individual subject, of which theorists such as Gray and post-humanist theorists alike are critical (Gray, 2007). Others such as Harvey might counter with the argument that rationality is the only secure way to approach these issues, but control of its *telos* – and therefore, time – has first to be recognised as a possibility to be distributed, and not harnessed solely in the interests of the dominant class (Harvey, 1990).

Biesta traces trends in pedagogic theory to explain a rupture in the educational domain that has substituted 'learning' for both 'education' and 'teaching' (Biesta, 2005; Biesta, 2012). He claims that the assumption that learners recognise their needs *a priori* is "highly questionable" (Biesta, 2005: 59). We are therefore confronted with a means and ends problem: if the goals / ends – the *telos* – of practice have been hidden, or are externalised and undiscoverable, the focus of practice will be on means – *techne* – the critical domains of knowledge having been assimilated into *doxa*: "The more important questions about the content and purpose of education become virtually impossible to ask..." (Biesta, 2005: 59). In other words, any recourse to critically examining a time-dominating *telos* and its supportive *techne* risks being subject to the elision guaranteed by *doxa*.

The role of such a discourse, which promotes "...dominating, economically-linked social practices" in unquestioning ideological language is the focus of an exploration of the content of policy documents, particularly those addressing 'technology', from which any reference to human subjectivity is expunged (Hayes and Jandrić, 2014: 198). Information technology is represented in these policy statements as a dehumanised, asocial entity; social labour is not acknowledged at all (Hayes and Jandrić, 2014). Social practice is thereby elided by *doxa*, and *techne* is privileged with a reified subjectivity all of its own and labelled 'technology'. There are echoes here of Marx's observations about the role of machines in eliminating labour (and so time also), and the authors indeed suggest that "...the network society is the first era in human history that witnesses active, if unconscious, efforts on removing human beings from educational praxis" (Hayes and Jandrić, 2014: 204). Once we erase the role of labour from the perspective of critical inquiry, we also elide a key social representation of time from examination and control.

This ideological character of language also provides a basis for a critique of "technology enhanced learning", which discovers the limits to criticism of the relationship between education and technology – what in Bourdieu's terms we might call the 'boundaries' of *doxa*. Bayne in particular attacks the "reductive discourse" that posits learning as an "economic transaction", reframing and essentialising the human subject beyond any consideration of *telos* and the relations of social practice, in which "...technology is cast as being independent of social contexts..." (Bayne, 2015: 9), independent therefore of social time itself.

This strategy is entirely consistent with Bourdieu's model of practice, in which all realities counter to orthodox / heterodox understanding are relegated to *doxa*, the realm of the unspoken.

In their review of 'technology enhanced learning' Kirkwood and Price argue that *in practice* our use of technology in education broadly falls in line with "traditional activities". The 'interventions' made often report that they are being 'technology led', in an inversion of the *techne / telos* line of cause and effect, that once again points to the real drivers of change being elided as *doxa*. More problematically, the authors' analysis seems to break down along a binary opposition between orthodox approaches to technology enhanced learning that replicate or supplement existing practice, and heterodox approaches that seek to 'transform' learning and teaching processes – an opposition that they summarise as "doing things better" or "doing better things" (Kirkwood and Price, 2014: 9–10).

Assuming that Bourdieu is correct in his thesis that such an orthodoxy / heterodoxy opposition will together negatively define the boundary of *doxa*, we might wish to go further and ask a more challenging question, that harks back to Aristotle's notion of the 'good': what is 'better', and who gets to define it? This question challenges pedagogy to, in turn, challenge its own, *unquestioned and unspoken*, institutional underpinnings and their relation to time and power. For example, the concept of 'participation' seeks to affirm the 'openness' of institutional boundaries that *in practice* might be much less negotiable than represented, and that therefore may, unwittingly or otherwise, support the devaluing of certain modes of participation, of which, to take one example, a decline in part-time or mature students in higher education may be merely one symptom. The lack of an analysis of a *telos* of power relations with regard to *techne* and its role in the technology enhanced learning debate means that we risk not moving beyond an instrumentalism of 'doing better', and we are left a long way from satisfying Biesta's requirement for a conscious reframing of a *telos* that would re-engage the struggle over representations of social time. Because the *telos* remains undiscussed, critique of representations of social time is also subject to erasure.

This is certainly the risk identified by Haugsbakk and Nordkvelle, who claim that a "technocratic dream" of education is actualised in the language of learning identified by Biesta, an "industrial / instrumental notion of technology" being apparent in much policy discourse and in the emphasis, as in Chopra's research, on the "digital skills" of learners for example (Haugsbakk and Nordkvelle, 2007: 10). Kirkwood and Price also criticise the fact that means are emphasised over ends, with research being dominated by "technology-led" perspectives leading to "deterministic expectations that introducing technology would, *by itself*, bring about changes in teaching / learning practices" (Kirkwood and Price, 2014: 25–26). For them "transformative learning" requires "sophisticated reasoning about the goals of any intervention..." (Kirkwood and Price, 2014: 26), but they do not map out where this reasoning might lead us, if not energised by a critique of the wider

telos underlying institutional motivations in the context of neoliberal, hierarchical social relations and the misrecognition of the domination of time by such social relations.

These issues of obfuscation become even more apparent in the case of Massive Open Online Courses (MOOCs). The Gartner Hype Cycle model suggests that, while the hyperbole around the ‘disruptive’ potential for MOOCs may have abated in the last two years, this might simply mean that MOOCs have now entered the Cycle’s ‘Trough of Disillusionment’, prior to an upward ‘Slope of Enlightenment’ phase (Tapson, 2013). This suggests that as institutions realise the capabilities of MOOCs *vis-à-vis* their own ambitions – in other words as they learn to deploy the *techne* of online courses developed through MOOC practices – they will align them with a neoliberal *telos* that increasingly requires the commodification of course provision based on price signals in a mass market. These conditions will almost certainly not be conducive to supporting the emancipatory educational practices mentioned by Biesta above – especially those that challenge the capture of time by the dominant *telos*.

In much of the emerging educational research on MOOCs, *techne* looms large in the scope of the “big questions”, which focus on innovations, either of a pedagogic, systematic or technological nature, or on definitions of “efficacy” (Jona and Naidu, 2014: 3). In research that considers the “strategic” value of MOOCs for higher education, authors often invoke the “expansion” of “offerings”, the “more effective use of technologies”, the demand of increasing numbers and diversity of students, the need to “equip” students with information skills, and the need for institutions to “tackle new competitive niches and business models” in a world where “...technologies can disrupt the status quo of education” (Conole, 2013: 13). Again, these approaches fail to discuss the qualitative issues of struggle over purpose (i.e. struggle over time), raised by Biesta, and risk opting instead for a focus on the quantitative augmentation of existing practices in an unreflective way.

Other authors focus on “methods” to increase student engagement in activities within online courses, and identify “diverse student behaviours” that might help develop “predictive models” and forms of automation, “badges and other incentive mechanisms” that might “increase user engagement and learning” (Anderson et al., 2014: 10). In a similar *techne*-focussed vein, researchers note that Machine Learning techniques are increasingly being seen as effective methods to “...explore, and model, nuanced, large-scale learner data from MOOCs” and produce “scalable and robust models...equipped to cater to the needs of a diverse, global body of lifelong learners” (Gillani et al., 2014: 9). Laurillard for example develops this line of argument into an evaluation of how MOOCs might enable institutions to “...fully exploit the capability of the technology” (Laurillard, 2014: 32). Laurillard also notes that certain attributes of online learning – such as peer review, collaborative learning and especially certification do indeed have real value for participants, with the corollary that these attributes are immediately convertible as exchange value, as the author suggests “We need a less problematic technical

authentication process to increase both reach and revenue significantly...” (Laurillard, 2014: 32).

A recent JISC white paper is also revealing about the capital accumulation *telos* driving the expansion of MOOC provision. The authors explicitly link their development with the revenue aims of higher education and “private investors” seeking to “build their brands” and “enter the education market” (Yuan and Powell, 2013: 18). The authors excitedly posit the existence of an “open HE marketplace” in which “openness” is equated with a vision of education as affordable, accessible but at the same time “profitable for the institutions in an open higher education ecosystem” (Yuan and Powell, 2013: 18). In the context of the authors’ reference to the original development of the concept of “disruption” as a business phenomenon that addressed “...the low end of an existing market” (Yuan and Powell, 2013: 13), the “openness” thus elucidated begins to resemble a synonym for commodification. They envisage a de-socialised “ecosystem” in which time in the form of the *techne* of marketised social relations has attained an unquestioned, naturalised status as a *modus vivendi*, but where the wider issues of time, domination and power – and their governing *telos* – have been elided by *doxa*.

Other perspectives on the MOOC phenomenon suggest it may be that because MOOCs are a “moving target” they challenge institutional categories of “quality”, leaving the MOOC domain open to further contestation and struggle over ends and means (Hayes, 2015: 3). For example, connectivist pedagogical approaches involving “connective knowledge” and “knowledge making”, appear to reassert the social over the technological in their desire to meet a need for “...*proper connectedness to the right people and information...*” where it is claimed “...facilitators share their sensemaking habits and their thinking processes with participants. Epistemology is augmented with ontology” (Siemens, 2010: 3). MOOCs in this context seem to adopt a stance of “participative pedagogy” that reduces barriers to learning in which “learners” benefit from increased “autonomy” and “develop skills to create, engage, and share in global interactions” (Siemens, 2010: 5). Siemens also explicitly, if tentatively, identifies a political role for MOOCs: “Their role in developing a digital citizenry is still unclear, but democratic societies require a populace with the skills to participate in growing a society’s knowledge” (Siemens, 2010: 5). But insofar as there is no outright critique here of the dominant *telos* there is little to challenge the received ideas about how democratic societies should work for their citizens, in a context where ‘participation’ seems a much more muted approach than the necessary (but still not sufficient) struggle identified by Bourdieu.

In a similar connectivist vein, Downes argues for a view that stresses “...the purpose of a MOOC...” (Downes, 2013: 2). He wants to maintain the specificity of the MOOC concept: Massive (as in the potential to utilise the ‘massive’ resource of the internet to feed discussions); Open (as in non-monetisable) environment; Online (no necessary physical location) and with a definite Course (“progression through time”) (Downes, 2013: 3). Downes’ formulation therefore at least reasserts

the importance of an explicit recognition of both *telos* as purpose and time as boundary marker. A MOOCs primary function is “to teach” (Downes, 2013: 5) as a “...vehicle for discovery and experience...” (Downes, 2013: 9). However, there are risks that the individualist framework of connectivist practice plays into the hands of the existing dominant discourse. An individualist conception might make sense in terms of a discourse of individual freedom, but as we have seen these values also feature at the heart of Hayek’s utopian formulation – a key doctrine of the entire neoliberal project. We would be justified in suspecting the emergence of, rather than radical possibilities for change, a gradual absorption of the dominating *telos* of the dominant form of social relations underpinning neoliberal capitalism by connectivist – or cMOOC – practice along lines suggested by Yuan and Powell above. The ‘digital citizenry’ referred to by Siemens risks being identified with a limited conception of individual freedoms, rather than a collective struggle to challenge the power and purposes that underlie those very limitations, elided by a *doxa* that conceals the possibilities for their transformation.

Other perspectives emphasise a need to investigate “...more collaborative and participative approaches to learning.” (Eynon et al., 2014: 1). The authors here suggest that the ‘social context’ is an important object for inquiry. This begs the question of how we construct this social context as a research object in the first place, bearing in mind Bourdieu’s call for a reflexive approach that puts power relations at the centre of investigations. In focussing on pedagogical intentions the authors raise some interesting observations, particularly through interview data, but the approach risks minimising important theoretical perspectives on the very objective forces that create the conditions for a subjectivity that finds expression in populist imperatives such as “Vote me up if you like my ideas” (Eynon et al., 2014: 15) but which is not contextualised within an overarching challenge to the dominant *telos*.

An analysis of media representations of MOOC developments suggests the presence of a neo-Weberian ‘silicon cage’ of unquestioned *techné*, identifying concern among governments for “transforming” higher education based on a “...need for continuous learning in the modern workplace...” accompanied by a perceived need for universities to “adapt to this new reality” and to address “...reasonable employability in the contemporary market place” (Kovanović et al., 2015: 523). The authors also identify a move towards innovation in “credentialing” and “skill recognition” (Kovanović et al., 2015: 523). In line with the Gartner Hype Cycle’s “Trough of Disillusionment”, media interest in MOOCs has declined significantly, but tellingly it has also shifted focus: there has been an increasing trend in government-led and data-analytics focussed articles on MOOCs, replacing hyperbole about ‘disruptive change’ and venture capitalist rates of profit with discourse focussing on regulation, employability and the use of analytics (Kovanović et al., 2015). The authors conclude, somewhat hopefully perhaps, that these shifts in focus might lead to MOOCs playing a role in “...adoption and change of the broader educational practices” (Kovanović et al., 2015: 525), but

these patterns also raise the suspicion that the recent media focus on institutional and technological implementation – *techne* – is itself a form of *doxa*, a masking of the dominant *telos* of time domination and capital accumulation that was very apparent in the original hype around MOOCs, and will certainly not have disappeared in reality.

This optimism about ‘broader educational practices’ is questioned in recent research on instructional quality across 76 instructivist xMOOCs and constructivist cMOOCs. The research authors discover that “findings indicate that instructional design quality of MOOCs is essentially low” and perhaps predictably, given Biesta’s protestations about the central importance of *teaching*, that “...high quality, expert human feedback, is a non-trivial task” that is poorly served by a *techne*-focussed paradigm of interaction (Margaryan et al., 2015: 82). The authors also tellingly point out that a prime suspect for the possible cause of low pedagogic quality is that instructors are “...driven predominantly by their institutional marketing considerations...” (Margaryan et al., 2015: 82). Again this suggests more evidence for the existence of an unquestioned *telos* whose sequestration of time leaves no room for challenges to dominant classifications.

There are authors that believe that the *telos* driving these ‘marketing considerations’ should be critically investigated in more detail, especially the “...pedagogical implications of an online system that is predicated on commercial mechanisms.” (Van Dijck and Poell, 2015: 2687). Academic credit transfer, for example, affords the main MOOC providers tradeable exchange value and a global market that will let them “...control the gateways to online education in a global system...” (Van Dijck and Poell, 2015: 2687). The authors suggest that recourse should be made to European Union institutions leveraging the “...sovereignty of European governments...” to assert robust educational standards to challenge and resist the assertion of neoliberal authority over a globalised market, in particular in instructivist or xMOOCs; they suggest that “...xMOOCs are an ideological battleground where a revamped definition of what public education means in a networked world is waged and contested” (Van Dijck and Poell, 2015: 2688). In this context, Clow for example identifies high drop-out rates and “steeply unequal patterns of participation” in his analysis of the “funnel of participation” in MOOCs, drawing the conclusion that MOOCs cannot replace formal qualifications, and that universities should focus *long term* on what cannot be “cheaply duplicated” in MOOCs (Clow, 2013: 4). Such inequalities suggest a reframing of time and purpose in terms of what education is for, if not to question the reproduction of those very hierarchical structures; Van Dijck and Poell assert that this process of reclaiming time and purpose should begin at a governmental level, but of course this assertion assumes a certain independence of the modern state from the dominant *telos* of neoliberal capitalism.

Resistance to the dominant *telos* and the masking of representations of time might also be found within MOOCs themselves. One aspect of the ‘ideological battleground’ identified by Van Dijck and Poell is a struggle over the boundaries of

doxa. Knox, for example, notes that the various novel contractions, hybrids and modifications of MOOCs, such as SPOCs ('small', 'private') and COOCs ('community'), work to eliminate "massiveness" in "...an attempt to position education as a transcendent, sterilised activity disconnected from the contamination and disputes of the populace", that "masks" the richness and diversity of MOOC "populations" (Knox, 2014: 174). MOOCs reproduce educational orthodoxy, Knox suggests, by "...preserving individualism, reason and autonomy, and excising animality, irrationality, and the other..." (Knox, 2014: 174). In Bourdieu's terms this is an elision of social practice by *doxa* in which the realities of the struggle for domination over time and purpose are silently removed from the discursive field of play. What is therefore perhaps most challenging for those involved in producing MOOCs is that they also represent a possible opportunity to "work with the massive" (Knox, 2014: 174) as something wholly new and other, to repurpose education beyond orthodox / heterodox models, and resist the domination of time by hierarchical social structures.

5. Conclusion

This paper has briefly outlined a perspective on time in its social context that comprises two representations: one emerges within the linear, causal nature of political goals designed to meet the ends of dominant groups, and the other is inherent in any discussion of the means – in the form of various applications of labour and technologies – to achieve such goals. Collective representations of time are therefore suggested to be specifically implicated in the power to both decide political ends (*telos*) and to assign the means (*techne*) to achieve these ends, especially within the domain of social relations under neoliberal capitalism. It has been argued that much is to be gained from mapping the explanations of *telos* and *techne* (and therefore the social uses of time) that are derived from mainstream social theory, to discussions of recent developments in technology in education, on the basis that these wider theoretical perspectives deliver a much more effective interpretation of the socio-political nature and causes of such change, namely capital accumulation and hierarchical domination.

In particular, Bourdieu's concept of *doxa* proves a useful analytical tool in assessing the ongoing debate about learning, education and teaching in which a representation of linear time and the *telos* it serves are misrecognised as such and elided to a point beyond criticism. The political and economic ramifications of such an elision have been outlined in Chopra's work, which makes use of the concept of *doxa* explicitly to delineate the interactions of a neoliberal political economy and a higher education system reconceived as a means to deliver the goals of an entrenched, self-reproducing hierarchical elite. Both Bourdieu and Chopra, together with Harvey but unlike, for example, Streeck, are all reluctant to grant education systems the privilege of being able to successfully resist the prevailing *telos* and its domination of time by their own efforts. There remains the

question of the ‘necessary crisis’ that creates the conditions for, but does not guarantee, successful critique and resistance in the first place.

Although this paper restricts its critical focus to the investigation of MOOCs, it has been argued that these developments in the online domain are a symptom of tectonic forces of a far greater magnitude, affecting the wider social world as a whole. The paper has made use of the broader perspective of social theory to hint at the risks of limiting the object of research into MOOCs and other forms of online education to instrumentalist interventions. Instead, it has been suggested that research should address not only the critical pedagogical arguments advocated by those such as Biesta, Knox and others, but also the wider interrelated ramifications of power and domination for knowledge production and social change more generally.

By not addressing this wider context, research risks, unwittingly or otherwise, lending its energies and commitments to sustaining an unreflective emphasis on the *techne* of institutional bureaucracy, policy and technology. This will be at the expense of opportunities to seriously contemplate, and even contest, a *telos* that, in its misrecognised domination of time, may run completely counter to the ends that educators might collectively be trying to achieve – which in part is surely to continue to contest and redefine the meaning of Aristotle’s concept of the ‘good of the whole community’.

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ENABLING BOTTOM-UP PRACTICES IN URBAN AND ARCHITECTURAL DESIGN STUDIOS

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ABSTRACT. This paper discusses the emergent practices in the fields of architecture and urban design and reveals their relevance for the future of design learning. As a starting point it distills three forms of bottom-up practices where: ordinary people reclaim and make urban spaces through self-organized acts (Occupy Urbanism); short-term, affordable and scalable interventions aiming at enabling ordinary people to take part in the shaping of their environment (Tactical Urbanism); and initiatives combining the former two by establishing a hybrid coalition network (Hybrid Urbanism). This discussion reveals that a key characteristic of these practices is the employment of design tactics grounded in time. Among these tactics are temporality, openness, ad-hocism, looseness, biophilia and bottom-up aesthetics. Reflecting on these tactics, it elaborates on how design studio education can be rethought to facilitate socially engaged forms of learning which are capable of challenging the status quo of individualistic design. It suggests Participatory Action Research (PAR) as a potential systematic framework for enabling bottom-up social knowledge building through design actions and reflections between the students, potential users and the socio-spatial context. Furthermore, it makes a brief reflection on how employing PAR in the design studio can help studio teachers to reposition design learning as a social and political practice. Building on this basis it proposes alternative ways for enabling bottom-up practices in the design studio; including a series of socially engaged tactical micro-tasks, thematic design studio assignments and design learning-in-action.

Keywords: design studio; architecture and urban design; bottom-up; occupy urbanism; tactical urbanism; temporality; openness; ad-hocism; looseness; bottom-up aesthetics; participatory action research.

1. Introduction

The last four decades have witnessed a worldwide adoption of neoliberal policies which prescribe *laissez-faire* economics, deregulation, privatization and liberalization (Kaminer et al., 2011). Born in the crisis of the mid-1970s,

neoliberalization is best understood as a set of complex processes which represent market-driven social, spatial and economic transformations distributed unevenly across places, territories and scales (Brenner et al., 2010). Among those, the most notable ones are the prioritization of market-based responses to regulatory problems, intensification of commodification in all realms of social life and the mobilization of speculative financial instruments to create new opportunities for capitalist profitmaking (Harvey, 2005: 163). These processes had major redistributive consequences to our lives, the cities we dwell in and the ways we make them.

First, around the world, neoliberal policies have transformed the socio-political and spatial context in which urban projects play a significant role. The disciplines of *urban design and planning* have come under fire because – in their traditional form – they posed significant obstacles to deregulation and privatization. In many cities around the globe – from Istanbul to Brussels, Beijing to New York – these practices have been restructured to serve to the purposes of economic growth (Gleeson and Low, 2000: 135), competitiveness, entrepreneurship and market-sensitive creativity (Swyngedouw, 2013), and steered towards aggressive city-marketing (Vermeulen, 2009).

Second, urban spaces in our cities were mobilized as a leverage for market-oriented economic growth and opened up to the consumption of the elite (Sager, 2011: 149). Common resources – and specifically the public spaces in our cities – started to be increasingly exploited by market forces (Helfrich, 2011). As a result, architecture and urban design practices transformed into production modes through which global capitalism and political regimes exercise and express their power (Newton and Pak, 2015: 101). These promoted urban design and development practices which are disconnected from the needs of the people (Harvey, 2013) (Boyer, 2011: 5).

Following these developments, the financial crisis of the 2007–2008 and the austerity measures adopted by the governments have moved alternative approaches for making urban spaces to the center stage. Since then, there has been a resurgence in the number of do-it-yourself (DIY) cooperatives initiated by citizens, activists, artists and designers. Ordinary people all around the world have started to claim a shaping power over the processes of urbanization; over the ways in which our cities are made and remade (Harvey, 2013: 5). In literature, these have been given a variety of names such as: “DIY urbanism”, “make-shift urbanism”, “austerity urbanism” (Tonkiss, 2013).

The international Occupy movements against social and economic inequality produced several relevant examples. In most cases, the citizens went beyond protesting and attempted to establish different forms of temporary commons. For instance the occupation of the Taksim Square and the Gezi Park in Istanbul in 2013 or the Movimiento 15M in Madrid and Barcelona from 2011 to 2015 were clear bottom-up initiatives for appropriating, reclaiming and redefining public spaces as a reaction to neoliberal planning policies. These developments suggest a “social

turn”; a major shift in the ways we make and remake our cities (Newton and Pak, 2015: 105).

In contrast with traditional urban production modes, a key characteristic of these practices is the employment of design tactics grounded in time. Among those are *temporality*, *openness*, *ad-hocism*, *looseness*, *biophilia* and *novel approaches to aesthetics* which enable the continuous representation of the user needs (Pak and Scheerlinck, 2015).

2. Rethinking Architecture and Urban Design Learning Today

While urban practices undergo significant transformations all around the globe, there is an increasing interest in architecture and urban design schools to incorporate bottom-up pedagogical frameworks into *design studios* (Salama, 2015). This proves to be a challenging task.

The design studio is the central learning medium for architecture and urban design education (Schön, 1987). However, the traditional studio in its basic form does not necessarily consider the potential users as a part of the design process (Webster, 2006). It is predominantly teacher and student-centred (Newton and Pak, 2015).

In a traditional design studio setting learning process takes place with help of the periodical critiques of an experienced designer, the studio coordinator. The students are evaluated by a small group of practicing reviewers also known as “the jury members”. In this sense, it is a place for “reflection-in-action” through which students learn experientially by designing their own projects (Schön, 1987: 28). Yet, this reflectivity is mostly limited to the individual interactions (Newton and Pak, 2015).

In this context the design studio setup needs to be connected with the emergent practices which clearly illustrate a shift from *strategic* thinking to *tactical* thinking; establishing a different understanding of power and time. In this new paradigm, *strategic* design is framed as centralized, top-down, slow, expensive and complex urban governance practices disconnected from the people (Lydon and Garcia, 2015) whereas *tactical* design is preferred as a novel empowering mechanism: bottom-up, agile and decentralized means for ordinary people to challenge the status quo (de Certeau, 1985: 93).

Considering this paradigm shift, the design studio should be rethought to facilitate bottom-up social knowledge building through tactical design actions and reflections between the students, potential users and the socio-spatial context. In order to reach this goal, there is a need for a novel pedagogical framework for structuring the complex interactions of the students with the society while keeping the focus on the design task(s).

As a systematic method drawing on more than half a century of social research, Participatory Action Research (PAR) stands as a source of inspiration for social practices (Kemmis, 2006). This method involves a series of self-reflective cycles

with the clearly defined steps which can help to organize the learning in-action in a structured manner. However, appropriating PAR in the studio requires reframing design as a form of socially engaged research action. In addition, the affordances of PAR to augment learning in the studio needs to be scrutinized.

This paper addresses the following questions on design education:

- What can we learn from the emergent bottom-up architecture and urban design practices?
- How can these be integrated into the architecture and urban design studios?
- How can Participatory Action Research facilitate the above?

The study starts with the extraction of the basic bottom-up principles from several examples around the world. As a result, by distilling the knowledge created, and reflecting on the lessons learned, it introduces a solid proposition for a future design studio curriculum to augment bottom-up design and learning practices. Building on this basis it proposes alternative ways for enabling bottom-up practices in the design studio; including a series of socially engaged tactical micro-tasks, thematic design studio assignments and design learning-in-action. Furthermore it reflects on how employing PAR in the design studio can help studio teachers to reposition design learning as a social and political practice.

3. Learning from the Emergent Bottom-up Urban Practices

The global financial crisis of 2007–2008 and its consequences triggered large scale demonstrations against rising social and economic inequality. Starting with the occupation of the Zuccotti Park in New York in September 2011, the protests gained popularity around the world and widespread attention from the media. These massive collective actions went beyond the conventional limits of temporary public demonstrations. Occupation inevitably required spatial use and provided opportunities for the exploration of alternative modes of living. As a reaction to neoliberal planning policies, the protestors reclaimed and redefined urban spaces in humbling but creative ways. It is clear that all of these were made without the help of a master plan, a master designer or a centralized board of authorities.

In this context, the Occupy Movements around the world evoked the “forgotten” idea that political action lies at the heart of the invention of space and the making of this space is a work of imagination (Dikec, 2015). These pluralized the public sphere, created event-spaces which provided opportunities for direct participation and in this way placed public spaces back on to the agenda as a platform for social and political representation (Kioupkiolis and Katsambekis, 2014: 13).

Since then, inspired by these movements, novel urban practices have emerged all around the world (Ferguson, 2014). Frequently initiated by grassroots collective action groups and/or urban design offices, these aim to integrate the emerging needs of the people from the ground-up, in a responsive and informal manner. In

different ways, these practices bring governmental actors and local civic networks together to empower ordinary citizens through the design and implementation of catalytic urban interventions. They point out to tactics that range across different directions, *from temporary to permanent; public to private; authored to anonymous; collective to individual; legal to illegal; unmediated to mediated* (Iveson, 2013). In this sense, the recognition of the diversity of approaches is essential for developing a better understanding of these emergent practices.

This paper discusses the abovementioned approaches by means of three distinctive themes. I will use *Occupy Urbanism* to describe DIY practices where ordinary people reclaim and make urban spaces without the lead of an urban design or planning authority through various acts of *commoning*: the collective ownership and management of resources. This process is dominantly self-organized. The socio-spatial-political interventions during the Gezi Park occupation are an example of this sort of emergent practices.

The second practice, *Tactical Urbanism* involves short-term, affordable and scalable interventions aiming at enabling ordinary people to take part in the shaping of their environment (Lydon and Garcia, 2015). This empowerment takes place in two ways: during the design process and, most importantly, through the design product itself. A clear indicator that differentiates this Tactical Urbanism from Occupy Urbanism is that it is executed according to a short-term plan and/or a project. I will use the R-urban temporary project in Colombes, France to illustrate and discuss this mode of operation.

The last mode I will discuss is *Hybrid Urbanism*. It is a blurry mixture of the two practices introduced above, combining commoning practices and planning by establishing a hybrid coalition network composed of a complex combination of actors. I will elaborate on Commons Josaphat in Brussels as an example of this sort of making spaces.

In the following parts of this paper, I will make a review of these three cases-without flattening out the differences and I will elaborate on the implicit design tactics behind them by making a critical analysis.

Learning from Occupy Urbanism

In recent decades, neoliberal policies around the world aimed (and partially succeeded) to privatize “the common” by turning information, ideas and even plants and animals into private property (Hardt and Negri, 2011). Rooted in the protests against globalization, such as in Seattle in 1999 and Genoa in 2001, fueled by the Great Recession of the 2007–2008 and inspired by Tahrir Square protests, Occupy movements around the world developed novel ways to challenge these policies.

An evident case was the Occupy Gezi Movement in Istanbul (Turkey) in 2013 which emerged bottom-up as an event-space for protest, enabling the representation of a multitude of approaches (Figure 1). The park and the square are

located at the heart of Istanbul and both were arenas for political manifestations throughout the history of the Republic.



Figure 1 Occupy Gezi Movement in Istanbul in June 2013. A map of the variety of political parties involved produced by “Postvirtual” (on the left) Creative Commons BY-NC-SA license and Screenshot from a drone video by Jenk K (2015) (video shot 05 June 2013) (on the right).

In a nutshell, Occupy Gezi was 1) a large-scale gathering of people from different backgrounds 2) at a strategic location with a politically loaded history 3) with activist motivations to stand against neoliberal urban policies 4) employing horizontal decision-making mechanisms and 5) creative spatial practices. These characteristics and modes of operation were significant because – arguably for the first time in the history of the republic – the diversity of the protesters did not create conflict and fragmentation. From this perspective, Gezi Park accommodated preliminary forms of a “*multitude*”; a concept coined by Hardt and Negri (2005: xiii) to describe: “a living alternative... that provides the possibility that, while remaining different, we discover the commonality that enables us to communicate and act together... composed of innumerable internal differences that can never be reduced to a unity or a single identity-different cultures, races, ethnicities, genders, and sexual orientations; different forms of labor; different ways of living; different views of the world; and different desires.”

In order to accomplish this, the protestors challenged the framework of existing socio-spatial relations and established new ones. A way of doing this was to reclaim the public space through the creation of novel and temporary urban *commons*. For almost two weeks Gezi Park and the Taksim Square was turned into a temporary autonomous zone (TAZ) (a socio-spatial and political intervention method which involves creating temporary spaces to challenge the power structures (Hakim Bey, 1991).

During the occupation timeframe, the occupiers self-organized the park and the square through horizontal mechanisms and extensively re-appropriated them as “*urban commons*” to serve to and sustain niches of a *living alternative*, the *multitude*. Besides pitching tents all over the park, the occupiers built (Hattam, 2015):

- a public library out of paving stones and bricks (without mortar)
- stalls for the distribution of donated food and water
- a paving-stone sharing wall with remedies
- a wishing tree out of the left over construction materials
- free cellphone charging stations; art and photo galleries
- collective vegetable gardens
- an infirmary and a veterinary clinic
- a children's art workshop, memorials and murals,
- an open-air hotel
- a livestream TV-media center.

These were managed in a collective manner, aiming at equitable access and use, which are the necessary conditions for the emergence of *commons* (Bollier, 2007).

Furthermore, Occupy Gezi performed a series of temporary events which are most similar to a festival – or even a carnival. Forums, concerts (rock, folk and various popular artists), improvisational piano recitals, movie shows, theater, ballet and modern dance performances accommodated a diversity of art forms, and enabled informal social encounters. Among those, forums were one of the most successful attempts of making social and political spaces which established new cultures of openness and tolerance. They quickly spread all over the city and served as event-spaces of negotiation across diverse communities. These were not only essential to the creation of temporary *multitudes* but also made long-term impact on the society.

Learning from Tactical Urbanism

As introduced above, after the Great Recession of 2007–2008, a new kind of participatory culture has gained popularity and triggered a paradigm shift (Krivý and Kaminer, 2013). This “participatory turn” inspired the urbanists, architects, designers and activists who have long been experimenting with the idea of creating temporary and low-cost urban spaces; a practice known as “Tactical Urbanism” (Lydon and Garcia, 2015).

Instead of employing *strategies* – the formal power tool – of the governmental planning organizations, this kind of urbanism focuses on creative *tactics* as a counter approach. The main aim of these tactics is to develop and demonstrate alternatives to the existing centralized, top-down, slow, expensive and complex urban governance practices disconnected from the people. For this reason, Tactical Urbanism extensively relies on decentralized practices, combines top-down and bottom-up processes, uses temporary and networked modes of operation, and produces low-cost and low-tech products.

Lydon and Garcia (2015) stress that do-it-yourself and make-shift urban interventions cannot be categorically considered as “tactical” because they don't necessarily follow these principles. At this point the difference between Occupy Urbanism and Tactical Urbanism becomes evident. The latter is rather

emancipatory than *bottom-up*: it recognizes the power imbalance and aims to empower citizens through the use of specific tactics in urban design practices.

Urban projects such as R-urban (Figure 2) by Atelier d'Architecture Autogérée (aaa – an urban design office based in Paris) are deeply rooted in Tactical Urbanism. Initiated in 2008, the R-Urban project aimed to develop and implement an alternative and ecological approach to urbanism on the outskirts of large city.



Figure 2. Agrocite, a part of the R-urban Project at Rue Jules Michelet, Colombes, France by Atelier d'Architecture Autogérée Architectural/Urban Design Office. Photo taken April 27, 2013 (Creative Commons Non-commercial use License)

R-urban was designed specifically to be built on a piece of land temporarily loaned for three years by the Municipality of Colombes and involved three groups of interventions that were meant to work together (R-urban, 2015):

- community gardens, an 'AgroLab' focusing on organic agricultural production and relevant activity areas;
- a gallery of building materials, recycling workshops and various materials for local production of materials needed for operation of the project;
- a cooperative housing complex combining social housing, residences for students and researchers.

The project was designed to be sustained through *autogestion* (Petcou and Petrescu, 2014). This term – as used by aaa in the original French text – has specific historical connotations in French culture such as the practices during the short-lived Paris Commune government in 1871. In this specific political sense it is a type of collective self-management that allows a re-appropriation of a form of collective organization.

The critical tactics in the R-urban case to enable *autogestion* were to empower people by establishing *commons* in the form of community gardens and providing the ecological and productive infrastructure necessary for the development socio-economical capital for the initiated projects to thrive autonomously. Unfortunately

at the time of writing this article, the project was planned to be replaced by a parking lot by the municipality. On the official Facebook page of R-urban, the local communities expressed their desire to keep the intervention or move it to a different location.

Learning from Hybrid Urbanism Practices: Tactical Occupation

Some of the emergent urban practices are significant in the way they employ divergent tactics that range across different vectors during their lifetime. Incorporating elements of Occupy Urbanism and Tactical Urbanism, they provide interesting cases to learn from.

A clear example is “Commons Josaphat” based in Brussels, Belgium. Brussels-Capital Region Government is the official owner of a large area of twenty four hectares in the Josaphat terrain in Schaerbeek, Brussels. Therefore the site can be considered as public property. For many years the terrain has been waiting for a new use. A master plan has been prepared for this site without the participation of the citizens. This plan foresees a complex mixed use program including public and private housing, public facilities, offices, a green space, a hotel, shops and upgrading and densification of the industrial zone.

As a reaction to this project, in 2012 a group of academics, urbanists, activists and locals came together to think about the potential of commons for this area and founded Commons Josaphat. The main aim of the group is to create an alternative for this wasteland, inspired by practices of the commons and motivated by contemporary ecological issues (Commons Josaphat, 2015). They intend to propose to the government a concrete way to build the common good, to give decision-making power to the assembly composed of all people who have a stake in the future of this neighborhood.

These include local citizens, those who will live there, those who wander on it, those who work there, who look at the construction of the balcony of their window (Commons Josaphat, 2015). It is clear that a repeating theme in the statements above is the use of *commoning* as an alternative practice. At the moment, Commons Josaphat is in the process of writing a collective text defining the future of the site as *commons*. During the writing phase, they are organizing different thematic workshops that are open to everyone. These ideas resonate with Tactical Urbanism and suggest the emergence of a rather participatory version of the R-urban Project. However, what makes Commons Josaphat interesting is that their activities are not limited to planning. As of August 2015, parts of the site have been occupied by the group to form:

- an urban collective garden;
- storage of relevant resources, water tanks, compost etc.;
- a barbecue and a dining table made out of palettes and pieces of wood;
- foundations of a future shed to be constructed using surplus pallets found on the site.

All of the interventions above are intentionally made to “float” on the ground both as a gesture to avoid permanence and to avoid possible legal conflicts (Figure 3). The recent talks with the government led to the idea of granting a temporary use license to Commons Josaphat.



Figure 3 The occupation of Josaphat Site in Brussels by Commons Josaphat Photo taken August, 10, 2015 by Burak Pak.

The hybrid mode of operation of Commons Josaphat covers various novel tactics. Firstly, while the site is being reframed and designed as *commons*, the citizens learn from the active occupation going on in the field. This leads to an incredibly dynamic and agile process where the design is informed by incremental occupations.

Secondly, although three years have passed since its formation, the group has not produced a formal visual plan yet. This allows the process to be open. A counter-project is being prepared slowly in the form of an “open-source text” shared on the web which contains interesting suggestions and ideas- incorporating the feedback from the relevant parties.

4. A Novel Approach to the Urban and Architectural Design Learning in the Studio

Urban and architectural design education is well-known for its highly reflective practices which evolved significantly since the nineteenth century *ateliers* of the *École des Beaux-Arts*. Today design studio is perceived as central to design learning as a platform to enable the students to learn-by-designing. Since design knowledge is not easy to externalize, the studio coordinators and external jury members convey this implicit knowledge through reflective reviews by triggering “knowing-in-action” (Schön, 1987). Through the reflective processes of field observation, analysis, planning and feedback, the students develop design alternatives and interpret and explore the possible impacts of these relying on drawings, visualizations, simulations and social/self-reflections.

The students are expected to consider their design alternatives together with the existing social, spatial and political urban context and build relationships between these while redefining them. Unfortunately, these processes rarely include learning

from the locals and potential users; especially in the later stages of the design process. Furthermore, one-off jury reviews are organized in a limited amount of time which diverts the focus towards the design product rather than the learning process (Koch et al., 2002). Very little time is left to the students to receive feedback and they are not motivated enough to be active participants in this process (Webster, 2007).

Learning from the emergent bottom-up practices, I would like to introduce alternative ways to challenge the issues referenced above. This process will take place in two interactive tracks:

- learning from the design approaches behind the bottom-up projects;
- learning from the emergent making processes and the changing role of the architects, urban planners and designers.

In the following Section I will elaborate on how they can be integrated into existing studio curriculum in a systematical manner leading to a novel approach to the urban and architectural design learning in the studio.

Enabling Bottom-up Practices in Design Learning

The analysis of the three modes of emergent bottom-up practices of urbanism revealed various tactics which can be appropriated for design as well as design learning. These can be grouped under the themes of *temporality*, *ad-hocism*, *open-endedness*, *looseness* and *novel approaches to aesthetics*.

To start with, the most prominent strategy was **temporality**, the enabling ways in which the spatial production related to time. All of the novel modes of urbanism introduced in Section 2 involved making *ephemeral* spaces which are implemented only for a relatively short amount of time. This quality facilitated the establishment of a less dominant power relation between the intervention and the users without weakening the impact of the reviewed practices. In fact, all of the reviewed cases were aimed at triggering long-term transformations at social, spatial and political levels and partially succeeded in their attempts.

In addition, the temporality of the novel forms of urbanism enabled making small *incremental* changes through **ad-hoc** processes. This strategy was characterized by the avoidance of pre-planning and tendency to respond only to the urgent as opposed to the important (Pak and Scheerlinck, 2015). Instead of establishing long-term and predictable planning procedures, ad-hocism brought *improvisation* and *spontaneity* into spatial production.

Moreover, compared with conventional practices, the time intervals of the cycles of planning, appropriation and re-planning were relatively short. The *agility* of the process enabled learning from temporary users and rapid integration of this knowledge back to the temporary spaces creating a dynamic mode of operation.

In this context, temporary spaces performed as **open-ended** systems which enabled user organization, feedback and intervention in a self-regulatory, indeterminate manner and without a limited end-state until they are disturbed by the authorities. This incompleteness and refusal of a single static desired final state

created **new forms of openness** – as described by Peters and Jandrić (2015: 196) – shared practices which *reconstitute* the social through collective intelligence.

Another generative quality of the spaces created through emergent bottom-up urbanism practices was **looseness**. Loose spaces are characterized by the triad of *diversity, possibility and disorder* (Franck and Stevens, 2013). These three elements were prominent in all cases reviewed in the previous section. These were appropriated to challenge the certainty, homogeneity and order in the dominant status quo. They proved that ordinary citizens are capable of making and appropriating spaces for their own uses, in their own divergent, creative and chaotic ways if they were given opportunities to do so.

In addition to the novel perspectives above, bottom-up practices brought a **novel approach to spatial aesthetics**. The extensive use of recycled materials (most commonly wood and shipping pallets), re-appropriation of ordinary found-objects and the ways in which they are combined with the natural elements to create furniture, decks, walls and load-bearing structures illustrate alternatives to top-down aesthetics.

In this sense, bottom-up aesthetics is no more a field of expertise at the center controlled by elite designers; rather an improvised byproduct of an ad-hoc process which emerge spontaneously. This mode of creativity has close links with junk-art or trash-art: critical artistic practices which heavily reuse abandoned materials, furniture and debris to produce art that reflects “the consumerism and our obsession with power” (de Pajaro, 2015).

It is possible to integrate the tactics and approaches introduced above into design learning in several different ways:

Tactical Micro-Tasks: This method involves designing cycles of small weekly tactical tasks for the students to promote bottom-up learning. For instance through making ad-hoc artistic installations or making temporary occupations with the local users (Figure 4) it is possible to learn about the needs and dreams of the ordinary people and gain a better understanding of critical problems surrounding a specific urban context.

Thematic Design Studio assignments: The design studios are frequently organized along *themes* and *places*. In this context, these can be carefully re-framed to facilitate integrative bottom-up processes. For instance, a studio with the theme of “Making Collective Spaces for Super-diversity” (Pak, 2015) in a socially, spatially and politically super-diverse urban neighborhood with limited resources may help to motivate the students to explore novel bottom-up tactics and approaches.

Learning-in-action: This method suggests the founding of real-world action research laboratories for learning. In a nutshell, these are learning environments (living labs) that facilitate continuous interactions with the local communities, non-governmental and activist organizations. The main aim of this practice is to engage students in the bottom-up making and remaking of urban spaces as active agents and develop the skills for learning-in-action.



Figure 4 A Tactical Micro-Task organized in the framework of an the Urban Design Studio in KU Leuven Faculty of Architecture. Workshop tutor: Koen de Wandelaar; Studio Coordinators: Livia de Bethune, Chotima Ag-Ukrikul, Roeland Dudal, Burak Pak.

Reframing Urban-Architectural Design Learning as Participatory Action Research

Due to the complexity and divergent nature of the design practices, it is not an easy task to engage local communities into design learning, specifically in the design studio. In the last and the conclusive section of this paper, learning from the emergent making processes and the changing role of architects, urban planners and designers I would like to suggest rethinking design learning in the studio as a Participatory Action Research practice.

With a long history in emancipatory social practices, Participatory Action Research is distinguished by three characteristics: shared ownership of research projects, community-based analysis of social problems, and community action (Kemmis, 2006). In research contexts in which the action involve community engagement it can be considered well-suited as a research method for enabling bottom-up practices.

In brief the process of Participatory Action Research involve a series of self-reflective cycles with the essential steps of: 1) planning, 2) acting and observing the process and consequences of the change, 3) reflecting on these processes and consequences, 4) re-planning and 5) acting and observing again. These steps can help to implement integrative suggestions in the former section in a structured manner using this framework.

In line with the emergent urbanism practices, participatory action research method enables breaking the learning tasks into small increments (Figure 4) with minimal planning and does not necessarily involve long-term planning. Cyclic iterations of research can be configured as short or long time frames that last from one to several weeks depending on the context (Muir, 2007).

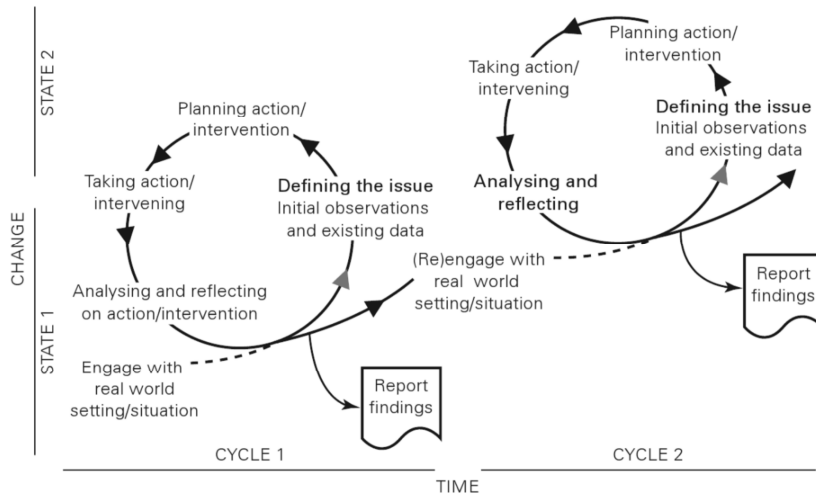


Figure 5 Reframing Action Research as Urban-Architectural Design Learning: “planning” used in this figure originally refers to action planning. However in context of design learning can be understood as the action of urban planning/design as well as the planning of the research itself. Figure: (Muir, 2007).

Employing Participatory Action Research (PAR) in the design studio helps us reposition design learning as a social and political practice in various ways. First, it provides a structured framework for addressing **temporality**. Second, it helps promoting engagement with the real-world issues and users, identifying issues and diagnosing problems as a clear starting point. Third, as the following steps, it motivates self-planning and re-alignment of the research processes in parallel to the emergent practices reviewed in Section 2.

The innovation that emerges out of the reframing of PAR to design learning is that, it creates an expectation from the student to take action and intervene. In the design studio context, the nature of this action is scalable. It can change depending on the progress of the research study. For instance, in the first week the action of the student can be to make interviews with the locals and make personal observations whereas in the later stages it can involve creating experimental urban spaces with the potential users in real-world (Figure 4).

As a conclusive step, reporting findings in this framework refers to making a reflection on action and interventions together with the peers and studio coordinators. This step enables the coordinators and fellow students to give feedback on the former action as well as on the planning of the next action.

5. Conclusions and Future Directions

As a result of decades of neoliberalisation, architecture and urban design became increasingly isolated from society – and most importantly – the users. However, this problematic trend has started to change since the Great Recession of 2007–

2008. The creative practices of the Occupy Movements around the globe and scarcity caused by the austerity measure brought novel bottom-up approaches for making spaces to the center stage. Today, it is possible to claim a shift towards a “social turn” which is rapidly changing architecture and urban design thinking towards more participatory and activist trajectories.

In parallel to these approaches there is an increased interest in architecture and urban design schools to incorporate bottom-up pedagogical frameworks into design studios. The rapid evolution of the emergent urban practices produces inspiring tactics for social engagement and bottom-up empowerment which the design schools can learn from and experiment with. However these are challenging tasks.

The traditional pedagogical setup of the design studio mostly focuses on the individualistic learning processes. It is predominantly oriented towards top-down practices and consequently fails to motivate the student to learn from the users and make social interactions in a systematic manner. Reflecting on these challenges, it is necessary to rethink the design studio setup to learn from emergent practices and facilitate bottom-up social knowledge building through tactical design actions and reflections between the students, potential users and the socio-spatial context.

In order to accomplish this goal this study made an in-depth review of the emergent practices. Learning from the design approaches behind the bottom-up projects, the novel spatial production processes and the changing role of the designers it distilled three forms of bottom-up design: Occupy Urbanism, Tactical Urbanism and Hybrid Urbanism. The analysis of these three modes of emergent bottom-up practices of urbanism revealed various tactics which can be appropriated for design as well as design learning. These are discussed under the themes of temporality, ad-hocism, open-endedness, looseness and novel approaches to aesthetics. In a nutshell, the review concluded that:

- Temporality* can potentially facilitate the establishment of a less dominant power relation between the intervention and the users. It is a way to enable making small *incremental* changes.

- In contrast with long-term and predictable planning, ad-hocism brought *improvisation* and *spontaneity* into spatial production.

- The *agility* of the process enables learning from temporary users and rapid integration of this knowledge back to the temporary spaces creating a dynamic mode of operation.

- Temporary spaces performed as *open-ended* systems which enabled user organization, feedback and intervention in a self-regulatory, indeterminate manner and without a limited end-state until they are disturbed by the authorities.

- Characterized by diversity, possibility and disorder, *looseness* served as means to challenge the certainty, homogeneity and order in the dominant status quo.

- Bottom-up practices introduced a novel approach to spatial aesthetics; *bottom-up aesthetics* as an improvised byproduct of an ad-hoc process which emerge spontaneously.

These can be inspirational and interesting for future design studios in various ways. First, as *tactics* to facilitate bottom-up social engagement; second, as *design approaches* to empower the users through the product; and third as elements of thematic studios. Building on these conclusions and the discussion above this paper suggested three alternative ways to integrate these tactics and approaches:

- Tactical Micro-Tasks, designing cycles of small weekly tactical tasks for the students to promote bottom-up learning.

- Thematic Design Studio assignments, a careful combination of *themes* and *places* to facilitate integrative bottom-up processes.

- Learning-in-action, the founding of learning environments (living labs) that facilitate continuous interactions with the local communities, non-governmental and activist organizations.

It is clear that these suggestions are not sufficient on their own to answer the challenges in the traditional design studio. Engaging students in the bottom-up making and remaking of urban spaces as active agents and developing the skills for learning-in-action requires a novel reflexive setup. There is a need for a holistic framework for the systematic integration of these into design learning processes.

For this purpose, the final part of this paper elaborated on the potentials of rethinking design learning in the studio as a Participatory Action Research practice. The cyclic iterations PAR were reframed as were short and long time frames of design actions that last from one to several weeks depending on the context. The self-reflective PAR cycles with clearly defined steps served to organize learning in-action in a structured manner. This enabled the breaking of the learning tasks into small increments of socially engaged actions and provided a structured framework for addressing **temporality** in a novel manner. The main contribution of reframing of PAR to design learning was to demonstrate its potentials for motivating the student to socially engage with real-world problems and reframe the relations between users and design students.

In the near future the suggestions above will be tested in a design studio setting to research their affordances to accommodate learning. The author of this paper has designed a novel theme for a design-based Master's Dissertation in KU Leuven Faculty of Architecture to appropriate and evaluate the tactics and PAR method with six architect-students. This study will be valuable to deliver empirical results to test their potentials to enable bottom-up practices in urban and architectural design studios as well as their applicability in a real-world setting.

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UNLOCKING THE POTENTIALITY AND ACTUALITY OF ICTs IN DEVELOPING SUSTAINABILITY-JUSTICE CURRICULA AND SOCIETY

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ABSTRACT. While social justice is a frequently employed concept in the deconstruction and reconstruction of instructional practice in schools, sustainability-justice that, in addition to social justice, integrates environmental, economic and cultural justice, has not been so well discussed. This article explores a critical perspective of curriculum and ICTs potentiality and actuality in transforming education towards a sustainable-just society. The DeCoRe plus methodological approach has been developed and used in pre-service teacher education courses, with the aim to embed sustainability justice in school curricula. This process is highly enhanced through two major complementary trends, namely, Open Education Resources (OER) and OpenCourseWare (OCW), that are shifting the old ways of knowing, being, living together, doing and sharing, as well as the spatial and temporal boundaries.

Keywords: ICTs; curriculum; sustainability justice; DeCoRe plus methodology

1. The Sustainability Crisis and the Issue of Justice

The world today is facing various problems which threaten its very existence in the not so distant future (UNICEF, 2015; FAO, 2014). The unsustainable economic path experienced throughout the 20th century has created tremendous social, economic and cultural disparities worldwide. Humanity is living a crisis of sustainability that includes not only environmental issues such as ozone depletion, biodiversity loss, but also economic and social issues, such as poverty, social inequalities, violation of human rights, unequal trade, gender inequalities, and recent migration on an unprecedented scale. Social, economic, environmental and cultural injustices prevail in human society and this constrains us to seek an alternative human development path that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: 43). More specifically, the asymmetries created by economic globalization in

the last three decades, have not only widened the disparities between the developed and developing countries, the wealthy and poor people, but also within countries across the world (Peters, 2014). It seems that the gap between the rich and the poor, between the affluent and non-affluent countries, between the current and new generations, seems to be further widening. Despite the late interest in “green economics”, in reality current global policies still prioritise capital accumulation, at the expense of the ecological recovery, social equity and people’s well-being.

Along with the worldwide and outspoken quest for sustainability, there is much hypocrisy in the way past and current world leaders approach sustainability issues and problems. From one side, global leaders persist on neo-liberal economic growth models, with consumerism being addressed as a key factor to economic prosperity, and on the other side, they proclaim the urgency for tackling sustainability problems, such as climate change, where consumption behaviors and production practices are its key contributors. At the same time, advances in sciences and technology are seen predominantly from a pessimistic rather than an optimistic perspective. An international study (Makrakis, 2012a) found a strong and pessimistic connection between environmental consciousness and attitudes towards the role and impact of science and technology on society.

The sustainability crisis is a crisis of values that education at all levels has reproduced, maintained and perpetuated. Thus, it, seems that educational systems and learning experiences did not provide us with the knowledge, skills and tools to understand what is happening in the world, and how to transform oneself and society towards more sustainable, just futures (Makrakis & Kostoulas-Makrakis, 2013ab; Sterling, 2004; Huckle & Sterling, 1999). Huckle (2012) suggests that teachers should be introduced to critical social theory that seeks to explain the role of Web 2 technologies in the recent wave of capitalist development that precipitated economic and ecological crisis and their potential to bring about more sustainable alternatives. He argues that such alternatives will be based on more radical and deliberative forms of democracy and citizenship enabled by the new technologies.

This paper claims that the issue of justice is critically important in dealing with the sustainability crisis. Thus, it is reasonable to introduce the concept of “Education for Sustainability Justice” (ESJ), as an alternative to “Education for Sustainable Development” (ESD) or, at least, to use both concepts interchangeably. Such an alternative is seeking to place much emphasis on the ethics and praxis of education for sustainability.

The concept of “sustainability justice”, conceptualised in this paper, reflects the four pillars of sustainable development: environment, society, economy and culture. The environmental justice component refers to the right of all people in the planet to enjoy an equitable, clean, safe, fairly treated and healthy environment as well as the right to social, economic and cultural wellbeing. It also addresses the ecological unity and the interdependence of all species (Bonorris, 2010). The social justice component addresses inequalities and injustices of all kinds, poverty,

racism, violation of human rights. Social justice is simultaneously a goal, a process, and a stance (Grant & Agosto, 2008). As a goal, social justice denotes equality of opportunities and outcomes for all people. As a process, social justice addresses the confronting and dismantling of oppressive structures and systems, as well as all other sorts of social inequalities (ibid.). The economic justice component addresses the issues of unfair trade, economic exploitation, the unequal distribution of wealth, racism and poverty. In an integrative way, the cultural justice component encompasses all the other three components of sustainability justice in the same way as it does to the three sustainable development pillars.

Sustainability justice is perceived as a process, and not an outcome, which: 1) seeks fair (re)distribution of resources, opportunities, and responsibilities; 2) challenges the roots of oppression and injustice; 3) empowers all people to raise their voice, needs and rights; and 4) constructs knowledge, empathy, compassion, social solidarity and action competences. The concept of sustainability justice expresses an ideal which should be infused in teaching, learning and curriculum processes and practices.

Unlocking the potentiality and actuality of ICT for sustainability justice, is not only a matter of technology, but concerns the ways we perceive technology, teaching, learning and curriculum. Teachers' roles as "transformative intellectuals" (Giroux & McLaren, 1996; Giroux, 1988) driven by the principles of new pedagogy enabled by new technology, are critical roles in these processes. In this context, "critical educators should take more responsibility within the system and take up their own share of responsibility for technology related decisions" (Jandrić, 2011: 82). The critical question that one should ask is: Are we preparing students to challenge the sustainability injustices or are we preparing them to reproduce and perpetuate an unjust growth-oriented global society? How can ICTs enable education for sustainability justice?

2. ICTs Potentiality and Actuality for Enabling Sustainability Justice

Web-enabled ICTs are challenging the foundations and boundaries of space, place, and time. As ICTs become commonplace entities cutting across all aspects of social, economic and cultural life, they hold considerable potential for promoting sustainability justice. Potentiality, in this context, generally, refers to any "possibility" that ICTs can have to reduce sustainability injustices prevailing the world. Actuality, in contrast to potentiality, is the change or evidence that ICTs potentiality for sustainability justice turns into reality.

In terms of potentiality, web-enabled ICTs have been increasingly promoted as a means for advocating and empowering the historically disadvantaged groups, such as women, the poor and minorities. A virtual space can provide opportunities for the underprivileged and excluded to raise their voices and generate discussion that can lead to action. For such social groups to benefit from virtual spaces, they need access and capacity to utilise ICTs. Web-enabled ICTs have the potential to

disseminate knowledge, skills and competences necessary for advancing advocacy, empowerment and change (Makrakis, 2014a). The potential of ICTs to help learners explore concepts, engage in problem-based and authentic learning, enhance meta-cognitive skills and present information using multiple media cannot be neglected (Makrakis, 2012b; 2010).

Over the last decades, two major complementary trends are emerging to transform the old ways of knowing, being, doing, living and sharing. One of these trends, digitised open education resources (OER), first initiated by UNESCO (2002), is transforming higher education by enabling individuals, institutions, and organisations to narrow the learning divide. Academics, researchers and learners are given the flexibility of accessing OER from anywhere and at any time, mostly without cost. The other trend in recent discourse is the emergence of OpenCourseWare (OCW), which is unlocking knowledge to everyone, anywhere. OCW has become a trend in hundreds of universities worldwide, providing free educational content to anyone, without social, geographical and temporal barriers. This innovation can be better seen as a free online library of course materials used to teach undergraduate and graduate courses.

These trends are based on virtual spaces, which have added a completely new perception of time and space. They have appeared as “alternative emergent cultures” that have created spaces for subversion and de-territorialization of the contemporary university by “divorcing information and communication technologies from values and ideologies of global neoliberal capitalism” (Hayes & Jandrić, 2014: 197). Indeed, web-enabled ICTs have changed our spatial and temporal dimensions by increasing access to rich and varied OERs available through online databases 24 hours a day. These trends can be considered as part of democratisation of education which entails higher levels of accessibility and affordability of OER and OVW, together with increased control of the learning process.

In terms of actuality, access to web-enabled ICTs is becoming a critical determinant factor that affects the right of everyone, everywhere to access and benefit from their transformative powers. The great majority of people around the world, most of them women and minorities, continue to be excluded from accessing ICTs. In this sense, technology has also exacerbated vulnerability, created new risks, and undermined sustainability justice (Meikle and Sugden, 2015; CARDET, 2014; Makrakis, 2012a). The “digital divide”, usually referring to the division between the Global North and the Global South, restricts access to the benefits offered by ICTs and has stronger effects on certain social groups, characterised by gender, ethnicity, and class.

It is, thus, assumed that unlocking ICTs potential for advocacy, empowerment and capacity building can have a significant impact for transforming education to advance sustainability justice, especially through the post-2015 framework of new Sustainable Development Goals (SDGs). However, ICTs do not advocate, empower or build capacities by themselves. According to Hayes and Jandrić (2014:

194–195), “technology is not an object, nor a subject, but a dialectical process of material and linguistic negotiation between competing social forces”. It is human agency that can unlock ICTs potentiality and actuality for sustainable human development and sustainability justice.

3. Unlocking ICTs Potentiality and Actuality to Enable Education for Sustainability Justice

The process of unlocking the potentiality and actuality of ICTs for enabling sustainability justice is not a matter of technology itself, but it is rather the way we perceive technology, teaching, learning and curriculum. Teachers’ roles and perceptions are of the most critical importance in this process, besides the need for the embedment of sustainability justice as an underlying philosophy in the teacher education study programs. In this context, there is need for a shift where teachers see themselves functioning as facilitators and mentors, as resources, as curriculum developers (Makrakis, 2006), and as transformative intellectuals (Giroux & McLaren, 1996). Each of these roles is associated with specific activities. Teachers as “facilitators and mentors” will guide and facilitate learners’ critical and creative thinking in a collaborative learning environment enabled by new technology. Teachers as “resources” will develop learners’ capacities for active citizenship and contribute to their fellow teachers’ professional development enabled by new technology. As “curriculum developers”, teachers critically assess school knowledge, reorder and enrich curriculum according to the principles of new pedagogy enabled by new technology. Teachers as “transformative intellectuals” are involved in developing a discourse that unites the language of critique with the language of possibility (Giroux, 1988). The main issue for the educators to function as transformative intellectuals, as Giroux (1988) states, is to make education more political and politics more educational. This means: 1) that school is a space of politics, in the sense that, the choice of the content of the curricula, as well as the educational process are formed by relations of power and struggle, and 2) the curricula and the educational concepts and practices should include political literacy (Giroux & McLaren, 1996).

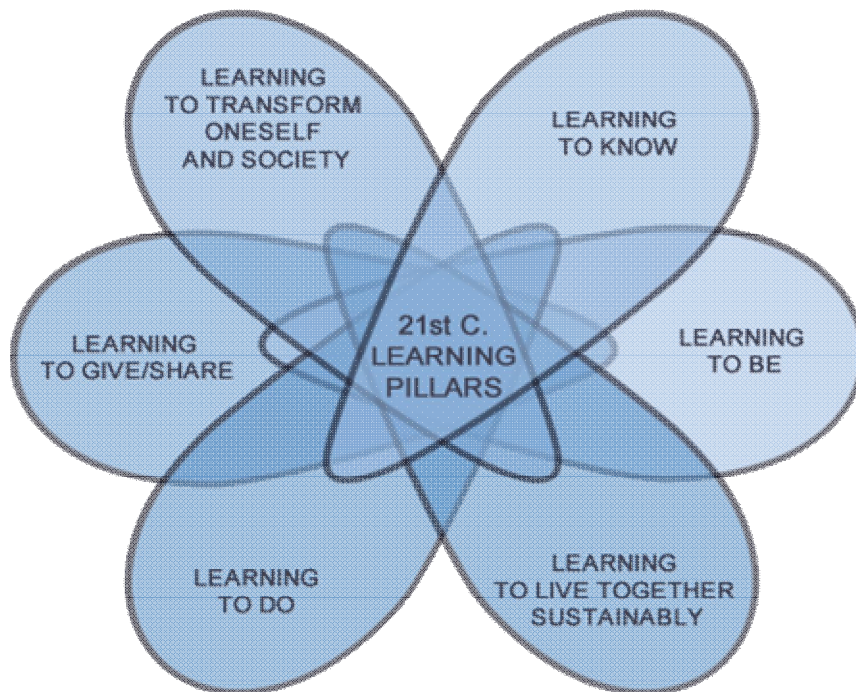
Questions around the connectivity of education for sustainability justice and ICT are not only questions about the “how”, but also the “why” and “what”. To advance such a role of ICTs for sustainability justice, there is the need for a shift to an alternative educational paradigm that alters:

- 1) Our way of being in the world (learning to be).
- 2) Our way of discovering others by discovering ourselves (learning to live together).
- 3) Our way of learning how to learn as well as appreciating all sorts of knowing (learning to know).
- 4) Our way of putting knowledge into action (learning to do).

- 5) Our way of approaching the marginalised and those living at risk (learning to give & share).
- 6) Our problematic frames of references – sets of fixed assumptions, habits of mind, meaning perspectives and mindsets (e.g. Mezirow, 2003) that led to the current sustainability crisis (learning to transform oneself and society).

In its 1996 report to UNESCO entitled “Learning: The Treasure Within”, the International Commission on Education for the 21st Century argued that education should be based on four fundamental pillars of learning: learning to know, learning to be, learning to do and learning to live together, which “provide maps of a complex world in constant turmoil” as well as “the compass that will enable people to find their way in it” (Delors et al., 1996: 85). At a later stage, the 5th pillar of “learning to transform oneself and society” was added by UNESCO. Makrakis & Kostoulas-Makrakis (2014) introduced the 6th pillar of “learning to give & share” in order to respond to the quest for merging volunteerism, social activism and learning (Figure 1 and Table 1). The idea of “giving and sharing” is, for example, inherent in the OER and OCW movements, through which the global knowledge is provided and accessed as a public good and that ICTs should be affordably accessed for everyone to construct, share, use and reuse knowledge.

Figure 1 21st century learning pillars



Source: Makrakis & Kostoulas-Makrakis, 2016

Table 1 Definition of the 21st century learning pillars

Learning to know	Concerns all processes and practices that lead people to experience, construct and transform knowledge for making sustainability a mode of life and being.
Learning to be	Concerns all processes and practices that lead to human self-actualisation, self-understanding, self-regulation and cultivating a sense of being versus having.
Learning to live together sustainably	Concerns all processes and practices that lead to a peaceful and non-discriminatory society and human co-existence with the natural world.
Learning to do	Concerns all processes and practices that lead to merging knowledge with action for building a sustainable future.
Learning to transform oneself and society	Concerns all processes and practices to transform their unsustainable values and behaviours and collectively engage to change society towards sustainability.
Learning to give and share	Promotes solidarity and caring attitudes to meet human needs as learners gain autonomy and purpose for their learning and civic engagement.

These six processes defined as key learning pillars for the 21st century can be enabled by the 10Cs depicted in Figure 2 (Makrakis & Kostoulas-Makrakis, 2016; 2014). According to Makrakis and Kostoulas-Makrakis (2014), in a world of rapid change driven by ICTs, along with the current sustainability crisis that threatens the very existence of humankind, education must go beyond the focus on the 4Cs (AT21CS 2012; Partnership for 21st C. Skills 2011; AMA 2010) to what they have termed the 10Cs.

Each of the 10Cs has its own role in teaching and learning for problem solving. For example, critical thinking and problem solving refers to the ability to make decisions, solve problems and take appropriate action, using learning processes such as conceptualizing, applying, analysing, synthesizing and/or evaluating information gathered by multiple means. Communication refers to the ability to synthesize and transmit ideas in both written, oral and virtual formats. Collaboration refers to the ability to work effectively with others using multiple communication means. Various OCW initiatives, such as those of the MIT (MERLOT) and Open University (OpenLearn) show that collaborative efforts are openly modified and enhanced by constituents of the network community, globally (McIsaac & Moreira, 2009).

Creativity and innovation refers to the ability to apply new ideas in developing innovative applications and solutions. Wikis, such as Wikispaces, WikiQuESD (Makrakis, 2014a; 2012b; 2010), and the latest versions of Pixie, Frames and Share, include collaboration options that allow synchronous collaborative learning. Such innovative applications are crossing spatial and temporal boundaries (Cummings, Espinosa, & Pickering, 2009). Blogging is another means for virtual communication (e.g. Edublogs, Blogger, & WordPress). Mind-mapping and concept mapping tools can become a great collaborative way in reflecting,

conceptualising, constructing and assessing knowledge (e.g. SpiderScribe, Wise Mapping, ChartTool, Cmap, Creately). These tools can boost learners' creativity and provide them with different ways to interconnect their thoughts as well as to accomplish metacognitive reflection skills. Similarly, tools for creating infographics (e.g. Wordle, Tableau, & Inkspac) engage students in actively discovering connections and develop creativity.

Figure 2 ICTs as enabling tools for the 10Cs



Source: Makrakis & Kostoulas-Makrakis, 2016

Connectivity addresses the complexity of the human-society-nature interaction, which can be significantly enabled by ICT-driven networking means. ICTs are still not affordable by the great majority of poor nations. In a recent report of the state of global connectivity (Internet.org, 2015), the unconnected are disproportionately located in developing countries: 78% of the population in the developed world is online compared to just 32% in emerging economies. Moreover, adoption of the Internet is slowing: the rate of growth declined for the fourth year in a row to just 6.6% in 2014 (down from 14.7% in 2010). According to the report, at present rates of decelerating growth, the Internet won't reach 4 billion people until 2019. It is concluded that, in order, for the entire world to connect to the Internet, there is an urgent need to address the three barriers to access: infrastructure, affordability and relevance.

Critical reflection refers to complex processes that strongly engage learners to critically reflect upon their reality, personal and social, and to transform it through action and reflection (Stanlick, 2014). Critical reflection goes beyond mere reflection, in that it requires the reflector to “deconstruct long-held habits of behaviour by looking beyond the behaviour itself to their own self-image and examining why they do what they do” (Silverman & Casazza, 2000: 239). In other words, when engaging in critical reflection, one should expose and critique one’s own values, experiences and habits of mind and those of the community in which one works, learns and lives. Cross/inter-cultural competence addresses learners’ capacity to communicate, collaborate and work in multicultural and global environments.

Co-responsibility refers to a culture of sharing that necessitates shifting to less egocentric principles and practices. Critical consciousness or conscientization in Freire’s (2000) terms denotes the process of developing a critical awareness of one’s social reality through reflection and action. Constructing knowledge represents an attempt to shift from consuming information to constructing knowledge. The critical 21st century skills enabled by ICTs merged with the 21st century learning pillars can be used as powerful means to transform school curricula towards sustainability justice.

4. Moving from Theory to Praxis through the DeCoRe Plus Model

The outlined issues of critical reflection, identity reconstruction, and critical consciousness, have become the driving forces for developing an ethical perspective to the conceptualisation and development of sustainability-just curricula. To enable pre-service and in-service teachers to develop the knowledge, critical skills and action competences necessary to understand sustainability justice in curricula requires a sense of agency and capacity to confront with personal (inner) frames and external (outer) structures that obstacle the conceptualisation and integration of sustainability justice in school curricula.

The DeCoRe plus methodology was developed to help prospective and in-service teachers at the Department of Primary Education at the University of Crete to embed sustainability justice in school curricula enabled by ICTs. DeCoRe plus is the abbreviation of Deconstruction-Construction-Reconstruction processes supplemented by those of Diagnostic Evaluation, Implementation and Summative Evaluation. The theoretical underpinning of the DeCoRe plus methodological approach derives from critical social theory, critical pedagogy and postmodern conceptions of teaching, learning and curriculum (e.g. Giroux, 2006 2004; 2002; 2000; Derrida, 2006; 1984; Mezirow, 2003; 2000; 1991; Freire, 2000; 1998ab; Habermas, 1990ab; 1971). It has been also drawn much on Freire’s concepts of dialogue, praxis (critical reflection) and conscientisation: the process of developing a critical awareness of one’s social reality through critical reflection and action. Other Freire’s concepts utilised in the DeCoRe plus, include codification and

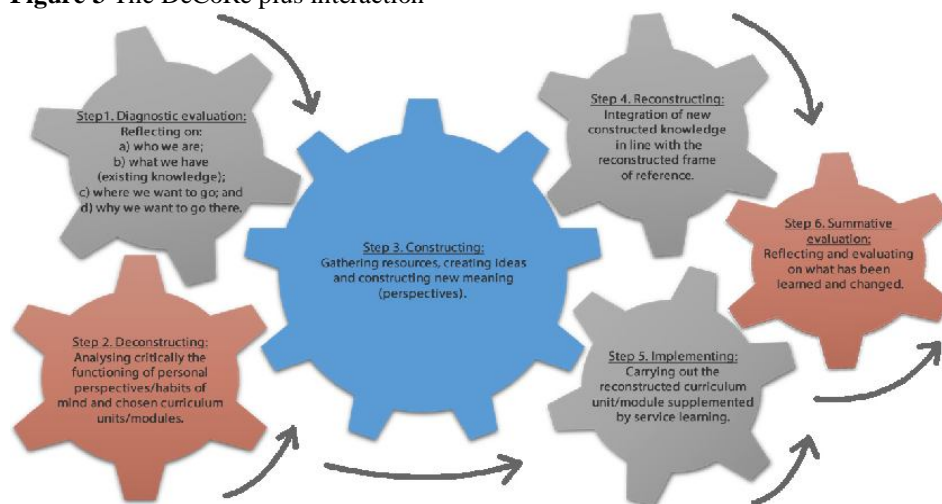
decodification. The first focuses on a process to build up a knowledge representation conveyed by symbolic means such as language, drawings, and pictures, and represents existential situations experienced by the target population in the situation and functions as a mediator between the theoretical and the practical contexts. The second is a process whereby the learners begin the interpretation of codifications by applying critique and a disposition for change (Freire, 1973ab; 1974).

Although the six DeCoRe plus processes follow a linear order (Table 2), each process is interconnected with each other to constitute a whole system (Figure 3).

Table 2 The DeCoRe plus processes

DeCoRe+ Processes	Key concepts in each process
<i>Diagnostic Evaluation</i>	Reflecting on: a) who we are; b) what we have (existing knowledge); c) where we want to go; and d) why we want to go there.
<i>Deconstruction</i>	Analysing critically the functioning of personal perspectives/habits of mind and chosen curriculum units/modules.
<i>Construction</i>	Gathering resources, creating ideas and constructing new meaning (perspectives).
<i>Reconstruction</i>	Integrating new constructed knowledge in line with the reconstructed frame of reference.
<i>Implementation</i>	Carrying out the reconstructed curriculum unit/module supplemented by service learning.
<i>Summative Evaluation</i>	Reflecting and evaluating on what has been learned and changed.

Figure 3 The DeCoRe plus interaction



The DeCoRe plus model has been applied in courses dealing with curriculum, sustainability justice and ICTs. The primary intention is to help pre-service teachers think through the lenses of critical pedagogy and sustainability justice as well as to construct multiple ways of knowing about teaching, learning and curriculum. Four key themes ran throughout the course. 1) Understanding teaching as an ethical and political praxis and the teacher as an active constructor of meaning, knowledge and curriculum. 2) Assessing curriculum as product, process and praxis. 3) Viewing curriculum in its close connection to purpose, intentions and ideology. 4) Developing pre-service teachers' sustainability justice literacy. These are reflected in Table 2, which is used as an organiser to discuss sustainability justice in teaching, learning and curricula, The organizer draws from Habermas's (1971) theory of the three constitutive knowledge interests and Sterling's (2001) four main functions of education (the socialization function, the vocational function, the liberal function, and the transformative function). Sterling sees the transformative function as central to achieving a more sustainable educational system. A large international study assessing 3,757 final year students' preferences toward these functions showed that there was a clear trend toward a preference to the transformative function that sees a university as an agent of change toward a fairer society and a better world (Makrakis & Kostoulas-Makrakis, 2013b).

Table 2 An organiser for discussing ways of knowing, roles, curriculum perspectives and teaching/learning pedagogies (based on Habermas, 1971, and Sterling, 2001).

Type of knowledge/ Human interest	Perceived role of education	Teaching and learning paradigms	Curriculum perspective	Pedagogy	Research paradigms
Technical (prediction; causality; instrumental; objective)	Socialisation (replicating society, culture and citizenship) Vocationalisation (preparing for employment)	Transmissive (transmitting facts, skills and values)	Product-oriented (prescribed, mandated and competence-based)	Behaviorism (focus on observable behavior rather than internal thought processes)	Positivism (predicting cause and effects; control of human behavior)
Practical (contextual; understanding; intersubjective)	Liberal (developing personal virtues, values, ethics and civic engagement)	Transactive (meaning making constructed through dialogue and interaction)	Process-oriented (experiential, flexible, reflective, dialogic, living text)	Constructivism (knowledge and meaning construction through interaction)	Interpretive (understanding of meaning; reality is constructed intersubjectively)
Emancipatory (self-reflective; subjective)	Transformative (developing a fairer society and a more sustainable world)	Transformational (altering learners' thinking and social reality)	Praxis-oriented (participatory, negotiated through action and reflection)	Critical pedagogy (merging self-reflection and understanding with a commitment to change)	Critical-transformative (dialectical, empowerment, committed to personal and social change)

In this context, teachers are increasingly called upon to switch from consumers and transmitters of knowledge towards taking an active role as curriculum developers, knowledge constructors and transformative learning agents enabled by ICTs. More specifically:

- ESJ (Education for Sustainability Justice) themes such as cultural diversity and intercultural understanding, health, HIV/AIDS, governance, natural resources, climate change, production and consumption, rural development, poverty can provide meaningful and challenging contexts for developing a wide range of ICT skills.
- ICT skills and tools such as concept mapping, modelling, social networking can provide a context and rationale for advancing ESJ themes, concepts, principles and methods that are conducive with transformative learning theories.
- OER and OCW content; open software tools; repositories of learning objects; and other learning resources, such as learner-support and assessment tools and online learning communities, can be used to enhance education for sustainability justice.

5. Initiating Self-transformation

In the DeCoRe plus diagnostic evaluation process, the central theme is reflecting on personal identity (who we are). This process is of particular importance, as self-transformation is prerequisite for getting involved in transforming teaching practices and curriculum as well as moving towards social transformation. In courses based on the DeCoRe plus model, pre-service teachers have the opportunity to critically reflect on their educational philosophy, especially as it relates to its consistency with praxis.

This process is facilitated by the administration of a survey at the beginning of the course to all pre-service teachers. The survey deals with the six representative educational philosophies: essentialism, perennialism, progressivism, pragmatism, existentialism and social reconstructionism. The outcome is presented and discussed in class by posing the following three key questions: 1) Which of these educational philosophies would you describe as authoritarian and non-authoritarian? 2) Does each of these philosophies relate to one or more worldviews; and what connections do you see among them? and 3) Which educational philosophy is most compatible with your own beliefs? Why?

The course prompts pre-service teachers to raise social critique of the current state of sustainability injustices, locally and globally; critically reflect on who they are; envision more positive and sustainable futures and the ways these can be realised in light with their educational philosophy. It is a process which transforms the way people relate to the current and future generations, and their connection to sustainability justice, by envisioning alternative futures.

Pre-service teachers collectively identify shared values, critically reflect and clarify their own values, describe the alternative futures for themselves and society. They are encouraged to actively participate in this process, through the following questions:

- What does a sustainable and desirable world look like?
- Which worldview, or shared human growth system, should predominate?
- How should we manage natural and human-made capital?
- What should the economy look like that is consistent with sustainability justice?
- What should characterize our interactions with natural environment, society, economy and culture?
- Which factors should weigh most heavily in our quality of life driven by sustainability justice?
- What should our societal priorities be in order to reflect sustainability justice?

Through this critical reflective/reflexive process pre-service teachers “rewrite their personal theories” and reinterpret some of their own perspectives and habits of mind based on new insights about their role as agents of change.

Critical reflection goes beyond mere reflection, to “deconstruct long-held habits of behaviour by looking beyond the behaviour itself to their own self-image and examining why they do what they do” (Silverman & Casazza 2000: 239). When pre-service teachers are engaging in critical reflection, they make explicit “who they are” and challenge their own basic assumptions and those of their community and society they live in. In this way, they are involved in a dialogue and critique of their own ideologies, perspectives and practices in teaching, learning and curriculum. The DeCoRe plus methodology entails investigating and reflecting on the roots of their personal theory as well as of their value system, prejudices, biases, assumptions, experiences, etc. – and how these ensure, or interfere with sustainability justice.

The self-transformation process starts from Derrida’s (2006; 1984) assumption that there must be a movement within the knowledge structures of a person in order to stimulate mental progress without completely breaking down the knowledge structures which already exist. Using this process, pre-service teachers are challenged to re-think what they have taken for granted or simply unquestioned. This leads to the destabilisation in the pre-service teachers’ comfort zones.. Such a process can be seen as thinking outside the limits (box), which stimulates and forces pre-service teachers to think beyond the borders of their identity construction.

Through this process, pre-service teachers are able to understand the reasons for their way of knowing, thinking and behaving in order to know what should change, how to change it, as well as the reason why it should be changed. To facilitate pre-service teachers' self-transformation, some key points are taken into consideration, such as: creation of a respectful environment for dialogue; connecting intentions and actions with impacts; be positive to external critique, honesty and good

listening; avoidance of defensive attitudes in others' critique; acceptance of responsibility and co-responsibility; and the will to "reconstruct oneself".

6. Deconstructing Curriculum Units/Modules

The self-transformation process experienced in the previous step paves the way for pre-service teachers to get involved in deconstruction of the curriculum unit chosen. The DeCoRe plus deconstruction process includes six domains: 1) content; 2) methods of assessment; 3) gaps, silences and undergird assumptions; 4) power and interests; 5) dominated perspectives and versions of reality; 6) the image and values portrayed and transmitted by the unit/module author(s).

In each of these domains, questions are posed to guide and facilitate the deconstruction process with particular reference to the assessment of the unit/module under deconstruction in terms of its aims and objectives, coherence between aims, objectives and learning activities, connectivity to real-life, the four pillars of sustainable development, the six learning goals, the 10Cs, the 17 SDGs, interdisciplinarity and problem-based learning. Pre-service teachers are encouraged to discover:

- The values in the unit/module that are supposed to be taught but they are implicit.
- Whether the unit/module reproduces the dominant ideology and the economic model of non-sustainable economic growth.
- Whether learners are enabled/empowered/emancipated/liberated or limited/deskilled/oppressed.
- The positions, voices and interests that are at play in the unit/module.
- The views that are excluded or privileged in the unit/module.
- How learners are assessed; the authenticity of the evaluation methods and of the knowledge assessed.
- The extent to which the curriculum allows for the social construction of meanings by the learners.
- The nature of the social relations embodied in the classroom activities; the epistemological assumptions undergird in the curriculum units/modules (knowledge as technical/instrumental; practical and emancipatory).
- What values are explicit and implicit within the curriculum.
- The aspects of culture or knowledge the curriculum promotes; democratic accountability and decision-making.
- Whether the curriculum promotes or restricts critical reflectivity, action learning and problem solving.
- If learners are given the opportunity to learn concepts, principles, ideas and values that are not registered with the official curriculum.
- If there could be knowledge and activities considered necessary in the unit/module, but not included and identify what prevents the learner to learn

something that would otherwise be useful in learning about the specific teaching/learning unit/module.

- What is missed or silenced from the unit/module content.

In the deconstruction process particular emphasis is given to issues related to power and interests. Pre-service teachers are required to identify whose interests/views are raised in this teaching/learning unit/module and why; what interests/views are hidden or silenced and whether the alleged views in the teaching/learning unit/module are objective and just. They are also encouraged to uncover the image of the world that is conveyed through the teaching/learning unit/module; which side of social reality is depicted; what is real and what is imaginary and what are the analogues of the subject in other places/areas. Finally, the pre-service teachers are looking for the aspects of life/world the author/s value and contrast them with the extent to which they are similar to or different from the views they hold or others.

7. Construction Process

The deconstruction process is often followed by the reconstruction. However, there is a need to place in the middle a construction process, which functions as a link between the two. The construction process consists of two key parts. In the first, pre-service teachers are asked to assess the implications that the deconstruction outcomes entail to the reconstruction of the curriculum unit/module. In the second, they are asked to select and define appropriate materials, methods, strategies, media and ICTs that reflect the deconstruction outcomes. At this step, particular emphasis is given to what is needed for the reconstruction of the curriculum unit/module and ensure the integration of sustainability justice in the reconstructed curriculum. ICT tools, multimodal texts, collaborative concept mapping and interactive whiteboard (IWB) applications have been the focus of technologies used supplemented by OER and OCW. For example, through Google Earth, pre-service teachers construct global hunger/poverty/child mortality maps to enhance current understanding of the global distribution of such injustices and the geographic and biophysical conditions of people facing them. Similarly, Google Earth has been used for tracking environmental changes, deforestation, child labour, digital gaps, violation of human rights, and other sustainability issues. They also construct learning materials using extensively Open Education Resources (OER) freely accessible on the Internet.

8. Reconstruction Process

In the process of reconstruction, the pre-service teachers realise their own agency in reconstructing curriculum. They are also given the chance to reflect on “who they have become”, contrasted to “what they were” at the beginning of the

deconstruction process. They are, thus, involved in discussing what has been changed in their own identity through their learning journey and experience in the course applying DeCoRe plus. Simultaneously, they start putting together all the pieces of the new curriculum elaborated in the construction process, focusing on sustainability issues such as climate change, poverty, violence, hunger, child labour, sexism, pollution, worker exploitation, corporate exploitation, energy shortage, inadequate health care, unemployment, human trafficking, terrorism, and inequality. Thus, they make use of methods demanding inquiry, argumentation, multiple perspectives and service learning strategies. The reconstructed curriculum unit is highly infused by teaching, learning, and research resources (e.g. OER and OCW) that reside in the Web-based public domain or have been released under an intellectual property license that permits their free use.

Connecting to Freire's (2000) idea of emancipatory knowledge and critical consciousness, the infusion of sustainability justice in curricula, both as theory and practice, through the DeCoRe plus methodology, is driven by a critical perspective that aligns with and integrates the principles of critical pedagogy. Pre-service teachers are encouraged to reflect on what has been changed in their own conceptions of teaching, learning and curriculum and the meanings that these changes entail to personal worldviews and actions. This process is facilitated by the administration of a post-survey using the same questionnaire dealing with education philosophies that was given at the beginning (diagnostic evaluation) and a critical reflection on its outcomes.

9. Conclusion

Our world, locally and globally, is facing considerable injustices and challenges that education cannot and should not ignore. Remaining indifferent or neutral means a lack of co-responsibility to the continuing of sustainability injustices. Throughout the 20th century, education played a reproductive role rather than a transformative role due to a system that favoured mainly knowledge transmission and standardised assessment (Makrakis, 2014b). Developing the DeCoRe plus for embedding sustainability justice in school curricula enabled by ICTs and driven by critical pedagogy was seen as an alternative curriculum approach to the ones that maintained and perpetuated an unjust world.

Pre-service teachers in the courses where DeCoRe plus has been tried out are involved in a curriculum discourse that focuses on their experience on tackling real-life problems. Unlocking Web-enabled ICTs to embed sustainability justice in school curricula is a challenge to the prevailed curricula that are structured within a transmissive learning framework. Technology is a crucial part of what is happening in the classroom, but it is critical to remember that pedagogy must prevail (Makrakis & Kostoulas-Makrakis, 2012). The DeCoRe plus methodology leads to transformative praxis as it involves participants in the process of defining what to do and how to do, acquiring ownership in what they do, and getting involved in a

learning process that can empower them to transform their personal and social realities. Our experiences show that pre-service teachers recognise the emancipatory role of ICTs when such technologies are used for advocacy and empowerment, especially for those facing injustices and inequities. The advantages provided by interactive technologies, such as IWBs and PV (participatory video) make sense when they are driven by sound pedagogies. Pre-service teachers are also provided with opportunities to make learning more authentic by giving them the ability to contextualise learning and expanding their opportunities for equitable participation in the learning process. They also experience a new dimension of collaborative learning that is highly enhanced by a new perception of time, space and learning. Applying the DeCoRe plus methodology, pre-service teachers are empowered to participate in the organisation of their own learning process that is highly enriched by OER and OCW freely available online. Learning opportunities are also being expanded both at the class and home domains without the constraints of fixed time and place. They also learn that it is not only important and critical to understand change, but it is also equally or even more important in making positive change.

Although pre-service teachers practicing the DeCoRe plus methodology may leave their undergraduate studies with strong knowledge on sustainability justice, they also may face difficulties as in-service teachers struggling to develop sustainability-just curricula. As pointed by Agarwal (2011) in the case of teaching social studies for social justice, pressures and constraints, such as mandated curricula and standardised tests, may require novice teachers to negotiate what they want to teach with what they are able to teach. Eidson (2015: 2) stresses that “it is more important than ever to recognize the importance of providing pre-service teachers with an understanding of how to translate theory into practice, elucidating for them the complexities in translating a social justice vision into a context of accountability and standardization”. Sustainability justice education demands committed teachers to challenge pressures and constraints in their effort to develop a sustainable and just society.

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ASSEMBLY LINES OR ASSEMBLAGES: WHAT THE HUMAN EQUATION CAN TEACH US ABOUT CREATIVITY AND A MODERN EDUCATION SYSTEM IN THE DIGITAL AGE

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ABSTRACT. Mandated by the provincial Department of Education, Nova Scotia, Canada's *Action Plan for Education, 2015. The 3R's: Renew, Refocus, Rebuild* identifies four pillars for improving schools, with aims to heighten efficiency and accountability, aligning all ways of knowing behind literacy and numeracy while also improving inclusion, innovation, leadership, and teacher performance. With *A modern education system* as its cornerstone, this plan holds firmly to modernist, rather neo-liberal, principles and priorities. In the larger world, digital media and network spaces are reorienting how students perceive time as no longer modern, linear, abstract, and predictable but instead shaped into spaces that are non-linear, personalized, and unpredictable. This paper asserts that where socio-economic structures and challenges are shifting in pace with our perception of time, we increasingly need a citizenry with the creative capacities of adaptability, criticality, and imaginative problem solving. Wayne Constantineau and Eric McLuhan's *Human Equation* describes a tetradic instrument that offers insights into how the four pillars described in the *Action Plan* interact. Weighing the *Action Plan* in relation to how students are being shaped in the digital age, the paper finds that where modernist principles lag constructivist pedagogies of improvisation and aesthetic-assemblages show promise to both accommodate shifting notions of time while setting the stage to nurture creative development.

Keywords: modern education; nonlinear time; digital age; creativity; improvisation; constructivism, transformative learning

1. Introduction

Nova Scotia, Canada is modernizing its education system as prescribed by the Minister of Education's *Action Plan for Education, 2015. The 3R's: Renew, Refocus, Rebuild*. The document is laser focused on constructing a modern education system where efficiency, accountability, numeracy, literacy, and inclusion are the priorities to which all schools and subjects must conform. As the

Minister turns to modernity to renew, refocus, and rebuild the education system upon, it is relevant to ask if this is an appropriate model for students. In addressing this question, this modern system is critiqued and juxtaposed to the social environment in which it is designed to serve. Where modernity provides the structure, digital media offers an expansive universe of new spaces for learning, socializing, and consumption. Hassan (2006) observes that digital media's construct of network time undermines the power of the clock which had previously provided the coordination and rhythm that gave us the machines which in turn created capitalist industrial modernity. The abstract, linear, and sequential influence of the clock is rivaled in the 21st century by the synchronized globalization of the nonlinear, personalized, and unpredictable digital landscape. To meet the challenges and opportunities of this changing landscape, many are calling for creativity, ideation of novel thought, to be recognized as an essential skill to be developed in schools. It should make sense, therefore, that any pervasive educational reforms would consider prioritizing the creative development of students. Time provides a context to critique the relationship between this modern education system, our digital media ecology, and creativity. The *Action Plan for Education, 2015* will also be analyzed referencing Wayne Constantineau and Eric McLuhan's *Human Equation* (2010) and subsequently compared to two constructivist pedagogies of improvisation and aesthetic-assemblages for their potential to respond to the educational needs of students in our changing times.

2. Theoretical Foundations: Curriculum, Creativity, 21st Century Learners, and the Human Equation

Conversations and actions around curriculum reform bring few surprises, as the various paths are well tread. Debates around the efforts of various school systems to be accountable to stakeholders have gone on since curriculum rose to make the practice of education more accountable and systematic. John Dewey's vision for education to be more democratic and experiential where "members are educated to personal initiative and adaptability" (1916: 102) is still overshadowed by "rigidness in specifying activities for children and not trusting the children's ability to learn from their own experience" (Egan, 2003: 13). Within an ordered school environment and curriculum built to serve the stated needs of industrialism and capitalism, the freedom for students to explore and express is tempered by initiatives intended to ensure that curricular practices are standardized and measurable in Nova Scotia's *Action Plan for Education 2015*. Digital devices, however, provide students with the spaces, connections, and information to explore their world and learn outside the authority of schools.

3. 21st Century Shifts and Education

Through the massive and expanding capacity to gather, sort and move information in all its forms (words, numbers, images) digital media have done more than enhance the efficiency of administering education or engaging students. Digital media have also made simple practices arduous while successfully engaging students to the point of distraction. We are witnessing a move away from teaching and learning as gatekeeping activities mediated through the chalkboard or even the *Smartboard*. The student's gaze, once fixed on the board at front of the room, has shifted to the personalized small screens of *smart* devices (i.e. iPads™ and iPhones™) and laptops. With this shift, students realize that an education can be experienced beyond the homogenized and fixed times and spaces of schooling. Where modernity delivered a defined range of subjects using selected textbooks and videos through a restricted community of usually certified teachers, our digital media offers students unlimited choices in all of these dimensions found through global connectivity. Students can know their world through a variety of interfaces and processes, from conversations and games to sophisticated and interactive virtual worlds. Such digital media connects us through what Manuel Castells calls the *space of flows*, where "space organizes time in the network society" (2010: 79). Where the clock provided the consistent and dependable abstract linear, and logical system that made digital devices possible, the spaces that users and programers created through these devices reorganize how we experience time. In shaping digital spaces to suite our purposes, time follows as something often subjective, non-linear, hyper-logical.

The multi-sensory illusion delivered through portable digital media and the *space of flows* offer a sense of time and space that is reminiscent of acoustical space (McLuhan, 1964, 1968) and hyper-logic – it is often omnidirectional, disjointed, rearranged, unpredictable and irrational. Just as the smart phone's clock has pushed aside the necessity of a wrist watch, we are witnessing the demise of handwriting to our digital interfaces. Speech to text capacities can even have us "Looking to the future, [where] we could imagine a cyberspace with less or no alphabet – an online communication system comprised in part or entirely of speech" (Levinson, 2004: 51). In these spaces, our rational self lets us believe we are actually connecting to various spaces. As we explore and perform tasks among virtual and physical spaces, the flows collide and mingle in our minds. Each space offers its own notion of time or *timescape* (Hassan, 2011; 2015). When they mix together, our ability to keep pace with a mechanical rhythm becomes increasingly elusive and irrelevant. Our sense of time can now come from a broader range of cues including those from local and online communities and phenomena. As such, the supremacy of linearity and rationality found in clock time and schooling through physical spaces are disputed in the digital age.

The multidirectional and asynchronous connections made in the *space of flows* provide pathways to enhance our current classrooms while threatening other classroom conventions with obsolescence. Where modern schools shaped

classrooms to facilitate learning, in the digital age classrooms are becoming more like “learning depots – where we gather to prepare for various departures” (Emme, M., personal communication, March 23, 2016). Easing and supporting the potential for each student to depart on their own learning journey, portable digital media leads classrooms to be fractured. Digital devices and spaces change how students interact with each other, their teachers, and their world. Their potential and impact does not just extend the classroom, it changes its function entirely. In a digital learning ecology content is increasingly tailored to student interest and the teacher’s role shifts from sage to coach. Those that struggle with this shift may continue to approach smart devices in the classroom as a growing distraction. However, by embracing digital media, the contemporary teacher can make room for linear and non-linear processes, where divergent thinking and creative exploration becomes as commonplace as deductive reasoning. It is possible, therefore, that in these environments the creative mind may feel at home (Carr, 2010: 119).

4. In Search of Creativity

The internet offers precisely the cognitive stimuli that can rewire the brain. “Repetitive, intensive, interactive, addictive”, it is the arguably the most powerful mind altering medium since the book (116). Such stimuli is “the juicy piece of meat carried by the burglar to distract the watchdog of the mind” (McLuhan, 1964: 31). Through this stimuli and distraction, we are witnessing a rapid evolution of our media landscape. Contending with these forces requires creative capacities as “reflected in production of useful, new ideas or products that result from defining a problem and solving it in a novel way within a particular cultural context” (Zimmerman, 2009: 386). Viktor Lowenfeld saw creative development as educating students to be sensitive and see abstract relationships in a problem towards adapting, redefining, reorganizing, ideating, synthesizing, and organizing solutions, “that is, the ability to put parts together in a meaningful way” (1964: 8–9). He further proposes that “to teach toward creativity is to teach toward the future of society” (7).

R.G. Collingwood drew our attention to creativity as “an activity of which there can be no technique [and] when creating for ourselves an imaginary experience or activity, we express our emotions and this is called art” (1967: 111). Whatever the process that delivers a creative solution, Collingwood points to the qualities of creative processes that occur in our prepared unconscious mind. John Kounios and Mark Beeman’s (2009) research into creativity and brain activity supports the Zimmerman and Lowenfeld versions of creativity as well as Collingwood’s account of creative expression as emerging from the unconscious mind.

As evident in *avante garde* Dadaist art and jazz music, creative solutions have long been held to come from the juxtaposition of disparate concepts or remote associations via serendipity, similarity, or mediation (Mednick, 1962). In search of

greater empirical evidence of our creativity, Kounios and Beeman followed this insight into creativity where they now claim to have isolated the *eureka* moments or creative incidents in the brain. They observed this as a form of synthesis or connecting of disparate ideas exemplified by a distinct burst of gamma energy in the human brain's right hemisphere moments before the participant claimed to experience an *eureka* moment (2009).

We are familiar with spaces opened by clock time as they share ground with literacy and numeracy – consciously performing more logical tasks in the left hemisphere of our brains. In the right hemisphere we connect disparate experiences and memories found among our brain's posterior and anterior temporalities forming novel concepts and solutions (Jung-Beeman, 2005). For Jung-Beeman, it is not that creativity happens entirely in a flash, rather we prepare our brains with queries and reflective experiments, juxtapositions of experiences, and the allowance periods of relaxation to free our minds to process ideas and eventually arrive at new insights. It is when the mind is quiet, inward looking, somewhat happy, and not trying too hard that concepts of loose association connect and give us the *eureka* or *aha* moment. Such moments of creative awareness come when our mind is relaxed and not consumed by left hemispheric processes.

Similar to Collingwood's understanding of creative expression, for Kounios and Beeman, creative moments often come without technique or intent. Ideas are connected unconsciously to create new understanding or meaning from that which would otherwise remain elusive or vague in our minds.

Creativity is an array of capacities within all of us that are worthy of focus and development. For this to occur in an education system we would need to see clear evidence of an intent to cultivate sensitivity, fluent ideation, adaptability, originality, a capacity to reframe problems, to think abstractly, to synthesize and organize new ideas for meaning. We could also help stage environments that prepare the mind to be open for creative processing. It remains unclear if Nova Scotia is forming an education system that standardizes learning, desensitizes student, and seeks linear thinking or if it is setting the conditions for creative development — avoiding practices that Ken Robinson would say “kill creativity” (2006). To address this question, Wayne Constantineau and Eric McLuhan's *The Human Equation* should provide a useful lens into the trajectory of Nova Scotia's education system.

5. The Human Equation

“When the evolutionary process shifts from biology to software technology, the body becomes the old hardware environment. The human body is now a probe, a lab for experiments.” – Marshall McLuhan (Constantineau and McLuhan, 2010, preface)

Eric and Marshall McLuhan's *The Laws of Media* (1988) provides an instrument which aims to provide insight into how a medium or tool impacts a social process

or experience by tracking along several dimensions its relationship to previous and future technologies and their social impact; what previous medium it retrieves or releases to serve a new function; what is made obsolete; and, at its extreme, how it does the opposite of what it intended.

In the *Human Equation* (2010) and the *Science of Investigation* (2012), Wayne Constantineau and Eric McLuhan outline a similar diagram that is more adept at assessing fields, of which public education is one. As modeled in Figure 1, the *Human Equation* brings the *Laws of Media* to the body, where “All of our tools and all of our media imitate us: that is, they embody features or modes of action... We created our media to be used through our modes of action” (2010: 5). In the human equation, each quadrant of an observed field represents one of our basic human modes of action or postures:

- A. Assuming a posture unifying or acting as the foundation for all the elements.
- B. Bending joints or articulating which separates elements.
- C. Contract muscles or integrating aspects of the other three.
- D. Displace in space, or the polarizing the elements.

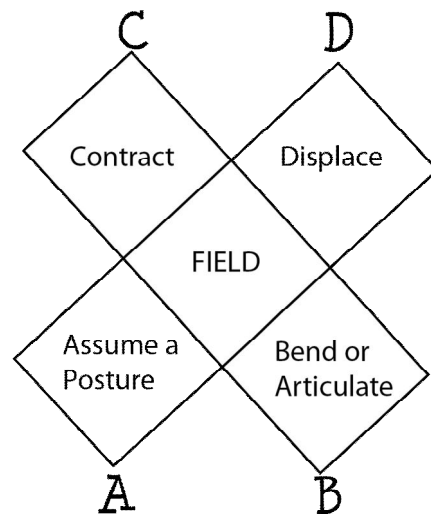


FIGURE 1 TETRAD AS ARRANGED
IN CONSTANTINEAU AND
MCLUHAN'S *THE SCIENCE OF*
INVESTIGATION (2012, P. 3)

As a tetrad, these four elemental actions “co-depend on each other for their very existence” (2012: 29). “The complete set of four exhibits an inner balance, or harmony, such that the relation between two of the elements echoes the relation between the other two: expressed A is to B as C is to D” (1). Through this

sequence, the (A) assumed posture, which holds ground and does not waver, causes the next element (B) to have to bend. A subsequent element (C) must then contract to make sense or order of the other elements. The remaining element (D) is then in the posture of displacement, it deals with what remains.

By way of example “Space/Time and Mind/Body help us describe our four modes of being. Action and memory regulate time. Sense and thought manage (perceptual and head) space. Our senses of space come to us through our modes of perception. Time, meanwhile, is an extension of memory” (2012: 50). Therefore, our senses are foundational or the assumed posture (A) from which we bend or make sense of our senses by thinking (B). We can then contract or act on our perceptions (C) and from this we displace our action by transforming it into memory (D). As we apply to our digital landscape, our sensory experience remains our assumed posture (A). The experience offered through digital media altars or bends and informs our perceptions (B). Our actions in, among, and extending from digital and physical spaces are our contractions (C). Finally, the resulting memory or impact of the experience is (D) what is displaced by the digital media. Taking advantage of the good while mitigated the ill effects of our expanding digital environment will at least require leaders, teachers, and students with the creative capacity to observe, adapt and ideate novel solutions to serve particular cultural contexts. By introducing such a transformative element into the classroom, one which extends space and sensory experiences far beyond the classroom, its impact on the classrooms and the school systems that govern them should warrant analysis. By coincidence or design, the Nova Scotia *Action Plan for Education 2015* is sorted into four pillars (36). Assuming the *Human Equation* is a reliable instrument, assessing the *Action Plan* through the *Human Equation* should yield meaningful insights that will aid this investigation.

Methodology

From these foundations of the 21st century digital landscape and the nature of creativity we can now assess Nova Scotia’s plan for education reforms and the assumptions that guide it. Constantineau and McLuhan’s *Human Equation* will be used to probe and assess the relationship between this proposed modern education system, common qualities of 21st century learners, and their creative development. After which, to provide context for an alternate to a modernist approach to education, two constructivist pedagogies are investigated for their capacity to meet the learning needs of students while promoting creative development – one based on improvisation, and the other based on nurturing aesthetic-assemblages.

Modernizing an Education System

As they took office in 2013, the Liberal Government of Nova Scotia sought to “engage all Nova Scotians in an assessment of the public school system” (Nova Scotia, 2014: 13). The public, including parents, teachers, businesses and community groups were solicited to participate. These consultations led the

Minister's Panel on Education Report (2014), *Disrupting the Status-Quo: Nova Scotia Demands a Better Future for Every Student*. The report acknowledges that "Nova Scotia has remained fairly consistent over time, based on national and international assessments of mathematics, science, and reading" (8). The document claimed that "it is essential that Nova Scotian youth are able to compete with youth from around the world. Nova Scotia's future competitiveness depends on it. The status quo is not acceptable" (8).

The report also cites societal shifts in public expectations, understanding of early child development, and technology (6) along with the growing significance of skills sought in Science, Technology, Engineering, and Mathematics (STEM) (4, 11, 19, 23, 39) and numerous policy changes as evidence of a crisis. Then, declaring that: "everyone agrees our school system needs to modernize, prepare for the future and change for the better" (2015: 7), the Nova Scotia Minister of education built the *Action Plan for Education, 2015. The 3R's: Renew, Refocus, Rebuild* upon four pillars:

1. A modern education system.
2. An innovative curriculum.
3. Inclusive school environments.
4. Excellence in teaching and leadership. (Nova Scotia, 2015: 13)

Pillar 1, *A Modern Education System*, is the "firm foundation for change" that the Department aims to *rebuild* its system upon. "Specifically, the structure will be reconstructed to become more student-centred, efficient, flexible, sustainable, and integrated with other government Departments and agencies that serve children and youth" (13). The Nova Scotia Department of Education is determined to stay focused on "achievement and success"; "restructured divisions"; reviewing of the Department's "efficiencies and effectiveness"; as well as ensuring "high-quality teaching, and strong leadership" (13). This means school boards will "participate in an audit" to assess its management functionality and effectiveness of "delivering results for key Department initiatives" (14). The Department will also seeks to "Establish a Business-Education Council" to connect students to the workforce and to develop entrepreneurial skills and attributes across the curriculum" (17).

Pillar 2, *An Innovative Curriculum*, articulates how the Department exchanges its Essential Graduation Learnings based on Howard Gardner's *Multiple Intelligences* (1993; APEF, 1996) for a curriculum that is "laser-focused on improving the two most important fundamentals in education: math and literacy" (18). Literacy and math "will be reinforced in other areas like science and social studies" and there will be "more time for teaching" and "enhance[d] assessment and intervention for literacy and math" (22). With all subjects aligned under the priorities of numeracy and literacy, students are to demonstrate 'Competencies' of Citizenship, Personal-Career Development, Communication, Creativity and Innovation, Critical Thinking, and Technological Fluency. Students in grade primary, for example, will have all of their learning outcomes in art, music, and social-studies, realigned under literacy and mathematics outcomes.

It remains to be seen how the curriculum will be fashioned to “(e)ngage student interests through more hands-on learning activities” and “address the full range of students’ learning strengths and needs, including opportunities for enrichment”. The curriculum is to make a place for “the language, history, and culture of Acadians, African Nova Scotians, Gaels and Mi’kmaq, including Treaty Education”, and immigration (18).

Furthermore, all students will be exposed to more technological and scientific learning (23). Students will also be introduced to the province’s Career Education Framework; that values citizenship, entrepreneurship, and skills for trades (24). Experiences that build “creativity, innovation, and problem-solving skills” may be offered to older students through “hands-on learning activities for students in computer programming, creative arts, science labs, and collective impact projects.”

It should be noted that currently, every student from primary through grade ten spends approximately twenty percent of their year focused each on mathematics and English language arts (Nova Scotia, 2002). By comparison, a grade nine student who receives 200 hours of math instruction will have access to 50 hours of physical education and potentially no art education.

Pillar 3, *Inclusive School Environments*, presents a core priority to “better serve all of our students” (34) through a School Code of Conduct that standardizes behaviours and roles while asserting consequences and outlining processes for reporting and monitoring incidents of unacceptable behaviour. A needs-based model, focusing on individual student needs, aims to address issues around inclusion (27–28). To better connect students to post-secondary programs, the Department has formed a Transition Task-Force of public school educators, universities, and the community college.

The Department also aims to be inclusive of cultural, heritage, and belief diversity. Among the Departments measures of cultural inclusion is to address the “Achievement Gap” between groups. Here again, achievement will be assessed according to performance in math and literacy (30). Student health and wellness is approached through such noted commitments to more physical activity, socially sensitive curriculum and interagency and interDepartmental programs for mental health and addiction prevention (31).

In Pillar 4: *Excellence in Teaching and Leadership*, there is talk of “revamping teacher education and providing more professional development opportunities and classroom support” (Nova Scotia, 2015: 34). This pillar assures increasingly standardized training program for administrators, a framework for teaching standards, and reconsidered education training programs for teachers aligned to these standards. The Department also sets out measures for teacher accountability through a system of “Teacher Performance Management” (32) in standards, appraisals, and minority recruitment. The Department also aims to have the teachers’ union agree to an extended school year, targeted professional development funding, and removal of principals from the collective agreement (17).

6. Interpretations of the *Nova Scotia Action Plan for Education 2015*

Efficiency, universal literacy and numeracy, codes of conduct, and inclusion, are the kinds of initiatives that have guided education reforms throughout our industrialized modern history of public education, the result of a system that sorts students and learning by subjects as well as the linearities of age and time. Clarke argues that this is “an inadequate notion of education that fails to do justice to the complexity of our individual and social existence” (2012: 48). We are, after all, organic multisensory social animals living in a complexly woven social, environmental, technological, and economic landscape. The impact of these changes have been observed by one consultant where “teachers are struggling with the additional minutes for language arts and math and are not using these additional minutes in an integrated fashion, meaning that they have lost time they previously used for hands-on activities in science and art” (*name withheld*). With aims to meet new priorities along rigid timelines, it appears significant learning experiences are being sacrificed.

While the World Economic Forum anticipates “creativity, logical reasoning and problem sensitivity” (WEF, 2015: 24) will comprise the core set of cognitive skills sought by employers post 2020, Nova Scotia’s modernist model continues to shape students to serve more mechanical or technical capacities. The Department does identify the core competencies of creativity and innovation, however, unlike literacy and numeracy, these competencies are not integrated among disciplines. Rather, creativity and innovation are expected to be delivered through the arts – disciplines that are not, incidentally, available to all students in every year of school. Alternatively, if creativity and innovation are to be valued competencies, curriculum guides and teacher training could accommodate understandings and techniques that reduce obstacles and build pathways towards creative development. Indeed, taxpayers want to be assured their resources are being used effectively. Parents want their kids to be literate and numerically competent. And every citizen wants to be treated with respect while our collective resources work to cure social and economic disparities. Yet, it is another thing to assume that these are the only high priorities or even that modern education system can deliver them. Measuring student achievement in numeracy and literacy falls far short of measuring the quality and efficacy of an education system. By subordinating other ways of knowing to numeracy and literacy, are we respecting the drive for happiness, health, and fulfillment of all students? And, considering the growing complexity of our world, are we taking best advantage of our human capacity for imagination, creativity, and innovation? While testing, special programs, and codes of conduct speak to many of our desired skills and values, they do not assure them. Meaningful learning experiences; happy, enthusiastic, engaging, and caring teachers; proper nutrition; autonomy; and the promise of new skills – these factors should go further to shape educational success and civility than any rigid curriculum or codes of conduct might. To build highly effective cognitive skills in students we could consider programs that integrate the imaginative and fabrication

skills of the arts with the content, logical reasoning, and technical skills of other disciplines towards “defining a problem and solving it in a novel way within a particular cultural context” (Zimmerman, 2009: 386).

7. Assessing the Four Pillars through the Human Equation

The Nova Scotia *Action Plan of Education 2015. The 3R's, Renew, Refocus, Rebuild* presents its own tetradic equation (36 or see Figure 2). Their tetrad makes no claim to be an equation nor that what comes first is most important to the policy. Though, the visual of a Modern Education System in the top left position, might appear to support its stake its supremacy over the other pillars, the authors offer no rationality for their tetrad structure. Since the four elements have been identified, however, the next step towards being assessed by the human equation is to “match all of the elements to the corresponding mode of action”.

As Figure 3 models, since every domain of the educational field is expected to extend from, be displaced by, and bend to its posture, the Nova Scotia Modern Education System is, more precisely, situated as the retrieval or assumed posture. It provides the “firm foundation for change” and will not itself bend, change, or be displaced while it occupies the assumed posture of restructuring divisions, integrating, reviewing “efficiencies and effectiveness” and they will define and ensure “high-quality teaching, and strong leadership.” And, while it could be argued that teachers and educational leaders are the backbone of the system, here the modern education system will determine what a teacher and leader will be and do. The teacher, assuming a posture of bending joints, will have to accommodate the policies and procedures, students and parents, administrators and resources. To follow this through, for teachers without proper posture (or strategies) or adequate support, bent backs can *break*.

The Department’s notion of innovation in the curriculum, therefore, is not about the diversity of pedagogies or to necessarily propose innovative ways to engage students. To the contrary, it is found in efforts to have all students do more math without further disaffecting students who seek more diverse ways of knowing. Time, in particular, is being shaped to give more time with literacy and mathematics which will impact the autonomy afforded to student self-determination. Focusing on literacy is not necessarily about expanding literacies to visual, physical, or mediated forms. Rather, they refer to enhancing the fundamentals, making more “time for learning spelling, punctuation, and the formation of sentences and paragraphs” (23). Hands-on experiences will happen at home or in subjects focused on “innovation, creativity, [and] problem-solving skills” (160) – entrepreneurship and the arts.

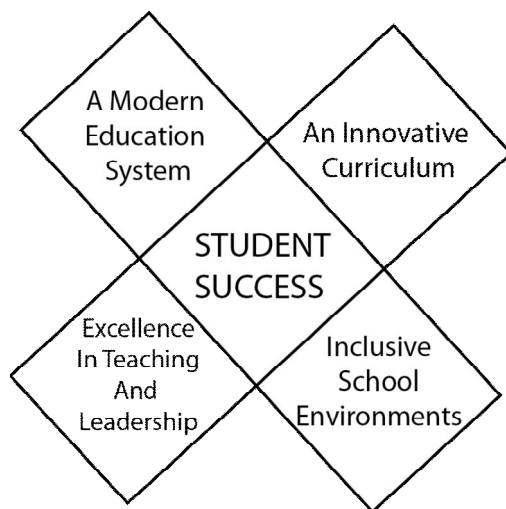


FIGURE 2 A TETRAD AS ARRANGED IN NOVA SCOTIA'S ACTION PLAN FOR EDUCATION, 2015. *THE 3R'S RENEW, REFOCUS, REBUILD*. (P.36)

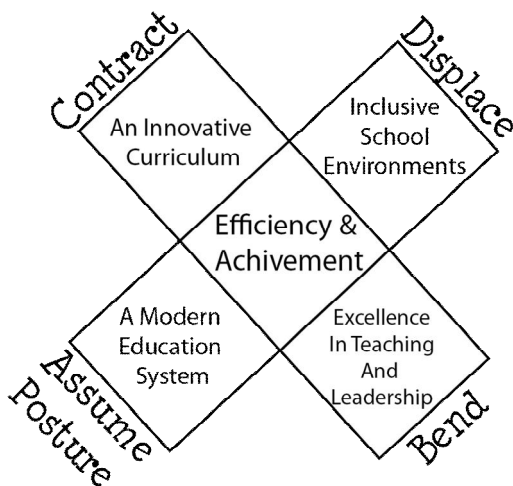


FIGURE 3 NOVA SCOTIA'S ACTION PLAN FOR EDUCATION, 2015. *THE 3R'S RENEW, REFOCUS, REBUILD*. REVISED ACCORDING TO THE HUMAN EQUATION.

As the current system is focused on curriculum and gathering data more than it is student centered, curriculum is fashioned by the Department, interpreted by the teacher and imposed on students. However, if teaching practices become standardized as proposed, the art of teaching and the breadth of human experience that could be shared in school will give way to more mechanized thinking. Somehow, the curriculum will have to be open to regular changes or enhancements in order to pull all of these strings together. For these reasons, the innovative curriculum isometrically contracts, forcing the Department's scope of ambitions to be managed by and accommodated through the curriculum.

If the curriculum succeeds in offering more math and literacy but fails to reach more students in a way that all students feel included, respected, and rewarded with a good education, then the Inclusive School Community runs the risk of being further subordinated or displaced. Being inclusive should accommodate differences and work to correct hegemonies of ability, race, gender and various ways of knowing — including the arts. At the very least, the students here will feel the brunt or rewards of these system wide reforms. As such, the inclusive school environment is in the quadrant to be displaced.

The Nova Scotia *Action Plan of Education, 2015*, when perceived through the human equation tells a story of system aiming to satisfy the needs of students and a provincial economy. In doing so, this story presents a system that places the politician's vision for modern education above that of teachers and students; teachers and leaders who need to bend or conform to mechanized or standardized values and practices; a curriculum model that seeks to subordinate all ways of knowing under the priorities of learning to the fundamentals of literacy and numeracy; and an inclusive school environment where the Department will determine what which students will be safe and well served. If students or parents do not feel safe or well served, they will likely be further displaced and seek other avenues to provide their education. Digital media is already filling this void. One meta-analysis of 50 study effects concluded that "Students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction" (U.S. Department of Education, 2010: xiv).

8. Seeking New Spaces for Education

Modernity has a tendency of dealing with diversity and uncertainty by establishing a place for the *new* within its existing framework or by dismissing it. In contrast, it is more likely that the rapidly changing highly technical, socially diverse, and conceptually challenging environments of the 21st century will be lead by those who are creatively adaptive and critically reflective improvisors (Corbett, 2011; Florida, 2013; Kelly, 2013). As such, modernity and its neo-liberal values provide little comfort to those who recognize its inability to bend to forces beyond its matrices.

Forming the comfort and habits of dealing with diversity, the unexpected, and change in education can come from transformative constructivist and critical pedagogies born of improvisation, empathy, and community. Empathy here may be as Heidegger conceived it as *being-in-the-world* where we engage with the other being or experience both phenomenologically and interpretively (Dahlstrom, 2010; VanManen, 2007; Vattimo, 1988). This “in-being” is to embody the nature of what we experience (Goble & Yin, 2014). Where a modernist might, for example, disinterestedly know visual art forms as an extension of “literacies”, an improvising phenomenologist might instead want to know such forms on their own terms. Both, however, know that new forms can not be nihilistically separated from its retrievals or what came before (VanManen, 2007: 12). Such approaches to learning communities of improvisation and empathy can be found in Michael Corbett’s concept of an improvised curriculum and Rene Jackson & Suzanne McCullagh’s articulation of aesthetic assemblages. Considering the pervasive presence of the space of flows, students and teachers could use tools to help accommodate and make sense of these new environments.

Knowing through Improvisation

Michael Corbett suggests we adopt a “curricular focus on improvisation rather than scripted performances” (Corbett, 2013: 4) which he thinks will “go some distance towards making schools more hospitable for rural, working class, aboriginal, and minority students” (4). A movement towards a more improvised pedagogy would serve us all as our future will require people in every field, from farmer through scientist, to creatively innovate solutions to the social, environmental and economic challenges before us.

Corbett acknowledges that as we are attuned to our modern environments, when we step into new spaces bringing the ones we know with us, it is in the spaces between our familiar and the new that we decide how to accommodate the new. We can make it fit in our existing structures, dismiss it, resist it or accept it.

For Corbett, an improvised curriculum exists in the new spaces formed at the intersection of structured knowledge and constructed knowledge. The structured knowledge is the established knowings that can be found in textbooks and traditional academic curricula. Constructed knowledge is that which is emerging from the challenges, opportunities, juxtapositions that comprise the new phenomena before us. Unable to leave our modernist roots behind, nor assume all new phenomena can fit neatly in our current languages, structures and knowings, through improvisation we can find a common ground.

Knowing through assemblages

A picture is not thought out and settled beforehand. While it is being done it changes as one’s thoughts change. – Pablo Picasso

Jackson and McCullagh (2015) offer another constructivist pedagogy where we may “recognize the classroom itself as an aesthetic composition” (188). They share

Deleuze and Guattari's conception that constructivist practices where *molar* rules and regulations, learning in subjects, and in blocks of time, or highly abstracted non-experiential teaching practices are contrasted with *molecular* knowings or transformations that come through *affective assemblages*. Like the interaction of molecules, constructivist interactions between teachers and students are movements between work and exploration where new meaning is assembled when the student and often the teacher are transformed (184).

Nurturing empathy, these assemblages are "a kind of interactive relationship that involve multiplicities, not just more than one individual, but individuals who are themselves multiplicities of different (heterogeneous) elements: desires, habits, capacities" (184). Allowing for affection to influence plans, to be transformative, teachers need to remain flexible, adaptive, and responsive to the changing environment and thoughts. Being transformative is humanizing and this free movement from one plane to another is what the artist does. The "artist alternates between the two planes almost simultaneously. ... Like the artist, the teacher responsively engages in assemblages, while simultaneously adapting the composition in relation to unfolding information" (187).

Perceiving the classroom as an aesthetic composition, allows teachers to organize learning experiences that consider the breadth of student experiences and knowings, their achievements and status, racial, gender and disability as well as the physical, temporal, virtual and multi-sensory conditions and spaces before them. Jackson and McCullagh remind us that Eliot Eisner also saw artists as constructivists, as giving "form to knowledge through aesthetic choices, and construct[ing] a type of aesthetic knowledge through the work they build" (188). Herbert Read and Eisner, they note, go further and insist that aesthetics should be the core of education. In teaching we compose aesthetic qualities to communicate, including in science and math, shaping ideas into stable forms.

9. Using the Human Equation to Construct an Education System that Disrupts the Status-quo of Modern Thinking

An economy based largely on mining and manufacturing is well served by a well-trained and otherwise passive workforce. The technologies, opportunities, and challenges of the 21st century pivot us from being an industrial society towards being a knowledge society. Now, we need to cultivate imaginative and creative capacity students to produce the bold innovations that will address the unprecedented economic, social, and environmental problems we face globally and regionally. By pushing the curriculum away from flexibility and towards an even heavier focus on literacy and numeracy, Nova Scotia does not disrupt the status-quo, it reinforces it. The Department appears to have overlooked the calls to make creative development a priority alongside cognitive and social development. Instead of a modern school system, a more post-modern school system that aims to humanize learning, accommodate the breadth of experiences and unpredictability

of our future and the subsequent need for an adaptive and creative populous, would embrace more sensory learning over learning through alpha-numerics.

Figure 4, a model for constructivist schooling in accordance with the human equation, places the student in the assumed posture position where the rest of the system would follow from their needs and ambitions. Students and teachers need to assemble and explore ideas in various spaces. The fixed spaces and times of schools can offer what and online media cannot — unmediated multi-sensory learning experiences with actual people. While the internet connects us indirectly, schools can make direct connections between people and communities. Schools are purposeful in developing human relationships as well as learning through tactile, visual, acoustical and kinesthetic experiences. The Department could, therefore, bend their joints to provide funding, resources, and facilities that would enhance rather than subordinate the unique capacity of direct learning experiences and transformative relationships between students and teachers.

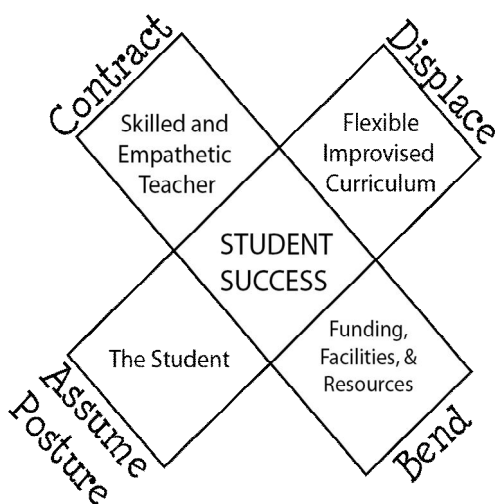


FIGURE 4 TETRAD FOR CONSTRUCTIVIST SCHOOLING IN ACCORDANCE WITH THE HUMAN EQUATION.

To take advantage of such sensory diverse constructivist environments, teachers would need to up their game. Isometrically contracting, pushing and pulling, organizing and composing the learning experience for students, teachers would need to be flexible, empathic, and respectful of the diversity students bring. They would need to be able to connect students with the skills and experiences they seek, something our communities and the *space of flows* can extend. The curriculum would have to be constantly adaptive to the characteristics of the classes and

communities, open to displacement through improvisation and be moulded by multiplicities of aesthetic assemblages formed through students and teachers of diverse ages, genders, cultures, abilities and experiences.

With the constructivist teacher contracting the other elements, the curriculum may be displaced. The skilled and empathetic teacher becomes the arbiter of the curriculum content, objectives and the methods of instruction. Instead of holding and distributing private knowledge, ideas and content are sought and brought forward by the class and composed through the teacher. Many teachers would acknowledge that we learn as much from the students as the students do from us. It would be in this sense that the student assumes the posture of directing their learning and pending transformations as aided by the teacher. The only element remaining in this field is that represented by the Department of Education. Beyond funding public schools, The Department currently provides curriculum documents, policy guidelines and standardized tests. By following the human equation, in a constructivist model, the Department would bend to support the needs of students as determined by educational professionals, not politicians. The Department could shift from producing curriculum, policies, and standardized tests toward funding and procuring excellent teachers, facilities, and resources.

10. Discussion

Our current students are shaped by (at least) two worlds. First, the modern world of divisions and the isolating and systematizing effects of abstract thought, efficiency, and the linearity of one clock-time. The second is found in the effects of digital media and the *space of flows* that obsolesce linear time and fixed spaces in exchange for layers of choice, divergent thinking, the multiplicity of knowings, and the interconnectedness of ideas, people, and places.

The Nova Scotia Action Plan for Education, 2015 poses as a complete system overhaul based on four pillars of change to the system, curriculum, teachers and leaders, and inclusion. It builds an education system in search of efficiencies, accountability and measurable achievements from their curriculum, teachers, educational partners, and students. They want teachers who follow their methods and conception of best practices. Their *Innovative Curriculum* aims to connect students with the current marketplace while ensuring that numeracy and literacy dominate the student's timetable. Inclusion is about making more groups of students feel welcomed, safe and equipped to achieve in school. As a uniting force, inclusion also resists the pressures of modernism that divide us.

McLuhan & Constantineau's *Human Equation* (2010) and subsequent *Science of Investigation* (2012) teaches us that Nova Scotia is, in fact, on track to build (or rebuild) a modern education system, even though their student population is increasingly informed and shaped by post-modern sensibilities and digital media. Considering the growing efficacy of learning experiences found in hypermedia network spaces and time, education systems and teachers may be well served to

critically observe and reflect on how they might harmonize these environments rather than subjugating them to their conventionally modern structures and beliefs. As online learning models and other alternatives in our digital media ecology improve, schools that fail to adapt to the demands of an evolving student population risk obsolescence as they increasingly lose their target audience. Considering that education is a critical responsibility of a provincial government in Canada – any changes to the system should result from broad evidence based research rather than a broad based survey of opinions as represented in *Disrupting the Status Quo: Nova Scotians Demand a Better Future for Every Student* (Nova Scotia, 2014).

The student centred constructivist tetrad is offered as an alternative equation toward a meaningful education for our diverse population in a growing digital landscape. It provides space for creative development to exist among other skills. At their core, Improvisation and aesthetic assemblages share the openness to and transformative potential of interactivity and newness. These qualities are both characteristic of creativity and are required to critically navigate through the opportunities and trials of a digital landscape. This model, though unlikely to be quickly adapted within a public school model, provides space and time for the development of STEM, rather STEA(arts)M, skills alongside other priorities that schools and teachers would be free to offer students.

11. Conclusion

Insisting students need intensive literacy and numeracy at the expense of other capacities, for all the reasons the Nova Scotia government has claimed, also declares that they have little faith in students to thrive through other means – to imagine and chart their own path outside of the institutions we have already created. This is to ignore that the world we are accustomed to, from our understanding of literacy to our concept of time, is changing at a breakneck speed. Twitter and similar online spaces, for example, are contributing to “a collapse of speech-based expectations and print-based interpretations. It’s a consequence of the oral-literate hybrid that flourishes online” (Meyer, 2015). Such a hybrid of language presents inconceivable permeations and consequences for how we perceive information in spaces worthy of creative and critical exploration (as twitter poetry or GPS art). Instead, by not understanding the impact of new media or adequately focusing on creative development in our schools, Nova Scotia is reinforcing a non-adaptive and unconscious civilization characterized by consumerist thinking where we continue to place our faith in anyone and anything but ourselves. Our neo-liberal, modernist, and capitalist structures set us up to be specialists requiring others to solve problems beyond our domain of specialization. Alternatively, if the assumed posture of public education started with the students and follows a more constructivist ontology, students may learn to focus their faith inwards – toward their own potential to overcome obstacles – rather than outwards

toward the power of the “specialists” and “experts”. Moreover, our digital media provides spaces to learn to information and processes that help us reach beyond our own area of specialization.

In this modern education system, our institutions – the large scale employers, small businesses, and our political institutions – set the terms for the curriculum to follow and serve. As such, those who can embrace their creative capacity and discover ways to liberate themselves from this power structure are a threat to our modern institutions, their order and values. More than a modern system, to be relevant and effective to students in a complex digital world, we need to consider a move past modern or even phenomenological and post-modern systems. Beyond categories. Student centred, empathetic, knowledgeable, and creative teachers working through supportive and data informed school systems may find more success adapting to the needs of individuals and society than a curriculum of accountability, rigidity, and conventional wisdom.

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BRAIN-BASED LEARNING FOR ACCELERATED ONLINE EDUCATIONAL PROGRAMS AS A FOUNDATION FOR RESISTANCE OF PREDATORY PRACTICES ON THE “TIME-POOR”

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ABSTRACT. The notion that we all have the same amount of time, the same resources and responsibilities to manage our own time, and are free to make personal choices about how we use our time in pursuit of education are brought under scrutiny in this paper. Much of what is known about the learning process, how the brain works and time investment appears to be ignored in the digital, networked environment. Therefore, several components of how the brain works (the cerebral cortex and episodic and semantic memory) are presented as a foundation for rethinking and resisting neo-liberal constructions of time and the Educational Industrial Complex, that prey on the “time-poor.” Technology based, online educational opportunities are typically consumption-based capitalistic enterprises that distort the perceptions of one’s access to time and the dialectical relationship between knowledge, education, and human potential. This distortion is partially related to the disjunction of biological learning and socio-economic structures of online education aimed at the disadvantaged. The “politics of time” and the “time-poor” are discussed as constructs of global neoliberal capitalism. The Educational Industrial Complex, as a set of capital-based enterprises that commodify learning, including accelerated online educational environments, is explored as predatory practices on the time-poor. Brain-based learning for accelerated online educational programs serves as a foundation and call for resistance and social change regarding predatory practices on the “time-poor.” The conclusion supports the notion that the neoliberal practice of treating education as a commodity encourages predatory marketing to those that are time-poor as well as enticing over-commitment into educational structures that may not incorporate what is known regarding brain-based learning.

Keywords: brain-based learning; Educational Industrial Complex; time-poor; global neoliberal capitalism; politics of time; predatory practices

1. Introduction

“It’s about Time.” “We all have the same 24 hours.” “Time is a precious resource.”

The objective for this paper is to show how this notion of “time” is a political economic construct of contemporary global neoliberal capitalism. In particular, I identify three neoliberal, political perceptions of time that are at the root of inequality: 1) that we all have 24 hours in a day, 2) that the individual is responsible to manage one’s time, and 3) that to make decisions on how to use one’s own time is a matter of personal choice. These three perceptions of reality (having time, managing one’s time, and personal choices regarding time), serve as an extension of global neoliberal capitalism where the perceptions regarding one’s “time” are manipulated and become distorted. In this paper, I highlight the politics of time – in particular, I reveal the cultural manipulation of time as socially constructed in a manner that reproduces traditional “imperial individualism.” I am using the term “imperial individualism” to refer to the neocolonial practice of imposing the ideology of individualism as a rationale or justification in the domination and control of others – both groups and individuals.

Within neoliberalism, “imperial individualism” is the constant focus to control the individual. Control over the individual is made possible through unconscious and insensible practices of defining reality. The poor, the working poor, the precariat, and workers in general, are socialised to be insensible (unconscious as well as conscious) to the ongoing and pervasive practice of imputing imperial individualism into the many aspects of social life (Standing, 2011), including a particular notion of “time” as a socially constructed idea. The result of this insensibility of imperial individualism leads many members of our global society to quietly accept the unfair distribution of resources – especially in the case of “time.” In particular, the current distribution of opportunities to education and learning can be understood by examining the ‘time poor’ and the political nature of time.

The construction of learning in a technological age involves an online learning environment that is presented as a 24/7 accessible environment as if “time” is always available to individuals to engage in leaning activities. Crary (2013), in describing the 24/7 environment in late capitalism, acknowledges that the “24/7 environment has the semblance of a social world, but it is actually a non-social model of machinic performance and a suspension of living that does not disclose the human cost required to sustain its effectiveness” (9). In this sense, the “social construction of time” and “time as a resource” can be studied sociologically as a manipulated construct within the structure of global neoliberal capitalism.

In describing what is meant by global neoliberal capitalism, Saad-Filho and Johnston (2005) write the following: “Nevertheless, it is not difficult to recognise the beast [neoliberalism] when it trespasses into new territories, tramples upon the poor, undermines rights and entitlements, and defeats resistance, through a combination of domestic political, economic, legal, ideological and media

pressures, backed up by international blackmail and military force if necessary” (Saad-Filho & Johnston, 2005: 2).

Examining the role of “time” as a territory manipulated by a global neoliberal capitalist practice allows the understanding of time poverty as it impacts those who strive to change their lives through educational attainment and the process of learning.

Defining concepts such as “time” allows sociologists to observe the social world by using a common symbolic language under which assumptions can be apprehended, constructed, and measured. Thus, theoretical concepts serve as a working nomenclature. By working nomenclature, I am referring to the equivocal properties inherent in concepts. Meaning is an outcome of discursive processes subject to power and politics. Each socially defined concept, such as “learning” and “education,” serves particular sets of knowledges and politics. “Time” is no different. Understanding how “time” is socially constructed, especially in terms of serving a set of knowledges and politics, allows for the identification of practices that need addressing to guide social change (discussion, resistance, and change).

Learning takes time and has been accomplished traditionally through social institutions. Much of what is known about the learning process (particularly how the brain works) and time investment is ignored in the digital, networked environment, and much of the knowledge on learning is no longer disseminated to those new to positions of teachings in the online environment. At the university level, learning is typically focused on the transmission of knowledge from knowers (professors) to learners (students). In the age of global neoliberal capitalism and networked technological devices such as phones, tablets, and laptops, have distorted the transmission of knowledge itself and is capitalised into a consumable product. Professors as “knowers” are subjected to a hidden agenda that situates them as mediators in this process where one develops capital for the educational system.

When constructs are identified, there is also a disservice to other knowledges, in what might not be identified. Argumentation, debate, data, and political combat are strategies used by all factions of sociologists to contest or uphold the constructed meaning of concepts even if they are flawed. When a particular concept like “time” is embraced in a certain manner, a particular picture is constructed and reified. One of the practices for sociologists is to examine all the possible reasons why a concept is defined in a certain way as opposed to another: to find out who benefits from such a perception of reality and who is harmed by the construction (Rose, 1997: 53–54). In this task, the notion of time is examined as political activity – “time” is understood and explored as territory subjected to traditional global neoliberal constructions of inequality and poverty – the politics of time. Specifically, this paper examines two main issues: the politics of time and the time-poor.

2. The Politics of Time

Knowledge regarding solar and lunar cycles and early technological devices such as the sundial and the clock are exemplary early forms of politically defining and organising “time.” With this came the control of defining one’s day on the basis of time: morning, noon, afternoon, evening, and night. In the age of global neoliberal capitalism, technological devices such as the smartphone, tablets, and laptops have contributed further to the manipulation of time and not just reinforcing time as 24/7, but transforming and subjugating traditional activities such as work time, school time, leisure time, and discretionary time to the 24/7 model (Shippen, 2014; Cottrell, 2014; Crary, 2013; Julkunen, 1977). Understanding the 24/7 model of “time” as political is a way to understand how time is socially constructed, manipulated, and controlled.

Socially Constructed Time

The 24/7 model has probably always existed but under different names and constructions that were based in different industries from various epochs. For example, notions from the antique night watchman to the modern industrial era of “shiftwork” or “swing-shift” emphasise the importance of certain industrial operations as necessarily requiring continuous operations (Shiftwork, 2013). The industries that have been known to require continuous operations in the industrial era were based in the military, utilities, transportation, and healthcare (U.S. Congress, 1991). In terms of resources, many industries in the industrial era, such as steel production and coal mining involved complex machinery where turning machinery on and off was difficult, took time, and hence was considered “costly.”

As communication and digital technology developed from asynchronous networked on-line communications to on-line synchronous, so did the adoption of the 24/7 model – from banking with ATMs and automated customer service lines that were information based, to the current model of distance education and learning (Bátiz-Lazo, Karlsson, & Thodenius, 2014). One difference between the industrial era of continuous operations based on “shift work” and the digital era based on computer networks is that many services are no longer only on-line real-time networks, but also automated and digitalized with the 24/7 model. Thus, the notion that having a human worker available 24/7 is not necessarily the case. Having access to recorded information, computer generated information, or information posted on the internet servers, came to be constructed as part of the 24/7 model. The 24/7 model conflated accessibility of information with access to workers with knowledge and information so it is no longer required for workers to be available for shift work, the 24/7 work schedule, or to actually modify one’s internal clock or biological circadian rhythm.

This construction of time as 24/7 is serving as a model for the education industry – learners are faced with the idea that learning can take place 24/7. The notion of accessibility of an online class is conflated with information through an educational website or online learning platform and actual access to a teacher or

professor as a worker in the “knowing” industry. Such constructions of time are industry-based and constructed within the current era of global neoliberal capitalism. This occurs by collecting capital on the basis of potential time availability in the 24/7 model. In the education industry, capital is used to secure access to virtual products that could result in learning; where “knowing” is conflated with access to knowledge; and achieving an educational goal takes a significant amount of both capital and time availability. This is the basis of manipulating constructions of time availability.

Socially Manipulated Time

Access or availability to one’s time is the most common type of socially manipulated time. To understand how time is socially manipulated in learning environments connected to the education industry, the focus of this section is on describing the following dimensions of time: wake time versus sleep time, discretionary time versus scheduled time, and work time versus free time.

Most people require a daily ration of approximately eight hours for sleep in a 24 cycle – this is one third of total time available. The 24/7 model rarely acknowledges that sleep is a necessary element of human functioning. It is no wonder when “sleep” is searched on the internet one can discover over 800 million links with 47 million of those links on “sleep disorders” and about 8 million links on “sleep deprivation” (these numbers were generated from a google search in October 2015). It seems that societal developments have disrupted our sleep patterns. Changes in paid employment, personalization of electronic communication and entertainment devices, the expansion of hours in which stores, gyms, and other facilities are open to the public, as well as the increase privatization of means of transportation may contribute to disruptions in access to sleep and sleep patterns. In unraveling the mystery of sleep duration dynamics, Michelson (2014) shows how common conceptions that people sleep less is not supported by “time-use” research. Michelson (2014) finds sleep time has not changed significantly over time. However, his research does find that “multitasking plausibly accounts for stress generally imputed primarily to sleeplessness” and that “both the amount and content of multi-tasking impact directly on feelings of time crunch” (Michelson, 2014).

This indicates a manipulation in the social construction of time availability and a direct result of unsettled feelings of stress related to the 24/7 model of time, which misrepresents the time one has available for different kinds of task. The typical person only has 16 of those hours in which to be active with work, travel, and maintenance such as bathing, dressing, eating, and cleaning. The 24/7 model is a global model to tap into potential new markets in different time zones but is manipulated by capitalists in marketing one’s goods and/or services. The marketing tactics is to manipulate perceptions to represent that access on an individual level based on individual behavioral practices.

With new kinds of networked technology, information and knowledge industries attempt to further manipulate constructions of time to find more markets for their products. One example is online publishing where what is published on such sites as Twitter, YouTube, ifunny, Tumbler, Facebook, and a variety of online news apps, requires workers to consider working when the work is available. Professional workers in this industry are to consider manipulating information 24/7 in a “timely” manner to account for behavioral practices of customers using their apps (Cottrel, 2014).

Global patterns of information streams are activated instantaneously when something get posted that captures the global attention of users. Users then share and further distribute this information. Conceptual terms to describe practices in this industry are developed. For example, terms such as “going viral” or “trending” are two terms that have meaning in the distribution of media through social network sites. This indicates that some streams of information are quickly spread globally through multiple apps on smartphones, tablets, and laptops. Timing and the manipulation of time is more than just a manipulation of consciousness, it is subjected to elements of control.

Socially Controlled Time

Constructing and manipulating time is part of a larger project of social control over time such as the traditional imperialist practices of colonialism. In virtual and digital environments, and in the information and knowledge industries, the control of time is similar to traditional practices of control and oppression. Jandrić and Kuzmanić (2015) describe “digital postcolonialism” and identify the digital colonialists as “white, middle class, and male” who have “made even larger fortunes” than traditional colonialist – those who usurped lands, dominated and oppressed native peoples, and instituted cultural genocide. Colonialism contributed to an overall control of life patterns or a “rhythm of life.”

The rhythm of life and total time available are aspects of what Julkunen (1977) referred to as “social time” where the significance of “time” as a category is recognized as having an impact on the “planned development of advanced societies.” According to Julkunen (1977), “the rhythm of life in highly developed societies is based on an extreme, exact measurement of time, a precise timing of activities, and people’s constant awareness of time. Measuring time and accounting for one’s time is directly related to the structure of society and is planned to divide society into the haves who control their time with the have-nots where their time is controlled by others.” Julkunen (1977) recognized the ideological element in which “(t)he masses were educated to appreciate time.” In this sense, “time” is a commodity that results in large numbers of people experiencing “time poverty” or moving into the ranks of the “time poor.”

3. Time Poor

Vickery was one of the first scholars to identify “time” as a resource that can play a significant role in understanding the distribution of resources. In her article, “The time-poor: A new look at poverty,” Vickery (1977) she identified the distinction of difference in regards to time as a resource that disproportionately affected households based on the number adults in the household. Her emphasis was on the necessity of both time and money that was required for home production that contributed to the overall well-being of household members.

Kalenkoski, Hamrick, and Andrews (2011) examine “time poverty” thresholds in the US population and found that the time burden is not correlate with income. In regards to time poverty, Kalenkoski et al. (2011) define “time poor” as individuals “that do not have enough discretionary time to engage in leisure, educational, and other activities that improve well-being” (130). They use research that describes the lack of discretionary time to participate in “customary leisure activities” as resulting in a form of social exclusion. In this description, social exclusion of the poor because of lack of resources includes not only lack of financial resources, but resources such as time.

In the online educational environment, not having time to get online results in social exclusion. Not having time to listen to online lectures, to watch a film that is linked, or not having time to participate in a threaded discussion alienates a student in the online classroom. Additionally, not having time to participate results in missed opportunities to learn and gain knowledge as well as in potentially failing a class resulting in the financial loss of having paid for a class that one has no time to actually participate.

There are a number of social groups that suffer from time poverty. Employed individuals engaged in childrearing, working parents, are like to suffer from various aspects of deprivation in terms of time poverty (Harvey and Mukhopadhyay, 2007). The amount of deprivation that exists increases with adding in other forms of so called “discretionary activities” related to the information and knowledge industries such as increasing one’s education or professional development outside of the employment setting. Keeping up-to-date on one’s profession, new technologies, and changing or shifting educational requirements (such as certifications, licensing, or professional development credit) are activities to further divide the workforce. Additionally, these activities are many times situated outside of employment and encroach into one’s discretionary time (Sullivan and Gershuny, 2004).

Folbre (2009) examined time use and living standards by focusing on subjective and objective measures of living standards. Objective measures of “hours of leisure” is distinguished from subjective measures of what makes up “leisure.” The variation in measures of quality leisure time differs significantly in the literature (Folbre, 2009). For example, the interconnected nature of one’s time dedicated to household production and other non-market labor is difficult to separate out when attempting to define a standard of living that includes leisure time. Free time,

discretionary time, and leisure time are not standardized conceptions included in measures of poverty.

Spinnery and Millward (2010) illustrate the “multidimensional nature of poverty” from a “public health and social policy perspective. They focus on income and “time wealth” and look at subjective assessments of stress and perceived barriers to participating in regular physical activity. Once again, time poverty was found to be more of a barrier to activities that improve health and well-being rather than income poverty (Spinnery and Millward, 2010).

Notions of “time” and nonmarket labor linked to household well-being are examined in the research in terms of inequality, standards of living, and poverty. For example, Cantillion (2013) examined the difference of living standards of spouses within a single households living in Ireland. Her focus was on methodological importance of including non-monetary indicators such as possession and access to certain goods and services as well as control and management of household resources. Although her study does not include indicators of free time, leisure time, or discretionary time, acknowledging the importance of non-monetary indicators as related to living standards is significant and creates a pathway to examine time poverty.

Handa (1998) examined female-headed households in Jamaica and the consumption of leisure as a measure of time poverty. Although in general, Jamaican female heads of households do experience more poverty than their male counterparts, Handa’s (1998) study compared time poverty of female-head of households with male heads of households and did not find any significant difference. This seems consistent with Kalenkoski et al. (2010) study where they found not significant correlation between household income and discretionary time or time poverty.

It seems logical that both men and women living at the lower end of the economic scale suffer from similar levels of time poverty; it is at higher levels of the economic scale where distinctions in time poverty are identified. However, Chatzitheochari and Arber (2012) examine British workers and find significant inequalities in the distribution of time poverty on the basis of class and gender. The role of “time” as a territory manipulated by a global neoliberal capitalist practice as it impacts those who strive to change their lives through educational attainment and the process of learning intersects with issues of class and gender. Chatzitheochari and Arber (2012) examine various configurations of time poverty separating out time spend on weekdays and weekend days. They found that working women in their study “experience multiple and more severe free time constraints, which may constitute an additional barrier for their leisure and social participation.”

Chatzitheochari and Arber (2012) acknowledge a number of classical and contemporary theorists that “conceptualized free time as an indicator of societal progress and freedom, a ‘primary good’, and a key element for the functioning of civil society and individual well-being.” Additionally, they mention the Universal Declaration of Human Rights as recognizing “everyone’s right to rest and leisure.”

The “time famine thesis” and the “relative deprivation of free time resources” is examined along with the changes in the economic structure that resulted in “acute diversity in the timing of paid work among British workers, and to a corresponding erosion of the ‘standard’ Monday–Friday, 9–5 working week.” Changes in work is the impact to free time in rest and leisure is well document in their study. They focus on “shift work” that was discussed earlier, the inclusion of “evening/weekend work” and “flexible work,” and the inclusion of the work lives of “educated and high-income workers in dual-earning families that are most likely to be ‘leisure stricken’ in today’s post-industrial societies.”

While the control of time was the hallmark of the industrial era, it seems that time poverty is a condition of a digital, networked era. In the information and knowledge industries of the postmodern era, time poverty is prevalent across the spectrums of class and gender. With this presentation and review of the literature on the “politics of time” and the “time-poor” as constructs of global neoliberal capitalism (Sullivan and Gershuny, 2004), the path is open to explore the role that the online education plays in manipulating and distorting the perceptions of one’s access to time. In this sense, it seems prudent to focus on technology based, online educational opportunities that are typically consumption-based capitalistic enterprises. In the postmodern era, this is referred to as the Educational Industrial Complex (Giroux, 2014), which commodifies learning, including accelerated online educational environments that prey on the time-poor from various economic sectors.

4. The Dialectics of the Educational Industrial Complex

The Educational Industrial Complex is the set of social institutions that encompass all market relations pertaining to learning, teaching, and certifying knowers (Giroux, 2014). The neoliberal emphasis on market efficiency and accountability has moved into public life and civic institutions, especially public education (Aguirre and Simmers, 2012) and educational institutions in general including proprietary and state online education. The Educational Industrial Complex is a set of capital based enterprises that commodifies learning through various means including accelerated online educational environments that prey on the time-poor from various economic sectors. Technology based (online) educational opportunities are typically consumption-based capitalistic enterprises that distort the dialectical relationships among knowledge, education, and human potential through the Educational Industrial Complex.

Technological inventions related to global instantaneous communications and the sharing of information via the internet have been defined as a disruptive technology (Rose, 2012) that provides opportunities to rethink distance education (Rose and Hibsman, 2014) and inequity based on education attainment (Rose, 2015). Additionally, this disruption in the educational structure has created a means in which the terrain of online education, knowing, and information has been

subjected to an explosion within the global neoliberal capitalism and insertion of the for-profit business model into public values of education.

The disruption of education is driven not just by new technologies, but by what has been called the “consumer need pull” (Jones, 2006). The consumer pull in education is the desire by students to want and seek out online opportunities for education as well as the “acceptance” to teach in the online terrain by teachers and faculty. The power of the Educational Industrial Complex is evident in the means in which online teaching moved to forefront of higher education by exploiting precariously employed PhDs.

Standing’s (2011; 2014) description of the precarious class is easily applied to the high level of PhDs who are under-employed in precarious faculty positions (non-tenure-track, adjunct positions, or at-will full-time positions). In a Marxian sense, state and proprietary universities have moved away from relying on a tenured faculty and participate in the exploitation and manipulation of a disposable, “reserve army” or “surplus labor power” of faculty in the accumulation of capital (Marx, 1987) under the guise of fulfilling the online teaching needs (Standing and Jandrić, 2015).

The dialectical relationships that are developed between students, teachers, online technology, business models, capital accumulation and exploitation, and the 24/7 model of global neoliberal capitalism is best understood using Jandrić and Kuzmanić’s (2015) exploration of digital postcolonialism. Their work, emphasizing “the relationships between information and communication technologies and the society” and their description of the networked society as “a battlefield of various world-views, cultures, interests, and social forces” (48) gets to the heart of what is meant by the dialectical relationships of the Educational Industrial Complex. In learning environments, one of the many elements that gets sidelined is the knowledge and science about what we know regarding how humans learn that is based on neural science of the brain and psychology on learning and memory.

5. Basic Components of Brain-Based Learning

The movement to incorporate “brain-based learning” began as a buzz phrase in the educational industry in the late 1990s and early 2000s with books like Jensen’s *Teaching with the brain in mind* (1998/2005) and Zull’s *The art of changing the brain: Enriching teaching by exploring the biology of learning* (2002). Neural science and the knowledge about the brain changed significantly in the 1990s both with new imaging technology and new technological tools to map the brain. Discoveries regarding the understanding of the brain entered several fields of study beyond science.

In particular, the two fields of study influenced by the mapping of the brain were cognitive psychology and teacher education. The focus on the brain in learning environments had been commodified to incorporate what we know about

how the brain processes information and knowledge and how understanding this process can increase learning. Pedagogies that focused on multiple intelligence and active learning strategies emerged and had been based on knowledge regarding the structures of the brain (the cerebral cortex) and how memories are formed and manipulated in the brain (episodic and semantic memory).

When the online teaching movement took higher education by storm, much of the brain-based movement in learning was not only ignored, much of the knowledge was no longer disseminated to those new to positions of teaching in the online environment. A veiled separation seems to have been put into place. Neural science and knowledge regarding brain functioning structures was relegated to fields in STEM (science, technology, engineering, and math) and well-funded research areas in the university while fields heavy in teaching or regional schools, colleges, and universities were defunded and utilized as a kind of “cash cow” to fund STEM fields.

In this sense, the basic knowledge of brain structures as knowledge that is necessary for instructors engaged in online teaching and learning was severed from the practice of online education. Instructors in precarious faculty appointments were given little flexibility in the delivery of courses at proprietary universities. State universities, struggling with a means to impute quality controls on online courses, utilize the precarious appointed faculty to usurp a market share currently cornered by proprietary universities – both entities preying on the disadvantaged and the time poor. Upper-level and lower-level administrators faced the quest for quick revenue outlets and resorted to preying on the reserve labor force of MA and PhD holding workers (the academic precariat) and the time poor seeking an education to improve their economic situation. Treating online education as capital generating element of the industry meant sidelining basic knowledge of how learning happens for humans.

Placing the basic knowledge that is well established in neuroscience and psychology at the forefront of contesting the Educational Industrial Complex is essential. In this sense, it is important to remind readers on the general educational knowledge – the “common sense” knowledge of how the brain works in terms of learning and memory. The elements of the cerebral cortex and the focus on the role of the four lobes sensory input, plasticity (the adaptation of the brain), and the coding of sensory input into memory are significant processes in learning. It is important to be mindful of the components of memory, particularly the distinction of semantic and episodic memory. Lastly, connecting this knowledge of the brain with brain-based learning links what we know about the brain with learning in the online setting. Specifically, the goal is to focus on how this knowledge can be used in accelerated online educational programs as a foundation for resistance to the current predatory practices on the “time poor.”

6. The Cerebral Cortex

The most basic debate in neuroscience and the field of education is the link between the mind and the brain (Zull, 2002). Pedagogies many times take a political stance to focus on either what physically happens in the brain to enhance learning or what happens in the mind to manipulate knowledge and understanding. Eccles (1990) describes the functioning of the cerebral cortex and the issue of the “mind-brain” interaction in a different manner. He describes part of this interaction in terms of outer sense, inner sense, and the psyche. The outer sense includes senses such as light, color, sound, smell, taste, pain, touch, and perception; the inner sense includes thoughts, feelings, memories, dreams, imaginings, intentions, and attentions; the psyche includes the self, the soul, and will.

This construction of the cerebral cortex is similar to the mapping of the brain into four different lobes that specialized in the processing of sensory information: frontal lobe, parietal lobe, occipital lobe, and temporal lobe. The frontal lobe being responsible for much of our motor skills including movement required for speech; the parietal lobe is responsible touch sensation; the occipital lobe is responsible for sight; and the temporal lobe is responsible for hearing. Sur and Rubenstein (2005) describe the interconnectedness of the various parts of the cerebral cortex involved in sensation, movement, and cognition (thinking). Both Sur and Rubenstein (2005) and Eccles (1990) work emphasize the inter-connections of the different parts of the cerebral cortex and the ability of the brain to adapt to changes in input.

To describe this adaptation, Eccles (1990) uses the knowledge of quantum physics while Sur and Rubenstein (2005) use the language of patterning and plasticity. All information that enters the cerebral cortex is typically coded in memory. Historically, memory was described in terms of short-term memory (STM), working memory (WM) and long-term memory (LTM) (Baddeley, 2001). Computer models of memory, such as RAM (Random Access Memory) and storage memory is utilized as a model in the understanding of human memory. In particular, LTM was divided into declarative memory (or explicit memory) and non-declarative memory (or implicit memory) (Baddeley, 2001). Declarative memory was further distinguished into two forms of memory: semantic memory and episodic memory (Tulving, 1993). The theory of episodic and semantic memory focuses on the elements of function.

Semantic Memory

According to Tulving (1993), “Semantic memory registers and stores knowledge about the world in the broadest sense and makes it available for retrieval.” Information that is stored in semantic memory allows individuals to think about things that are not currently present. The process of “representation” is used to think about those things that are not currently in ones senses. Semantic memory is a critical part of one’s knowledge base that can be manipulated to understand other similar knowledges.

Episodic Memory

The experience of recalling a past event and “reliving” that experience is the basis of episodic memory (Tulving, 1993). Ezzyat and Davachi (2011) conducted a number of experiments to examine the role that narrative readings might have in creating episodes that would be stored in episodic memory. They found that there were some strategies of “event-activity” that enhanced long term memory. Of particular significance was the binding of episodes to other episodes as a form of integrating information.

Eichenbaum and Fortin (2003) found sequencing of events was very significant in creating episodic memories. Additionally, Conway (2001) examined the context of autobiographical memory in sensory-perceptual episodic memory. Conway (2001) concluded that by connecting episodic memories with working memory and long term memory could be used in consciously formed memories. These findings can be utilized in regards to the structures of education and perhaps incorporated into the online educational environment.

7. Brain-based Learning

The knowledge of brain-based learning influenced teaching strategies by encouraging a variety of pedagogies that focused on active learning. Active learning strategies include multiple aspects of brain functions from motor skills, hearing, speaking, to cognitive processing. Most importantly in regard to learning is the aspect of memory – short term memory (STM) as well as long-term-memory (LTM). STM includes sensory knowledge that one is actively thinking about and using but lost once it is no longer active; LTM includes knowledge that is stored and can be recalled at a later time usually at will.

If multiple parts of the brain were actively engaged in the processing of knowledge, then that helped move knowledge from STM to LTM. Within LTM, episodic memory would then influence semantic memory enhancing the link with processing and thinking about new knowledge.

Brain-based learning is the process of utilizing what we know about the sense of self or the psyche (the mind), about how we learn and process information, and about the imposition of neoliberal capitalism into educational. Treating education as a commodity encourages marketing to those that are, in fact, time-poor and utilizes past episodic memories of school and schooling to encourage engagement into educational structures that do not necessarily incorporate what is commonly known about how the brain works in learning. Misrepresentation of time creates situations where one signs up for online 24/7 educational experiences but has little time to actually engage in online activities to learn material – unable to activate semantic or episodic memory structures into the learning process.

The expansion of online learning university courses, open-courses, or massive-open-online-courses, has exploded onto the learning environment. Yet, significant investigation on the outcomes of online learning as compared with onsite learning

is limited with conflicting results (McDonough, Palmerio Roberts, and Hummel, 2014). While hundreds of thousands of people intend to take a free online class from some of the top universities, very few actually complete these classes (Reich, 2014).

Varao-Sousa and Kingstone (2015) investigated whether memory and mind wandering differ between a traditional classroom and a classroom where the lecture is presented via pre-recorded video. They found that “memory performance was significantly higher in the live session compared to the Video session” (8). This suggested to them “that the acquisition and retention of the lecture information benefitted from having the lecture delivered by a professor who was physically present in the classroom” (8). The knowledge and science about what we know regarding how humans learn that is based on neural science of the brain, as well as knowledge from fields such as psychology (such as learning and memory) and sociology (such as social interaction) is ignored when Global Neoliberal Capitalism and Hegemonic consumption patterns take precedence in the educational institutions.

8. Global Neoliberal Capitalism and Hegemonic Consumption Patterns

Exploring the link between brain-based learning, time poverty, and the global neoliberal capitalist nature of the Educational Industrial Complex can be accomplished by examining traditional time analysis studies and hegemonic consumption patterns. Large data bases show how people spend their time, and allow the identification of time consumption patterns and education attainment.

Education is many times thought of as form of “social entrepreneurship.” Bloom (2009) states that “social entrepreneurship involves pursuing highly innovative approaches to addressing social problems and doing so in an opportunistic, persistent, and accountable manner.” Freidman (2013) in describing the “budding revolution in global online higher education” states “nothing has more potential to lift more people out of poverty – by providing them an affordable education to get a job or improve in the job they have.” In this sense, education is viewed as a panacea to lift one’s self out of poverty (Cuban and Jandric, 2015)

Unfortunately, many state universities are charged with alleviating the shortage of state funding for educational institutions (especially marginalized regional institutions, universities, and learning centers) by utilizing the online delivery system to prey on both academic precariat (non-tenured, precariat faculty) and time-poor students. While funding has been cut, the practice of seeking to enhance profit or streamline budgets has not worked to limit high administrative salaries. The online environment has been used in a very opportunistic and “anti-socially conscious entrepreneurship” manner consistent with global neoliberal capitalism. While education is believed by many to be the means in which to alleviate poverty, many educational institutions are playing a major part in the perpetuation of poverty by a half-hearted committed to engaging the time poor in online venues for

educational advancement. The covert manner in which consumer marketing practices influences hegemonic consumption patterns serves as a means to allure the time poor into seeking a college degree or advanced college degrees when one, in fact, may have little time to devote to one's studies due to family and employment obligations.

The Bureau of Labor Statistics, in their American Time Use Survey (2014), identifies where employed persons age 25 to 50 with children typically spend their time. It is found that the typical working parent has very little unaccounted time (1.7 hours a day). A full-time university/college student spends very little time on educational activities on a daily basis (3.3 hours a day). Time spent for the college students on leisure and sports is approximately four hours with another 2.4 hours spent on "other" activities and an average of 2.5 hours in employment. The data shows that most individuals, whether full-time college students or working parents, have very little down time to truly push one's brain and work on own education.

In glamorizing the impact of massive open online courses (MOOCs), Friedman (2013) states "Nothing has more potential to unlock a billion more brains to solve the world's biggest problems." While no one can argue regarding such potential, the fact is that there is a lot of profit in many non-profit MOOC enterprises that seems just as exploitive as selling poorly constructed "knock-offs" in a back ally.

9. Call to Action: Resistance and Social Change

There is potential for accelerated, online educational programs to be an agent of change and bring about realistic opportunities to the disadvantaged and the time-poor. Bjork and Kroll (2015) found that conditions of learning that pose challenges to the learner (i.e., difficulties in the learning process) actually served to help learning and memory in terms of retention and transfer of knowledge. The online classroom and online work should include challenges that require thoughtful engagement and challenge learners. The online classroom should include elements of real-time, online interaction beyond merely watching a pre-recorded video or reading a text, watching a 10 minute video, and then taking a 4 point multiple choice quiz until one achieves 100% accuracy. Unengaging, busy-work practices can often be found in "canned" courses or self-paced, mechanically structured coursework. Just as brain-based learning activities encourage small classrooms with engaging instructors or professors, the online environment can be reimaged. This paper is a call to fund on-line real-time instruction with a small manageable number of students and accountabilities to the time investments that result in real learning with meaningful social interaction.

Advocates for the time-poor should encourage realistic time-management strategies in the scheduling of online courses. Precarious faculty needs to move into the folds of secure employment that allow for both flexibility in course design as well as accountability beyond merely "quality-matters," rote-type measures. Where can one find these advocates? It can start with those within the educational

structures. The Educational Industrial Complex is embedded in global neoliberal capitalism. The practice of treating education as a commodity is twofold. First, it encourages predatory marketing practices to those that are in fact time-poor. Second, it uses past episodic memories of school and schooling to encourage engagement into educational structures.

These practices do not necessarily incorporate what is commonly known about how the brain works in learning. Social action by students and faculty as well as social entrepreneurship is needed. A first step is to bring awareness of the predatory marketing practices aimed at the time-poor. The second step is to seek out guidelines and policies to limit such practices. The third step is to use what we know about neuroscience of the brain, what we know about psychology of memory and learning, and what we know about sociology of meaningful social interaction with teachers, professors, and students. At minimum, we should be mindful of the work of Giroux (2007; 2013; 2014) and take heed by socially constructing our online schools, our virtual classrooms, and the social interactions with teachers as a public good.

Dividing our youth into those that are classically educated and those that have suspect online education is detrimental. Deconstructing a neoliberal capitalist enterprise is difficult, but not impossible. Just as many seek corporate responsibility (Rose, 2013), all of us need to seek social responsibility from the Educational Industrial Complex. Such a task is difficult, if not impossible especially in light of the growing precariat groups within the educational industry. Giroux argues that seeking such responsibility is a contradiction in its own right – McLaren would go further and say that this is impossible. This is the starting point of McLaren’s revolutionary critical pedagogy – the idea that you cannot expect this from the Educational Industrial complex, and therefore need to disrupt it on a much more fundamental level (McLaren and Jandrić, 2015).

10. Conclusion

The notion of “time” is a political economic construct of contemporary global neoliberal capitalism. Understood and explored as territory subjected to traditional global neoliberal constructions of inequality and poverty, the politics of time and the time-poor is interrogated on the basis of several basic components of brain-based learning. It is concluded that the basis for rethinking and resisting neo-liberal constructions of time and the Educational Industrial Complex that prey on the “time-poor” members of our society is to revisit established, scientific knowledge about the human brain and brain-based learning. This is especially important in our digital, networked era whereby accelerated online educational programs take advantage of those with little or no free time.

The three neoliberal, political perceptions of time (that we all have 24 hours in a day; that the individual is responsible to manage one’s time; and that to make use-value of one’s time is a matter of personal choice) are ideological manifestations

manipulated as hard set realities rather than socially constructed realities. In this construction of reality (having time, managing one's time, and personal choices regarding time), the perceptions regarding one's "time" are manipulated and distorted. Additionally, this paper clearly highlights the politics of time – in particular, it reveals the cultural manipulation of time as socially constructed in a manner that reproduces traditional "imperial individualism."

When online teaching and the mass explosion of online educational opportunities disrupted higher education, much of the well-established scientific knowledge regarding brain-based learning and memory is rarely disseminated to those new to positions of teaching in the online environment. This research clearly establishes the importance of focusing on how the brain works and brain-based learning for accelerated online educational programs as a foundation and call for resistance and social change regarding predatory practices on the "Time-Poor." The conclusion supports the notion that the neoliberal practice of treating education as a commodity is twofold: First, it encourages predatory marketing practices to those that are in fact time-poor. Second, it uses past episodic memories of school and schooling to encourage (manipulate) engagement into educational structures that do not necessarily incorporate what is commonly known about how the brain works in learning.

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THE CHANGING CHILD

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ABSTRACT. This paper develops conceptual models of (i) repressive temporality of common sense and (ii) emancipative temporality of critical thinking. The main focus of the text is the concept of the child treated as common sense, as well as a subject of critical consideration. The central philosophical claim is that, from within the perspectives of common sense, a child is understood as a passive object that requires formation. Such a perspective, in contrast to perspectives of critical thinking, is incapable of considering a child's own activity (plasticity), which is necessarily involved in the process of her formation. This paper suggests that even the most advanced critical theories are not immune from the repressive temporality of common sense. However, it is proposed that the very shift from childhood to adulthood might cease to be understood as an event that takes place just once. Instead, it might function as a transition that takes place continuously. Such a change of perspective has consequences for the reshaping of the concept of education, unveiling it as a purposeless process without an end.

Keywords: childhood; common sense; repressive temporality; emancipative temporality; critical thinking; learning; Freire; plasticity; Nietzsche

The Changing Child

In Gramsci's critical theory, "common sense" refers to a set of generally held assumptions and beliefs shared by a particular society. Common sense consists of uncritical ways of perceiving and understanding the world. In a political sense, it comprises ideological forces that impose themselves in the guise of self-evident truths. The core of common sense consists of an uncritical desire for fixed certainties. For Gramsci, revolution is accomplished through the development of a new framework – a "counter-hegemony" (1987).

Based on Gramsci's theory, Deleuze says that common-sensical thinking is based on the model of recognition. Within that model, agents operate with memorised meanings of words: "this is a table, this is an apple, this is the piece of wax" (Deleuze, 2004: 135). Articulation of memorised meanings is the opposite to

questioning. Common sense is a rigid structure, where meanings of concepts are seen as self-evident – and therefore unchangeable. Deleuze presents a counter-commonsensical point of view. Deriving from Nietzsche, he points out that the phenomenon can have “as many senses as there are forces capable of taking possession of it” (2006: 134). In this context, Deleuze argues that “a thing is sometimes this, sometimes that” (2006: 4). Therefore, there is no phenomenon, word or thought, which does not have a multiplicity of senses.

Thus, the same phenomenon may be captured by different forces. In practice, it can be said that any word – while keeping the contours of its definition – can serve either emancipative or repressive forces (an initial Deleuzean reading of Nietzsche suggests a distinction between active and reactive forces). Further elaborating Deleuze’s thoughts, it can be said that words can be seen either as unchangeable, or as malleable. A common sense perspective is only capable of seeing concepts as unalterable, while a critical perspective (understood as an opposite of the commonsensical perspective) reveals its changeability.

Common sense can be understood as a repressive apparatus. To reveal its repressive nature, we might turn to Nietzsche’s understanding of mastery and slavery. In Nietzsche’s philosophy, masters differ from slaves by their ability to “give names”. Under the name of slaves, Nietzsche did not mean those who are oppressed. According to Zupančič, distinguishing between masters and slaves, Nietzsche was rather talking about two types of mastery (2003). Those who represent the first type of mastery possess the ability to give names (they say “this is so-and-so”), while those who practise slavish forms of mastery tend to fight for the interpretation of names. The latter type of mastery is far more tyrannical than the first.

A slave’s worldview is not capable of comprehending processuality, because it understands meanings of words as unalterable. For slaves, the meaning of words is a reason to fight; for masters, it is an occasion to get involved in the generative process of naming. Hence, a slave’s attitude towards meaning is repressive, while a master’s attitude towards meaning is generative. Another Nietzschean name for a slave’s worldview is nihilistic Christian morality – where life interprets life against life. A slave’s attitude corresponds to a perspective of common sense, while the master’s attitude corresponds to a critical perspective.

The Nietzsche’s distinction is correlated with his thoughts on education as self-liberation. In *Schopenhauer as Educator* Nietzsche states: “Our educators can be nothing more than your liberators. And that is the secret of all education: it does not provide artificial limbs, false noses or eye-glasses – on the contrary what could provide these is merely pseudo-education. Education is rather liberation, a rooting out of all weeds, rubbish and vermin from around the buds of the plants, a radiation of light and warmth, a loving, whispering fall of night rain” (1965: 5–6).

Nietzschean educators liberate their students by setting them free from a slave’s worldview. Educators should lead the learning process towards the student’s rebellion against their own teaching, so that they will remain critical to themselves.

Freire's critical pedagogy owes significantly to Nietzsche's philosophy. According to Freire, the true act of reading performed by students is not merely exhausted by mechanical memorising and swallowing information – it is, first of all, participation in the re-creation of words. He calls this re-creation a “critical reading of reality, whether it takes place in the literacy process or not” (2005: 24). Furthermore, he continues, this “constitutes an instrument of what Gramsci calls counter-hegemony” (ibid.). Thus, Freire's critical pedagogy “is about offering a way of thinking beyond the seemingly natural or inevitable state of things, about challenging ‘common sense.’ It is a mode of intervention.” (Giroux, 2010)

One needs to be very cautious of any attempt to overcome common sense. Although authors of critical theory understand common sense as a collection of prejudices that seem to be self-evident to others, they often do not question what seems self-evident to them. Overcoming common sense does not mean overcoming any particular ideology or elements of this ideology.

For example, Freire and his followers share an aspiration to a “more human world” (2006: 145), even though the whole philosophy of Nietzsche, including his ideas on education that inspired Freire, was aimed at criticism of such aspiration. In particular, Nietzsche criticises compassion which, in his view, enslaves its object and implies perception of it as of a passive receiver of generosity. Nonetheless, the idea of a “more human world” and its concomitant idea of overcoming an inhuman world remains excluded from the critical perspective of critical pedagogy.

There is no fixed content which can be marked as common sense, therefore any kind of “inhuman” ideology or any other types of ideologies that critical theory takes as its object of criticism cannot be marked per se as commonsensical. What should be considered common sense is not determined by content. Rather, it is determined by the other type of feature: Common sense is any content that seems self-evident, unquestionable and not requiring to be subjected to critique. Respectively, if the doctrine of overcoming “inhuman” ideology seems to be unquestionable, this means that it has fully or partially turned into a common sense that requires a critical rethinking. Nietzsche claimed that a liberating educator teaches her students to overcome her own teaching, and a truly critical pedagogy cannot be considered as such if it does not criticise its own foundations.

Repressive Temporality

The common-sense mode of thinking and the critical mode of thinking can be distinguished by analyses of their perceptions of time. Within a commonsensical temporality, processuality is perceived in a reduced way. Such a perception tends to entirely inhibit the process of modification, i.e. to present modification as discontinued or strictly limited to a certain purpose or final cause (teleological). More precisely, the layer of transformation is at least partially extracted from the common-sense temporality. Commonsensical temporality tends to inhibit processuality on two interrelated levels: on the level of meaning of a signifier, and

on the level of reality. Temporality employed by a critical perspective is fully capable of disclosing layers of modifiability. It can also be called emancipative temporality, as it allows access to the layer of perception where liberation of words, and the reality they designate, becomes possible.

The concept of a child can be perceived within the perspective of repressive temporality and within the perspective of emancipative temporality. The commonsensical way of thinking perceives the concept of a child as unchangeable and unproblematic. From this perspective, the child is assumed to have some inner essence which is captured by its definition. Within the temporality of common sense it is not possible to comprehend historical dynamism and changeability of the concept of "child". Here, childhood is perceived in a teleological sense and aimed towards the point of final transmutation of a child into an adult. The first step towards transition to the critical mode of perception consists of doubt about the obviousness and inalterability of the concept of the child.

Within the perspective of commonsensical temporality, the concept of a child functions as a part of the dialectical construction child/adult. Being teleological, this construction is also strictly hierarchical. It presupposes the scheme of transition from the condition of "not-yet-a-complete-individual" to "already-a-complete-individual". This construction is formed out of a combination of three ideas: completeness of the individual is possible, being not-yet-a-complete-individual is possible, a final transition towards the role model is possible. The combination of these three ideas form a scheme of processing the one who is "not-yet-a-complete-individual" into the one who is "already-a-complete-individual". Transition between stages is often marked by rituals. Examples of celebratory rituals in adulthood include college graduation, marriage, and the birth of children.

The common-sense perspective eliminates the fact that the concept of a child was changing in the past, and, consequently, that it has the potential to be transformed in present time. Within a repressive point of view, it can appear as if the word "child" has always had the meaning that it currently has within a common sense framework. Within this perspective, it is also impossible to notice that the history of the concept of a child enables drawing various emancipatory ways of its interpretation. We will now trace the history of the concept of a child while simultaneously making an effort to reveal and further elaborate emancipative lines of its interpretation.

A Child Is the One Who Has to Be Educated

Aries states that the modern concept of a child began to emerge since the sixteenth century. At that time, a child began to be understood as the one who should be guarded and formed in accordance with the norms of Christian morality. Education and discipline were functioning as methods of guarding and formation. Describing this new attitude towards children, Aries states: "Churchmen or gentlemen of the robe, few in number before the sixteenth century, and a far greater number of

moralists in the seventeenth century, eager to ensure disciplined, rational manners. They too had become alive to the formerly neglected phenomenon of childhood, but they were unwilling to regard children as charming toys, for they saw them as fragile creatures of God who needed to be both safeguarded and reformed” (1962: 132–133).

Another evidence that the modern concept of child has always been bound to the concept of education can be found in Erasmus’s theory of upbringing. He thought of childhood and education as inseparable realities, and wrote that the child has “to imbibe, as it were, with the milk that he suckles, the nectar of education” (1985: 299). For Erasmus, it is a much greater crime to neglect an education of the child than to commit infanticide (1985). In this way, the very existence of the child was perceived as the process of education. Erasmus associated the child with high ability to learn. The child seemed for him to be predisposed by nature towards the aims of education. The newly formed understanding of adult and child was based on the concept of formation through education. “Man certainly is not born, but made man” (Erasmus, 1985: 304). To be formed into a complete individual one needs to be exposed to “education founded on moral principles” (Erasmus, 1985: 306).

Since the emergence of modern concepts of child, motherhood and fatherhood ceased to be based exclusively on kinship. Parenthood has become associated with educational and formative functions: mother and father started to be perceived as those who form the child, and not just those who are bound with her by ties of kinship. “Women who only give birth to their children but are not concerned to raise them are hardly even half-mothers; so also fathers who supply all their children’s physical wants to the point of spoiling them but totally neglect their upbringing are not even fathers in half the sense of the word” (Erasmus, 1985: 72).

Philippe Aries concludes in this respect that: “The family ceased to be simply an institution for the transmission of a name and an estate – it assumed a moral and spiritual function, it moulded bodies and souls” (1962: 412).

Christian ethics of that time served as an ideological foundation for newly formed relations parents-child and educator-student. Within the Christian doctrine a child was seen as the one who is initially sinful as she was born out of sin, thus she must learn and obey. Therefore, parents were seen as those who can guide the child on the way of salvation: “they were responsible before God for the souls, and indeed the bodies too, of their children” (Aries, 1962: 412). Christian morality of that time had internalised the idea of a loving and judging god, which was projected into society’s structures (family, school, etc.). An adult started to be understood as the one who loves and judges the child. Love to a child was demonstrated in a dominant, even violent form, nonetheless the child should obey adults, as adults are those who know what is good for her.

One of the most widespread colonial school texts of the seventeenth and eighteenth centuries in America was the *The New England Primer*. Alongside the alphabet, the *New England Primer* included “The Dutiful Child’s Promises”: “I

will fear God and honour the King. / I will honour my father and mother. / I will obey my Superiours. / I will submit to my Elders” (in Zornado, 2006: 16).

Aries indicates that “the separation and the acknowledgement of childhood were one of the sides of the great process of moralisation” (1962: 5). Within such a separation, a position is imposed on children as those who are formed, and adults respectively take the position of those who teach. This Aries’s statement allows us to conclude that simultaneously with the “child”, in the modern sense of the word, there appeared an ‘adult’, who began to be understood as an opposite of child. Until our days, a child is understood as the one who is taught, which means formed into an adult and an adult is understood as the one whose responsibility is to form a child.

From the presented historical evidence, one might draw a hasty conclusion that the modern concept of the child is in fact oppressive by its nature, and that it therefore needs to be overcome or rejected. But such a conclusion would indicate a remaining within a perspective of commonsensical temporality. Such a perspective might be also described as metaphysical, because it discerns unchanging and inalienable essence in all phenomena. Regarding words, it means that common sense imposes an idea that meanings of words are unalterable – within each word it sees only one immutable meaning. By fighting the concept of child as oppressive by its nature, one reveals that she believes in the existence of the final meaning of the word “child” – be it good or bad. In other words, to attempt to fight the concept of the child as repressive by its nature, means to persist within the perspective of commonsensical temporality, or, in Freire’s terms, not to be able of critical re-creating of words (2005).

On the contrary, to perceive the meaning of the word “child” as changeable and perishable means to avoid remaining within oppressive temporality. Critical temporality is capable of recognising an ambiguity of any concept as well as its transformative potential. Moreover, it does not limit the processuality of the concept to its past, and it also sees its transformability as actualisable in the present. Considering this, let us look into the history of the concept of child from a slightly different perspective, making an effort to reveal its potential for transformation that would be compatible with the future.

A Child Is Educable

Erasmus began to associate a child with education; simultaneously, he was one among many who compared a child with wax. According to his view, at the time of birth a human mind is a raw mass of material that should be mauled and shaped. What is born is an unrecognisable lump, that has to be carved into shape. “The child that nature has given you is nothing but a shapeless lump, but the material is still pliable, capable of assuming any form, and you must so mould it that it takes on the best possible character. If you are negligent, you will rear an animal; but if

you apply yourself, you will fashion, if I may use such a bold term, a godlike creature” (Erasmus, 1985: 305).

Locke also supposed that the child is a *tabula rasa* or wax to be moulded. Educator responsibility was to form a child, that is to say, to fill a *tabula rasa* or to mould the wax. However Locke did not treat children as passive material, but rather as material which is by itself active. He urged to treat children as rational creatures (1693), to encourage their curiosity and to answer all their questions carefully.

Thinkers who contributed to the development of the modern concept of child perceived children not just as those who have to be educated by educators, but also simultaneously as those who are themselves educable: who are moldable by their nature. This last claim, which is also a constitutional element of the concept of child, hides an emancipatory potential. Obviously, a tendency to associate a child with moldability persists as a part of today’s concept of a child. In modern terminology, we would say that a child possesses plasticity. Malabou lists phenomena which are most associated with plasticity: “[...] plasticity signifies the general aptitude for development, the power to be moulded by one’s culture, by education. We speak of the plasticity of the newborn, of the child’s plasticity of character” (2005: 8).

Malabou also introduces an important distinction between plasticity and flexibility. She claims that “flexibility is the ideological avatar of plasticity – at once its mask, its diversion, and its confiscation” (2009: 12). Flexibility is the ability to change in order to adapt to circumstances. This term grasps only one of the registers of plasticity, which is the receiving of form. “To be flexible is to receive a form or impression, to be able to form oneself, to take the form, not to give it. To be docile, to not explode. Indeed, what flexibility lacks is the resource of giving form, the power to create, to invent or even to erase an impression. [...] Flexibility is plasticity minus its genius” (2009: 12).

Flexibility, understood in this way, coincides with the spirit of obedience, but it is not so in the case of plasticity. Where flexibility implies only the capacity to receive imprint and passively adapt to external forces, plasticity also indicates the capacity to give form and to annihilate form. Plasticity, thus, designates that our brains are not docile, but rather are an active agency of “disobedience to every constituted form, a refusal to submit to a model” (2009: 6).

In terms of flexibility, a child is perceived as an obedient passive material that needs to be formed. Whereas in terms of plasticity, she is perceived as actively involved in her own formation: *her* learning is understood as *her* own achievement and as a result of *her* being active. Whether we associate the child with plasticity or flexibility might serve as an indicator of what kind of temporality we employ while comprehending the concept of the child. Within the perspective of repressive temporality a child is seen as flexible, that is to say, as a passive agent of formation. Within the perspective of generative temporality, a child is comprehended as plasticity, that is to say, as an active agent of formation. Another

aspect which emerges in connection with the employment of repressive temporality is a specific distribution of roles within the educational process. Here, adult and child are understood as two opposites: the child is the one who is formed, while the adult takes a role of a bearer of knowledge who forms a flexible child. Within this scheme education is perceived as filling up with content.

By banking education, Freire describes the traditional education system based on the model of domination. Within such a model teachers are seen as agents of formation, whose task is to “fill” the students with appropriate contents. Freire refers to a banking paradigm as regarding students to be depositories and the teacher is the depositor. Students therefore play the role of “receptacles” to be “filled” by the teacher, the “banking concept of education regards men as adaptable, manageable beings”. Within banking education the task of the student is seen in “memorising, and repeating” (2006: 73). Clearly the education system Freire criticises corresponds to the understanding of a child as flexibility.

After Freire, critical pedagogy has been further developed by Henry Giroux, Peter McLaren and others. They all agree that the problem articulated by Freire is still relevant. Describing contemporary situations Henry Giroux (2010) states: “Most universities are now dominated by instrumentalist and conservative ideologies, hooked on methods, slavishly wedded to accountability measures, and run by administrators who lack both a broader vision and an understanding of education as a force for strengthening the imagination and expanding democratic public life. [...] There is little interest in understanding the pedagogical foundation of higher education as a deeply civic and political project that provides the conditions for autonomy and takes liberation and the practice of freedom as a collective goal”.

Critical pedagogy denounces a dominant system of education because it threatens students as passive recipients of information. Yet, critical pedagogy is also fraught with the danger of slipping into an understanding of students as flexible. To elaborate on this issue, let us consider Giroux’s treatment of technology as “a form of pedagogy, because it both produces knowledge and facilitates the exchange of knowledge and communications” (Giroux, 2005; Giroux and Jandrić, 2015).

Children and Their Media Environment: Active Learners or Passive Absorbers?

Jenkins explores the modern tendency of victimisation of children, which is carried out under the guise of protection of their innocence. He states that the “dominant conception of childhood innocence presumes that children exist in a space beyond, above, outside of the political; we imagine them to be noncombatants who we protect from the harsh realities of the adult world [...]. Yet, in reality, almost every major political battle of the 20th century has been fought on the backs of our children, [including] contemporary anxieties about the digital revolution (which

often depicts the wide-eyed child as subject to the corruptions of cybersex and porn websites)” (1998: 2).

Jenkins calls for a move beyond powerful binarisms about adult corruption and victimised children. He adds that “such myths have survived because they are useful, useful for the left as well as for conservative and patriarchal agendas” (1998: 3).

The described victimisation implies treatment of children as flexible. As Jenkins warned, speaking of harmful information, this agenda organically implements a perception of children as passive victims. The very concept of harmful information is paired with those problems that Freire addresses under the name of banking education. Only within a perception of education from within a repressive point of view can one distinguish good influence (the desirable content) from the bad influence (unacceptable or dangerous content, namely such that has to be removed from the one who supposed to be formed).

It is only through implementation of banking education that such distinction is possible, since it considers a child to be a part of an already familiar distribution of roles. Here, formation of a child is considered to consist of the following elements: the one who is formed (the receptacle of content); material that is transferred (the appropriate content), and the one who forms. The function of the former is to distinguish appropriate content from inappropriate one, deciding what influence is acceptable and what influence is unacceptable.

Elizarov explains why children’s ignorance is an antipode of emancipation: “Only a well informed person is capable of emancipating. For this reason, children’s innocence is just an endorsed ignorance: they are meant to learn only the normative knowledge that is granted to them and to be ignorant of what is presumed bad for them to know. This means that under disguise of protection children are denied access to information” (Elizarov, 2014).

Emancipative temporality does not see the formation of a child as filling with content. Rather, it perceives the formation of a child as the activation of a child’s own ability to learn. Accordingly, within the perspective of commonsensical temporality, education is based on the rejection of some potential sources of influence (under the guise of protection from harmful information).

If we broaden Freire’s concept of teachers as imposters of influence to also include indirect agents of formation, we might reveal how a repressive perspective seeps into contemporaneity under the guise of a progressive view. The most vivid example of such indirect agents of formation are virtual spaces, systems and social media that surround children. Employing the commonsensical perception of the child as an innocent and passive absorber of influence, we tend to understand the form of the child’s relationship with such “agents of formation” as oppression of the child. It is from this perspective, that we sometimes hastily criticise the marketised media as an oppressing aggressor which corrupts the unprotected innocent mind of a child (Jenkins, 1998). However, this issue might be addressed from a slightly different perspective.

Freire advocates a system of education that would perceive students as active agents of formation. Yet, he is still not always attentive enough to formulation of his own thoughts. More precisely, he admits that students are not just seen as passive in the traditional system of education – sometimes, they can actually be passive. For example, he refers to those who become active searchers as “formerly passive students” (2006: 75). To radicalise this remark, it can be also questioned whether the idea of passive learning, which such statements presuppose, is not merely a nonsense?

According to Freire, once those who are oppressed employ a critical view, they become capable of exposing a “passive role imposed on them” (2006: 73). As a result, they start to take an active position in the educational process. However, it might be claimed that what one exposes through employing a critical view is the child that has never been passive – that all the experience and knowledge she has acquired (even while treated as a depository) was a result of *her* own active position and of *her* own work of learning. She has never been a victim. Instead, she has been using own potential, succumbed to the belief that knowledge was bestowed on her. As a result of exposing her involvement in her own activity, she becomes capable of developing more responsible thinking. Arguably, it is this transition that is a key for emancipatory education – rather than a mere transition from passive to active learning.

Having said that, let us consider media advertising aimed at children. The fact that a child has undergone watching a chewing gum advert on television or on YouTube and subsequently started to desire it, may be regarded not as the fact that she has absorbed a harmful information or inappropriate knowledge (this would be a perspective that considers the child as flexibility) – but as the child’s own achievement. Considering a child as plasticity, we would claim that it is a *child* who has acquired new knowledge about chewing gum. Now she knows that it has an amazing taste, that it is possible to blow a huge bubble from it, and other children will be jealous if she gets it.

The fact that she has developed this knowledge and even her conclusion about an urgent need for chewing gum can be considered as an indication that she is capable of developing more critical and sophisticated knowledge. A critical perspective is not something which appears from the outside of the child. Instead, critical thinking is possibly a reverse side of a child’s own ability of acquiring knowledge. Later on, this knowledge will serve as a material for her critical rethinking. In this perspective, there is no such thing as wrong knowledge that a child should not adopt, or, more accurately, there is no such thing as wrong knowledge that should not be imposed on her. Critical thinking requires work with the material that has already been adopted by the child, that is with her own beliefs and knowledge. Such thinking is not an elimination and denial of knowledge, but rather the transition to the level of its complexification.

A child is not a passive *tabula rasa*. Critical questions such as “Do I really need a chewing gum?” do not arise out of thin air. They are also not negations of a

child's existing knowledge that she "undoubtedly needs a chewing gum". Instead, such questions are rather a modification of this knowledge into a more complex one. The question "Do I really need a chewing gum?" retains the content of a child's previously acquired knowledge "I undoubtedly need a chewing gum". Thus, content is not eliminated, it is rather modified into its more complex form.

If this question is posed not by the child, but, for example, by her parent, its positive result would be not an elimination of previously imposed 'wrong' knowledge (that she needs a chewing gum). Instead, it would be an adoption of a parent's example demonstrated to a child. Doubting out loud that a child needs a chewing gum, parent provides her with an example of how her knowledge can be complicated. It is up to the child whether she will follow the example of her parent. Considering children as passive consumers and unconscious replicators, we fall into the same trap as when we perceive them from within the perspective of banking education. Even when learning within the banking education, a child is not necessarily a victim, because the act of learning necessarily involves her own activity. Her knowledge of an extreme necessity of chewing gum is not something opposite to her possible subsequent critical view on this issue – those are merely levels of different complexity in regards to the same process.

For Giroux, it is clear that children should not be regarded as mere victims and passive consumers. However, he does not completely avoid the described oversights. Giroux and Pollock criticise Disney for regarding children as passive consumers (2001). However, it seems, they also regard children as passive agents by claiming that Disney's content does not bode well for young children since it forces them to assume the role of passive consumers. They brought into evidence the report of American Psychological Association (APA) that children under eight years old are uniquely susceptible to influence of advertising. Thence, Giroux and Pollock approve APA's recommendation for "a ban on advertising that targets children under the age of eight" (2001: 209). They also complain that "it is hard to imagine a corporation like Disney, which now owns the Baby Einstein and Club Penguin franchises, voluntarily refraining from advertising to children under eight years old" (ibid.: 210). This implies that it is necessary to impose a ban on the content of advertisements. Given that advertising is one of the types of information, the intention to make it inaccessible to a child implies restrictions on free circulation of this type of information.

Under the pretext of protection of children, Giroux and Pollock criticize the fact that children are regarded as consumers. Such a position involves a paradox: those who seemed to be less respectful of children, actually treat them as more equal to adults. At least, they are not denying children the freedom of consumer choice. On the other hand, defenders of children differentiate them from adults and deny them the right to a certain form of information. Furthermore, children are not the only people who might have underdeveloped critical skills. This is often the case with adults, who are also susceptible to influence of advertising. The difference between a child and an adult is that the former is deprived of the opportunity to develop

critical thinking, since she is isolated from the informational space where she could practice a critical attitude, and from the material with respect to which she supposed to be critical.

The Endless Child

Within the commonsensical temporality, an adult is understood as someone who knows what kind of information should be kept from a child and someone who possesses knowledge that has to be conveyed to the child through the process of education. Within emancipative temporality, this issue is seen in a dramatically different light: there does not exist an adult as the one who bears the ultimate knowledge and the one who knows how to educate the child. Within such a perspective, the one who is called “child” ceases to be seen as someone who is taught; respectively, the adult ceases to be the one who teaches. Both of them, to the extent to which their abilities allow, are involved in the process of cognition.

Freire formulates his most progressive thought when he endeavours to imagine an alternative education and comes up with the concept of problem-posing education. Here, the border that separates the concept of a student from the concept of a teacher is deconstructed. The learning process is understood as an ongoing activity which never comes to an end. In Freire’s own words, “problem-posing education affirms men and women as beings in the process of becoming – as unfinished, uncompleted beings in and with a likewise unfinished reality” (2006: 82). Freire’s concept of education does not bind the process of formation to a certain point where it has to come to an end (previously, we called this point “already-a-complete-individual”). If individuals are unceasingly incomplete, this means that there is no one who consequently becomes a teacher and acquires the right to teach, for the reason that to become a teacher one has to become complete.

In the similar way Nietzsche understood maturity when he was using this word to describe free spirits:

[...] to that matured freedom of the spirit which is, in an equal degree, self mastery and discipline of the heart, and gives access to the path of much and various reflection—to that inner comprehensiveness and self satisfaction of over-richness which precludes all danger that the spirit has gone astray even in its own path and is sitting intoxicated in some corner or other; to that overplus of plastic, healing, imitative and restorative power which is the very sign of vigorous health, that overplus which confers upon the free spirit the perilous prerogative of spending a life in experiment and of running adventurous risks: the past-master-privilege of the free spirit (2008: 7).

Nietzsche associates the state of maturity with the possession of the “plastic power” inherent to masters. He opposes that possession to the condition, when there is still a danger to stop on the way: to become slave of a certain worldview,

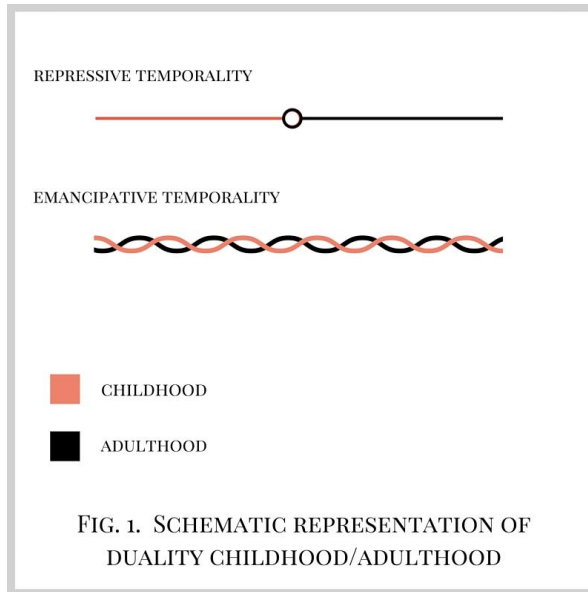
being unable to remain a plasticity of views. Nietzsche also argues that acquisition of real maturity is simultaneously the becoming of a child. That is to say, incompleteness which is initially a feature of a child is simultaneously the manifestation of real maturity. For Nietzsche, the real adult is “always childish enough, an eternal child” (1997: 40). Simultaneously, transformation of adult into child in Nietzsche’s philosophy represents the overcoming of nihilism, that is, of “interpretation of life against life”.

Conclusion

Even the most advanced critical theories are not yet fully deprived from the repressive temporality of common sense, as they tend to see a child in terms of what Malabou describes as flexibility. One of the reasons for this oversight is still prevailing on the level of unquestioned common sense, a clear separation of a child from an adult with the assignment to each of them of their “natural” roles. A commonsensical perspective implies a division into transmitters and receivers of information and knowledge, and the child is perceived as someone who needs to be stuffed with appropriate knowledge in order to become an adult. In this interpretation, childhood is reduced to an understanding of being a non-adult, who is therefore refused an active position.

Repressive temporality imposes a requirement to become an already-complete-individual on the child. Emancipatory temporality highlights that the key aspect of learning is actualisation of the modifiability of the child. Within emancipatory temporality, childhood (seen as a state of plasticity) never completely passes into adulthood (seen as a state of completeness). From this perspective, adulthood is understood as always only arriving and as constantly preserving plasticity in its basis.

On a time line of repressive temporality, dialectical duality childhood/adulthood can be represented by a two consecutive segments. On a time line of emancipative temporality, this duality can be shown as intertwined lines (see Figure 1). The later variant implies that the division between child and adult is seen not as a junction between the two lines, but as an area of tension spanned through the whole life. Repressive temporality understands childhood as a period of life that will once be replaced by adulthood, and emancipative temporality comprehends childhood as a condition of unceasing replacement for adulthood. The very shift from childhood to adulthood ceases to be understood as an event that takes place just once, and functions as a continuous transition.



The relation between a child and an adult which follows from emancipatory temporality differs from the hierarchical construction of child/adult articulated within the repressive perspective. It does not maintain an idea about the final transition from the child (not-yet-a-complete-individual) to the final destination (already-a-complete-individual). From the perspective of generative temporality scheme, child/adult does not imply understanding of an adult as a role model in comparison with which a child is not complete. Within such a perspective the transition from childhood to adulthood is replaced by the constant tension between childhood and adulthood, where the former will never be completely replaced by the latter.

Such a shift in understanding the dialectics of child/adult has deep consequences for the reshaping of the concept of education and learning methods. Elimination of the strict line between an adult and a child implies deconstruction of the border that separates the teacher from the student. Within the emancipative temporality, their functions are intertwined. A teacher is not the one who pursues the ultimate goal of transforming a child into an adult. From the perspective of emancipative temporality, the process of learning is devoid of any ultimate purpose and is therefore endless. Such a perspective enables comprehension of the human being as unceasingly unselfsufficient. Therefore, the human being always has the potential for self-formation and exploration of the world. She always keeps a curious child within her, and never fully degenerates into a complete adult.

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THE ETHICS AND IMPACT OF DIGITAL IMMORTALITY

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ABSTRACT. The concept of digital immortality has emerged over the past decade and is defined here as the continuation of an active or passive digital presence after death. Advances in knowledge management, machine to machine communication, data mining and artificial intelligence are now making a more active presence after death possible. This paper examines the research and literature around active digital immortality and explores the emotional, social, financial, and business impact of active digital immortality on relations, friends, colleagues and institutions. The issue of digital immortality also raises issues about the legal implications of a possible autonomous presence that reaches beyond mortal existence, and this will also be investigated. The final section of the paper questions whether digital immortality is really a concern and reflects on the assumptions about it in relation to neoliberal capitalism. It suggests that digital immortality may in fact merely be a clever ruse which in fact is likely to have little, if any legal impact despite media assumptions and hyperbole.

Keywords: digital immortality; identity; legislative conundrums; neoliberal capitalism

1. Introduction

The concept of digital immortality has emerged over the past decade and it has gained increasing interest and media attention. Digital immortality is defined here as the continuation of an active or passive digital presence after death. As people establish on-line identities and repositories, the likelihood that their digital presences will persist beyond their death increases, especially as the use of virtual personal assistants grows. This paper will examine the research and literature around active digital immortality and consider, for example, how an active

artificial intelligence driven presence after death (two-way immortality) differs from 'passive' social media death (one-way immortality). The emotional, social, financial, and business impact of active digital immortality on relations, friends, colleagues and institutions will be explored, as will preservation and privacy issues, and the legal implications of a presence on-going beyond the autonomous control of the mortal presence. Questions such as who would assume liability for libellous material, or other infringements, will also be examined.

The scope of a digitally immortal persona will be restricted in this paper to include only that which is currently technically feasible, rather than any form of speculative digital downloading of consciousness or physical androids. The focus is therefore on current developments in artificial intelligence and purely digital personas based on the 'mindfiles' of a person – the digital traces of a person's active, living relationship with technology, a digital database of people's thoughts, memories, feelings and opinions, such as CyberAll, (Gehl, 2001), and where, according to Bell and Gray (2001: 29), 'one's experiences are digitally preserved and which then take on a life of their own.'

The paper will consider the legislative conundrums of pre and post death and the scope for legislation and guidance, for example how the law should deal with any ensuing contracts and the legal framework for post-death presence, as well as legal deletion and legal protection. In the absence of a living, and identified actor, and without clear authority for virtual activity beyond death, mechanisms for pursuing liability in civil and criminal liability within a global jurisdiction is unclear. Yet the paper questions whether digital immortality is really a concern or merely a clever ruse which in fact is likely to have little, if any legal impact. However, the paper will begin with an exploration of the current research and literature in this area.

2. Literature Review

Despite the media interest in digital immortality, the research in this area remains small and discrete. However, digital immortality has moved beyond simple memorial pages (Frost 2014), and as early as 1997 the term *thanatechnology* was instituted by Sofka (1997) to represent this desire to preserve one's soul and assets digitally after death; it has since been developed further by Sofka, and Gilbert (2012). There have also been cases where people have received 'beyond the grave' updates, either from dead friends (McAlear, 2011), or companies dedicated to creating digitally immortal personas (LivesOn, 2015). Facebook has now put in place measures to control the digital legacy of pages on their site (Skelton, 2012; Buck, 2013), and recent work by authors such as Adali and Golbeck (2014) illustrate that it is possible to generate accurate predictions of personality from online traces. Advances in data mining and artificial intelligence are now making a more active presence after death possible; thus it would seem to be possible to create artificially intelligent systems that could generate new commentary on media

events in the style of a particular deceased person, for whom an online profile had been created before death. The first section of the literature review explores identity and the shifts in the way it has been perceived, since this has a bearing on digital immortality, which in essence is a left behind identity.

Shifting identities

In former years identity and self have been seen as static entities. Whilst authors such as Buber (1964) argue for the notion of selfhood rather than identity, there remain questions to be answered about the extent to which identity shifts, as well as role shifts, are more likely to occur in some environments than others. Further Lukes (1973) argued for the ethic of individualism which suggests the idea of the individual being independent and autonomous, and one's thoughts and actions not being determined by external agencies. However, Hall has argued:

... identity does *not* signal that stable core of the self, unfolding from beginning to end through all the vicissitudes of history without change... Nor – if we translate this essentialising conception to the stage of cultural identity – is it that collective or true self hiding inside the many other, more superficial or artificially imposed ‘selves’... identities are never unified, and in late modern times, increasingly fragmented; never singular, but multiply constructed across different... discourses, practices and positions (1996: 3–4).

More recently Haraway (1985) and Hayles (1999) have been at the forefront of discussions about identity in digital spaces, and Ito et al. (2010) have been influential in the work that has examined how youth culture and identity might be understood. Thus, since a raft of sociologists have examined identity, there is a broad literature on identity. Turkle (2005) suggests that computers are not merely objects that make our lives more efficient, but are subjects that are intimately and ultimately linked to our social and emotional lives. The result then is that computers change not only what we do, but also how we think about the world and ourselves. Such suggestions would seem to be exemplified in perspectives on and studies into virtual reality and immersion (for example, Žižek, 2005; Hayles, 1999), as well as in studies about identity positions in virtual worlds. However, Clark has argued:

Human-machine symbiosis, I believe, is simply what comes naturally. It lies on a direct continuum with clothes, cooking (‘external, artificial digestion’), bricklaying, and writing. The capacity to creatively distribute labor across biology and the designed environment is the very signature of our species, and it implies no real loss of control on our part. For who we are is in large part a function of the webs of surrounding structure in which the conscious mind exercises at best a kind of gentle indirect control (Clark, 2003: 174).

It is argued here that what is needed instead is not a static view of self but a liquid view; a recognition that identities are not just multiple and fluid, but overlap and shift according to context.

The idea of being able to live on beyond your natural death has a long history in our culture, and remains popular in novels such as *The Night's Dawn Trilogy* by Peter Hamilton (Hamilton, 1996–1999). Prior to our technological age the agency for this was typically the ghost, and in the 20th Century we have seen examples from *Randall and Hopkirk (Deceased)* (Spooner, 1969) to *Ghost* (Rubin, 1990) and *Truly, Madly, Deeply* (Minghella, 1990). However, in the digital era, most of the Artificial Intelligences within Science Fiction have tended to be “evolved” artificial intelligences, such as SkyNet in *Terminator* and Ultron in the Marvel films, which have become sentient rather than being created as digital immortal personas of other people. However, there are examples, particularly in the science fiction of the last decade, where the artificial intelligences are digital immortals, or at least are the digital copies of real people. Examples include *Caprica* (the *Battlestar Galactica* prequel, where Zoe Greystone has been creating a copy of herself, but she then dies leaving the digital copy to carry on her legacy), BBC’s *Planet B* series (where the protagonist attempts to find his girlfriend who is dead in the real world but alive in the *Planet B* virtual world, with the help of a rogue avatar who has no human controller) and the Gleisner robots (human digital intelligences downloaded into physical robots) of Greg Egan’s *Diaspora* (Egan, 1997). What is interesting about these constructions is that the digital persona is very much living in the here and now of their progenitor’s death, rather than facing up to the implications of potential immortality.

The novels of Suarez (2009) depict something akin to digital immortality, in that the character Sobol was dying of brain cancer and become fearful for the human race and humanity, and began to envision a new world order. Thus on the publication of the obituary of Sobol, a brilliant computer programmer, a computer Daemon is activated, designed to enact this new world order. There are also constructions of left behind identities; some examples of this include films from popular culture such as *X-Men* (Hayter, 2000) and *The Matrix* (Wachowski, and Wachowski (1999). Certainly Žižek (1999), in his deconstruction of *The Matrix*, suggests the possibility that the deletion of our digital identities could turn us into ‘non-persons’, but perhaps a more accurate idea would be one of becoming changelings, rather than deletions. Although largely seen as a legendary creature left behind instead of a human child, the changeling has also been used to demonstrate different forms of ‘left-behind’ identities. Possibly the most well-known example is the changeling boy in *A Midsummer Night’s Dream* over whom Oberon and Titania fight (Shakespeare, 1590), who exists at the borderlands of human and fairy kind. The play itself explores issues at the margins of where power and rules change and often break down; something that clearly seems to be the case in digital immortality. Furthermore, there has been little consideration of

the spaces where these identities are located and the little exploration of different identity constructions.

Space and identities

This section examines research undertaken into identity in cyberspace, and suggests ways in which identities might be delineated in difference spaces, in order to provide a backdrop to the exploration of identities beyond the grave.

For most people there is a sense of travelling through cyberspace by putting on and taking off identities, crossing fluctuating boundaries and bouncing between virtual and real life worlds, and this brings opportunities to ‘play away’ from other identities. The work of Goffman is still useful in informing explorations of identity in digital spaces, as he argues that people tend to construct and perform their identities in relation to their peers and networks (Goffman, 1959). Further, studies into Second Life indicate that staff and students recognise that online identities tend to spill over into work or home identities, and in some cases have prompted reformulations of other identities in other worlds (Steils et al., 2014). Some scholars suggest that it is important to have a clear conceptual understanding of who we are in cyberspace, since without it we risk being confused (for example Floridi, 2011). Floridi and others who argue for such a stance seem to suggest that separating and being honest about identities brings with it some kind of honesty or morality, yet this would seem misplaced. Similarly, Kimmons and Veletsianos (2014) argue that the ability to undertake identity explorations relies on the “user’s ability to separate the legion of one’s virtual, exploratory selves from the real life or traditionally viewed unitary self. In the Web 2.0 world, however, one’s ability to do this diminishes as anonymity declines, real life connections are replicated in the virtual medium, web resources are used for surveillance, and sites like Facebook and LinkedIn seek to present “authentic,” unitary selves that are similar to the selves expressed in real life” (Kimmons and Veletsianos, 2014: 8).

Nevertheless, this stance would seem erroneous, since identity exploration does not require a clear separation of identities, but a recognition that identities are both multiple and fluid, and overlap and shift according to context. Although later in the article Kimmons and Veletsianos do suggest context has some relevance, they do rather hold onto the argument for some kind of unitary self. For example, they argue that Facebook is built on the premise that people have authentic identities and that those identities are expressed online, yet work by Madge et al suggests that while the use of Facebook can support student engagement and integration at University, students still largely use it as a social tool. They observe students adopting a wide variety of ‘different place-based and online-networks to develop and sustain their settling-in process and maintain and develop social networks’ (Madge et al., 2009: 152). Further, Kimmons and Veletsianos also argue that online identities are mere fragments of themselves and that people tend neither to play a part nor act out identities. Yet this sense of just using what they term acceptable identity fragments would seem to suggest that people merely use online splinters of

themselves, rather than make specific decisions and choices about what is revealed, acted, dramatized and performed. Perhaps a more useful concept is identity tourism, a metaphor developed by Nakamura (2000) to portray identity appropriation in cyberspace. The advantage of such appropriation enables the possibility of playing with different identities without encountering the risk associated with racial differences in real life. Yet: “One of the dangers of identity tourism is that it takes this restriction across the axes of race/class in the ‘real world’ to an even more subtle and complex degree by reducing non white identity positions to part of a costume or masquerade to be used by curious vacationers in cyberspace” (Nakamura, 2000).

Identities tend to be played out differently according to the diverse online groups it is possible engage with; we are all enactors of our own spatial stories which may or may not be adapted or adopted by others after death. Identities, then, can be delineated as multiple and multifaceted and have been described in detail by Savin-Baden (2015); some of these are summarised below:

Spatial identities – there are many mobile and polyvalent identities that are played out by individuals in diverse media spaces, whether Twitter, Facebook, blogs or email. Largely there will be some degree of crossover between them, and some kind of stability, even though we might choose to represent ourselves differently on Facebook compared with a work email conversation. These identities are enacted through digital media and each enactment tends to prompt a different kind of performance, invariably guided by the norms, cultures and affordances of both the software and the users of those spaces. These identities are at most risk of digital immortality.

Networked identities – in 2008 Ryberg and Larsen suggested that networked identities represented the idea that identities were constructed in multidimensional and complex ways across overlapping online and off line networks across school, work and spare time, and it is through such networks that individual identities exist and become real. Since 2008 further research seems to support this, but also indicates the emergence of visibility and status hierarchies within such networks. For example, Kozinets (2010) suggested this was less about status *per se* and more about ‘visibility and identity expressions’ (24). Networked identities differ from spatial identities as they are specifically located in, and are in relation to, given networks, rather than broader spatial zones in which spatial identities are located, although of course there is overlap between the two.

Identities on tour – there is often a sense of play with these kinds of identities. These are not static, and do not have anything sinister about them, as in identity tourism. Instead they are dynamic, and the purpose and point of view of the traveller is central. Thus when working in areas such as mixed and augmented reality, people might create legitimate space and places for identity exploration and (re)formation.

Bridged identities – are identities created to link with other exterior worlds, such as virtual worlds, discussion forums and gaming worlds. Such identities might be located through the creation of avatars or using avatars for identity play (playing with avatar identity in ways that were seen as fun and sometimes trite (Savin-Baden, 2010)). Thus bridged identities link to other (alien) identities, such as other territories and no-man's land. For example, the bodily markers that are used to present ourselves in life, clothes, ethnicity, gender and speech may be re-presented (differently) in virtual worlds but they also indicate choices about how we wish to be seen or the ways in which we might like to feel differently. However, as Nakamura suggests, we might be aware that these kinds of media (games and virtual embodiment) create social factions of race and gender, while accurate images of gender and cultural realities might be rare (Nakamura, 2010: 430).

Discarded identities - As we shift and move identities across online contexts, rather than deleting those that become superfluous, we tend to leave them behind. Such identities then become part of the junk spaces of the Internet, left behind and forgotten avatars, discarded blogs or Facebook profiles, along with the ones that remain when someone dies.

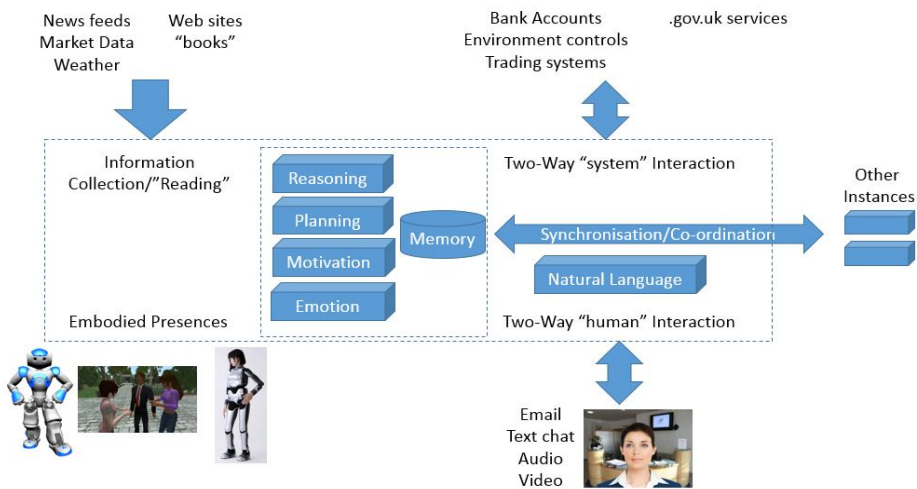
Playing at the borders of identity seems to be an attempt to disrupt the mind/body polarity by focussing on a resituated and often repositioned body. Perhaps it is more complex and we need to have a new set of sp/pl/ace identities which reflect squashed polarities, misplaced immortalities and new configurations of space and place. Transformations are affecting our identities and sense of space and place, so that there is a sense of being disparate, as well as holding homogenised identities. Yet it is also important to consider how digital immortality is created and placed.

Creating Digital Immortality?

Despite the concern and excitement, digital immortality merely comprises code and data. Digital identities are data, which can be added to and updated (and even forgotten), and a set of code with rules (which may themselves be data) to interact with those data and the real world – something more than just a simple auto-responder like a Twitterbot (Dubbin, 2013). This section explores how this code may then be used to interact with the real world, so that the digital immortal can present itself in various ways, although being only a manifestation. Further, there is also no reason why there should not be more than one copy of the code (and data) running instant digital clones. Whether these instant digital clones can share, co-operate, or even compete is another avenue for exploration. A simple and current example of such a multiple bot would be the 70,000 (covert) female chatbots (fembots) used to “chat up” male subscribers to the Ashley Maddison dating web site, giving the sense of it being a busy site with large numbers of available women, and encouraging the men to sign up for more expensive services on the site (Gizmodo, 2015).

Figure 1 provides a simple overview of a potential digital immortality system. A central core manages memory, reasoning, motivation, planning and possibly emotion. The digital immortal “reads” a variety of information sources, and has two-way access to a variety of real-world systems. It can also embody itself in virtual worlds (as an avatar), and possibly in the physical world (via a robot). It has a natural language understanding and generation facility to enable two-way communication with people in the physical world (by text, audio, video, email, textchat, Twitter and other systems), and it potentially synchronises its knowledge and activities between multiple instances of itself.

Figure 1 An overview of a potential digital immortality system



The most important implication of this code/data existence is that immortality is in fact just a hosting plan (Burden, 2012); as long as you (or your digital immortal) can keep paying the hosting company to run you (and keep a backup), you live. From a longer term perspective though there are issues about how the identity is “transcribed” between operating systems, media, computer languages and database standards, as the information technology landscape changes over time. Whilst in many ways these are aspects which are common to many, even all, computerised systems (and that in itself is part of the point – what we are discussing here is something built on current technology), what turns it into a Digital Immortality (apart from the nature of the code) is the intent (to deceive, replace, to be “self-determined”) and the illusion that it then creates in the outside world. The important issue here is the need to *only* to create an effective *illusion* - and a system that can maintain the illusion that the interaction is either with a real person, or at least a consistent model of a person now dead. We do not need to create “consciousness” – although the difference soon gets us into the realm of the work of Moody, Dennett, Chalmers and Zombies (Dennett, 1995).

In other arenas it is not illusions that are seen to be created, but projections. For example, Gee's conception of the virtual self in gaming is located within character within the game, and he has argued that identities are projected identities, but this introduces interesting psychoanalytic difficulties. Projections are usually unwanted feelings that people invariably choose not to own; the assumption is therefore a belief that someone else is thinking/feeling them instead, such as anger or judgement (Jung, 1977). The difficulty then with the creation of digital immortality is that the formation could be seen as a replicated identity, which is less than something that 'exists' externally or in the virtual world, and is merely a simulation running in the mind of the perceiver. For example, in forms of paranoid schizophrenia, some people experience Capgrass syndrome where they see replicated manifestations of friends, relatives or even themselves, which is an example what happens when a human system breaks down.

At the most rudimentary level the digital personality is a case of parameterisation, rules and data. Parameters might set some of the coarse elements of the digital immortality, for instance an appetite for risk, or an extrovert/introvert personality. The rules define what the digital immortality does, or the decisions it makes, based on a wide variety of inputs, informed by its data, and guided by its parameters. Some of these rules may be very deeply ingrained (for example, to avoid things that might damage its survival), whereas others might be more ephemeral and constantly changing, for instance approaches to deciding where to invest. At their simplest these rules might be straightforward IF . . . THEN statements; at their most complex they might be implemented as "rule engines" and neural networks. The final element is data, which in the case of a digital immortal could be seen as synonymous with memory. Whilst still much under debate, humans are seen to have different types of memory (Tulving, 1991) but it is episodic memory and semantic memory that are perhaps the most helpful in the context of digital immortality. Thus creating digital immortality becomes "simply" a case of defining the parameters, defining the rules, and collecting the data. There are broadly two approaches for creating the code and data for a digital immortal; manual and automated. In a manual process the digital immortal might be created by explicitly having a "dialogue" with a digital immortality "wizard" over many days, weeks, or years. In an automated process the data would be harvested by tracking real-world interactions (our emails, voicemails, blog posts, global positioning traces, bank transactions), and the parameters and rules created by modelling our decisions and responses and gradually refining those models (for example through neural net or genetic programming approaches) until they accurately reflected our true actions.

Scope of action and interaction

Once digital immortality is created it is important to consider how it would interact with the world, and how others might interact with it; some suggestions are delineated below:

Passive Collection

The digital immortal can collect information about the world, such as “reading” web sites and RSS feeds, reading emails and examining data feeds. In fact as a digital immortal it should inherit our email account, bookmarks and RSS feeds. There are already applications (e.g. Stremor and Textuality) which will extract the key ideas from web pages and RSS feeds, or that can identify trends and outliers in data. The only “data” which would currently give the digital immortality problems are audio and video, but speech recognition and video analytics are both improving.

Interacting with Systems

Interacting with systems is a superset of the passive collection case; here the digital immortal is able to raise queries, post data, or make changes on other computer systems. Most computer systems now have Application Programming Interfaces (API), often delivered as “web services”, which could be controlled by the digital immortal. Where those interfaces are encrypted or otherwise protected so that they can only be accessed by a dedicated client (for example, online banking) then there may be more of a challenge to accessing the interface, but as machine-to-machine (M2M) interaction increases (for example, our accounting system accessing our bank accounts), then the scope to access them from the digital immortal increases.

Interacting with People

Interacting with people is probably the easiest challenge. Natural language processing and generation systems, often called chatbots, have a long history (Turing, 1952). Whilst the Turing Test (a test to see if a computer can fool a human into thinking it’s also a human) has yet to be passed consistently, there are signs (Gilbert and Forney, 2015) that we are coming close. Interestingly it is the natural language *generation* that may prove a harder problem to solve than the natural language understanding. Another challenge is that most Turing conversations are little more than question-answer exchanges, whereas real human conversation is often more about conversational threads and argumentation.

Whilst most chatbot work has been about text-based interfaces, text-to-speech generation is becoming increasingly human (and close to “Turing” capable), but speech recognition is still problematic (as any user of Siri or Cortana can attest). Real-time generation of video imagery (head only or full body) is also improving, and real-time understanding of gesture and expression is also on a steady improvement path (for instance Second Life founder Philip Rosedale’s new High Fidelity virtual world uses a webcam to have your avatar mimic your facial expressions as you talk). So whilst the most “believable” digital immortal today would be a recluse conversing only by email, text message and real-time chat, it is probably only a decade before full audio-visual interaction with our digital immortal will be possible and indeed the Loebner “Gold” prize has been set up to encourage this (<http://www.loebner.net/Prizef/loebner-prize.html>).

Interacting with the Physical World

There are two aspects to interacting with the physical world. First, in order to interact with the physical world the digital immortal does not need a physical manifestation. Increasingly the physical world is being controlled by systems, from home lighting to cars. Thus if the digital immortal can access and control systems it can also control the system connected parts of the physical. At a macro-level if a neo-liberal capitalist digital immortal is controlling funds and companies its effect on the physical world through its human “agents” (employees) could be immense. Giving the digital immortal embodiment within the physical world such as an R2D2 type robot, a C3PO type robot, or a human-looking avatar, is almost a side-show. Digital immortality need only capitalise on current technology. There is also no need for the digital immortal to “move” into the robot shell, it can control the shell remotely or just place a part or an instance of itself within the shell to maintain a level of autonomy when disconnected.

However, perhaps an incentive to use a physical form is that embodiment may be essential to the development of the digital immortal’s identity, and intelligence. Varela et al (1991) and others have argued that embodiment is key to intelligence, and so it makes sense for the digital immortal to aspire to physical embodiment in order to experience the rich, chaotic physical world at first hand so as to avoid atrophy and encourage the further growth of its intelligence. This embodiment though could be purely within a virtual world – controlling an avatar within a virtual world or virtual office, and interacting with other virtual (living and deceased) people and employees.

One way and two way immortality

In this paper we are not concerned with futuristic ideas of how to create “artificial intelligences” such as methods of transferring “souls” or “thoughts” to an everlasting digital brain. Instead we are only considering what could be done today, and over the next few years. Thus in exploring digital immortality it is useful to think of two different categories of digital immortality: one-way immortality and two-way immortality. The former is typified by the Facebook memorial pages and other examples given earlier. It is where the deceased has a digital presence on-line that extends after their death, but that presence is purely “read-only”. It is possible to view it, read it, even get messages from it, but not to engage in a dialogue with it. One-way immortality can also be classified into automated, where the presence is just built up naturally, passively, from the lived life (such as a Facebook page or blog), or manual, where the deceased has actively curated a set of information to be preserved beyond their death. A manual/active one-way immortality would also include after-death messages, such as Remembered Voices and ToLovedOnes and paper wills.

Two-way immortality is where there is the potential for the digital identity to interact with the living world. This interaction could come in a wide variety of ways, from 2-way text or even voice and video conversations to analysis of stock

market activities and buy and sell orders, as described in the interaction section above. What probably separates an immortal “identity” from a set of scripted rules is: the ability (and indeed necessity?) to change over time, the ability to engage in multiple modes (email, APIs, text chat), and to share information between these modes. These categories are summarised in Table 1 below.

Table 1 Categories of digital immortality

	One-Way Immortality		Scripted Systems	Two-Way Immortality
	Automated	Manual		
Actively created/curated before death	No	Yes	Yes/No	Yes/No
Able to show past life	Yes	Yes	Yes	Yes
Able to pass messages immediately after death	No	Yes	Yes	Yes
Able to respond to future events	No	No	Yes	Yes
Able to change way responds to future events	No	No	No	Yes
Able to share information between systems	No	No	No	Yes
Sense of “talking” to the deceased	No	No	No	Yes
Examples	Facebook page	ToLovedOnes	Trading Rules	??

3. Legislative Conundrums of Pre and Post Death

The digital world therefore opens up an unimaginably diverse range of opportunities for one individual’s identity to perpetuate after the death of their real, human being. An existence, of some form, may continue to involve itself in social commentary or undertake business transactions, when the physical entity in whose name it purports to act is rendered nothing more than ashes. This presents some clear legal issues. What if, for example, the digital identity shares an opinion that causes offence, perhaps making allegations that a named individual is a paedophile? In the ‘real’ world, that individual may have cause for legal action, depending on where in the world they were resident, the allegation was made, and where it was published. These details are important; the world does not offer one global jurisdiction, and the laws that apply in one country (or even within different states) may not necessarily apply elsewhere.

Whilst deciding within which jurisdiction to bring an action may prove challenging where the facts of a case are tangible – for example where an English visitor allegedly suffers negligence at the hands of a visiting Peruvian chiropractor whilst visiting the US State of Nebraska – the demands may be even more exigent in the virtual world. For example, the case of *Al Amoudi v Brisard and Another* (2006) considered the issue of internet publications and libel, and whether posting of allegedly defamatory information on the website of a Swiss company fell within the jurisdiction of the English court. It highlighted the complexities associated with

establishing ‘substantial publication’ for the purposes of an action in libel, and particularly in relation to publication on the internet, a ‘unique medium of international communication’ which necessitates the re-evaluation of the law of defamation (*Al Amoudi v Brisard and Another* 2006: para 22). These difficulties notwithstanding, this case rests on individuals with a real presence. What if a claimant were to attempt an action in libel against a virtual presence? In UK law defamation is a civil offence, so the claimant would be seeking to sue an entity purporting to be an individual that no longer exists. How might this be possible? If the entity was acting under the deceased’s autonomous control, for example a perpetuating social media presence, then the claimant may attempt to sue the dead persons’ estate. Even if it were possible to prove the elements of libel, the action would generally be subject to the statutory limitation “of one year from the date on which the cause of action accrued” (Limitation Act 1980 s4A (b)), and then would arise the question of whether there was actually an estate to sue – this will cease to exist once probate has settled. What liability do website operators have for defamatory comments they host? What if the potential action sits outside the jurisdiction of the English court, for example elsewhere in the EU, or in the US? The answers to these questions must be framed within the context of a range of caveats and conditions. For example, although there is generally no liability for defamation if the operator of a website can show that they have not posted the comment, this will not always provide an effective defence in English law (see for example, Defamation Act 2013 section 5 (1)–(3)).

What if the actions of the virtual presence represent potential criminal liability? This raises the question again about the driving force behind the virtual presence; the dead can generally have no criminal liability, but others acting behind the shield of a digital presence may have. Again, determining liability will depend on a diverse range of factors, not least the determination of the jurisdiction in which the alleged criminal act took place, where its effects were experienced, and by whom. For example, if Mr. X assumes the identity of deceased child Y to construct a digital identity and then goes on to use this to drive fraudulent activity; he may face criminal conviction for fraud by false representation (Fraud Act 2006), with the fact of the child’s death acting as an aggravating factor. The digital world is diverse, and evolving and complex. Even where consideration is limited to social media, the complexity of policies surrounding governance of an individual’s presence post-death is great. Indeed, in a paper exploring the policies that define Facebook after death, McCallig (2013: 7) identifies that: “...individual users enter a dynamic and complex legal agreement when they operate a Facebook account. Even for a person with reasonable technical and legal skills, negotiating the provisions and policies takes considerable effort. There is no provision that expressly terminates the contractual agreement between Facebook and a user who dies. This is not exceptional.”

These policies will govern the storage of personal data after death (subject within the European Union to data protection laws), access by third parties, and the archiving and deleting of data. Given the intricacy of this corporate regulation, and the plethora of media with their own governance protocols, there must be some argument for initiating some consistent and accessible approach to legislation and governance of the post-death presence. This section has presented many questions, and very few answers. This is the nature of the virtual world – an ever expanding and evolving entity that often transcends legal and geographical boundaries. The law is generally used as a means of controlling and restraining malignant behaviours, and making punishments and attempts at reparation when harm is done. This is generally challenging in the ‘real world’ where the parties to an unlawful act are tangible and visible. The assiduous development of the virtual world makes this ever more exigent (*Al Amoudi v Brisard and Another* [2006] 3 All ER 294).

4. Discussion

Parameters, rules and data sound all very well, but will our digital immortality actually have “intelligence” – or to use a better phrase “sentience” – and does it matter if it has that or not?

If we take neo-liberal capitalism to be ultimately about the power of the individual (and the control of assets exerted by the individual), then digital immortality could enable individuals to perpetuate their control and influence on an indefinite basis. There is the potential for the (unfettered) control of power, capital and the means of production, by creating a digital immortal beyond the grave, running their corporations way off into the future – think what Warren Buffet (or conversely Donald Trump) might achieve if he were to become immortal.

Whilst rules, and indeed quite complex rules, will give the illusion of rational decision making what we need is not just decision making but “reasoning”; the ability to address a problem having complex inputs and grey areas, with the application of a coherent decision making process. Relatively simple seeming human questions or decisions, whether with a financial or emotional impact, can be very hard for a computer to try and unpick, but this has to be the challenge, and will add significantly to the illusion of the digital immortal possessing intelligence. However, just being able to reason here and now is not enough. The digital immortal needs to be able to evolve its reasoning processes, and indeed its whole code, data and interface to keep up with the changes in the world around it. At the most trivial level the computer languages, hardware and communications systems on which the web is based on did not exist 30 years ago. NASA probes are designed to work for a decade plus, but they have a very fixed environment. How does the digital immortality system manage this evolution? How do we move from what might give us 10–20 years of digital longevity to an infinite span of digital immortality? Whilst the temptation is to think of a fix for this in technical terms

(and that is no doubt the long term goal), in the shorter term we may be better considering the fix as being a business/social one. However, less within the control of the digital immortal would be its risk from hacking, and particularly from an “insider-threat”. A digital immortal (and/or its creator) is likely to put in a variety of measures to protect against this:

- Multiple copies and high levels of redundancy
- A modular, federated structure to minimise any damage
- Back-up copies
- High levels of firewalls and anti-virus software. Monitoring and defences
- High levels of user authentication for those with privileged access to the digital immortality
- High levels of integrity/consistency checking to ensure that no code or data has become corrupted.

If the digital immortal is in control of assets (wealth, people, companies) then there is nothing to stop it ensuring that there is a long term strategy for its evolution in place, and people paid, motivated (and obliged?) to ensure that the digital immortality is kept current in terms of technology and interfaces. A “clever” digital immortality may indeed run several such programmes, and hide the true nature of some or all of those programmes from the workers. Not a Machiavellian artificial intelligence, just a well-planned and programmed digital immortal. Situated in the context of higher education this could also sustain what is currently a pernicious ideology. For example, Ingleby (2015) argues that at the centre of the neoliberal agenda shaping the educational context in the UK is a belief in competitive individualism and the maximisation of the market. Critics of neoliberalism (for example, Giroux, 2005) suggest the focus on economic outcomes results in unhelpful social, political, and cultural biases for educational activities. Further, Giroux and Giroux have argued that educators should build courses by combining ‘democratic principles, values, and practices with... the histories and struggles of those often marginalized because of race, class, gender, disability, or age’ (2004: 99). They argue that academics should shift beyond the lands of academia and integrate with the larger spheres in the community, where culture and politics are truly learned and made relevant. Thus if we continue to engage with performative enterprise practices and fail to recreate spaces and voices, universities will soon become sites of closure, where criticality and questioning are submerged in the quest for fast money and solid learning. It would seem that the focus on consumerism and competences is resulting not only in the erosion of critical pedagogy but also the marketization of values and the oppression of freedom (Mayo, 2013; Williams, 2013).

There are still questions that remain about the ideological underpinnings of digital immortality, since the search for such immortality is grounded in a human desire for control over life as well as death. Such a situation could be said to support and reinforce global neoliberal values, since it plays on the fears and hopes of humans whose lives have been about amassing personal resources they would

wish to retain beyond death. As academics we are, as Ball (2012) suggests, becoming calculable rather than memorable (17). The result it would seem is that it is possible to see a resonance between the state of our neoliberal capital higher education system and digital immortality: both are focussed on the retention and management of knowledge and assets. Both seek competitive advantage and reinvention of themselves as a resource. Academics and digital immortals both have identities on tour, both seek to affect and manipulate market values. Yet perhaps as academics there is hope, if we can understand the powerful influences upon us and be responsible enough to fight against oppression and for freedom of speech.

5. Conclusions

This paper illustrates that a key concern for any form of digital immortality will be to maintain its own integrity. At the most basic level this will be to ensure that it has the hosting environment (public or private) on which to operate. Almost the whole *raison d'être* of a digital immortal is to be 'immortal', so ensuring that its code and data is preserved and runs will be a key concern. Again there is a considerable difference in approach between the creation of a digital immortal which is the hobby project of a programmer, and the digital immortality which is the legacy project of a high-net-worth individual, business leader or entrepreneur. In the latter case they have significant resources to call on, and as discussed earlier could set up a whole living human eco-system to ensure the preservation and continuing operation of the digital immortal. Perhaps much of what we are currently seeing is more of a ruse than a reality, and yet the only thing more chilling than digital immortality is in fact hacked digital immortality.

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FEATURE ARTICLE: INTERVIEW WITH SIÂN BAYNE

**FROM ANTHROPOCENTRIC HUMANISM TO
CRITICAL POSTHUMANISM IN DIGITAL EDUCATION****SIÂN BAYNE**

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ABSTRACT. In this conversation, Siân Bayne explains theoretical and practical underpinnings of the Digital Education Group's *Manifesto for teaching online*. She defines posthumanism in relation to transhumanism, and describes the relationships between posthumanism and human learning. The conversation moves on to the historic concepts of cyberspace and cyborg. While these concepts have become slightly obsolete, the notions of smooth and striated cyberspaces, as well as the notion of cyborg learner, still offer a lot of value for contemporary digital learning. The conversation introduces the feeling of uncanny as a useful perspective for discussing the experience of digital learning. It moves on to show that approaching digital education through the lens of (digital) cultural studies is slightly dated, and offers another way of looking at digital experiences through social topologies of distance students. It analyses the metaphor of the network, shows that it still offers a lot of value, and concludes that it should be complemented by other approaches and metaphors. Looking at past concepts, it analyses the main problems with Prensky's digital native – digital immigrant binary, and calls for its complete abandon. The conversation looks into the relationships between open access to information and open education, links openness and creativity, and shows that every act of opening is simultaneously an act of closure. On that basis, it dismantles the myth that open education is a democratizing, liberating, and empowering end in itself. The conversation shows that distance is a positive principle, and that education at a distance can indeed be better than classroom education. It analyses the relationships between big data, algorithms, and the politics of data science, and calls for balancing interests of corporations and the interests of the academy. It explores teacher automation through Bayne's experience with teacherbots, and analyses the present and future of the Massive Open Online Courses (MOOCs). It analyses important contributions to the field by the networked learning community, and concludes that networked learning (NL) approach is much more advanced than the technology enhanced

learning (TEL) approach. Finally, it advocates reaching beyond the entrenched, embodied legacy of humanism within education, and calls for approaching contemporary digital learning from a critical posthumanist perspective.

Keywords: critical posthumanism; digital learning; manifesto; cyberspace; smooth space; striated space; cyborg; uncanny; digital natives; digital immigrants; digital privilege; open education; digitization; plagiarism; algorithm; TEL; MOOC; artificial intelligence; networked learning

Siân Bayne is Professor of Digital Education at the University of Edinburgh, based in the Moray House School of Education, where she directs the Centre for Research in Digital Education. In 2004, Siân and colleagues launched the world renowned MSc in E-Learning, now the MSc in Digital Education. Siân's background includes English literature, digitization, museum heritage, and open education. Her current research interests revolve around the changes undergoing learning and teaching as it shifts online – current particular interests are around posthumanism and online education, the geographies of distance education, and critical digital pedagogies. Her research is informed by approaches issuing from critical posthumanism, and is particularly concerned with the need to work against the idea of digital education as a purely technical concern.

Siân has published numerous journal articles, book chapters and project reports. Siân has been involved, often in leading roles, in numerous research projects such as 'The digital futures of cultural heritage education: a social media research agenda for the Scottish National Collections' (Bayne, Ross and Bailey) (Royal Commission on the Ancient and Historical Monuments of Scotland, 2016), 'New geographies of learning: Distance education and being 'at' The University of Edinburgh' (Bayne, Macleod, O'Shea and Ross) (University of Edinburgh, 2016a), 'Putting art on the map' (Bayne) (University of Edinburgh, 2016b), 'Coding the MOOC teacher' (Bayne, Ross, Macleod, Sinclair, Knox, Mehrpouya, Lee and Speed) (University of Edinburgh, 2016c), 'Managing your digital footprint' (Connelly, Bayne, Osborne and Bunni) (University of Edinburgh, 2016d), and 'Dissertations at a distance' (Ross, O'Shea and Bayne) (University of Edinburgh, 2016e).

Siân has published three books: *Digital differences: Perspectives on online education* (Bayne and Land, 2011), *Education in cyberspace* (Land and Bayne, 2005), *Research, boundaries, and policy in networked learning* (Ryberg, Sinclair, Bayne, and de Laat, 2016). In 2008, she received the University of Edinburgh Chancellor's Award for Teaching (University of Edinburgh, 2016f). In 2016, she received the Edinburgh University Students' Association (EUSA) Best Research or Dissertation Supervisor Award (Edinburgh University's Student Association, 2016). In 2016, Siân and her colleagues produced the second version of the widely cited *Manifesto for teaching online* (Digital Education Group, 2016).

In this article, Siân discusses her ideas with Petar Jandrić. Petar is an educator, researcher and activist. He published three books, several dozens of scholarly articles and chapters, and numerous popular articles. Petar's books have been published in Croatian, English and Serbian. He regularly participates in national and international educational projects and policy initiatives. Petar's background is in physics, education and information science, and his research interests are situated at the post-disciplinary intersections between technologies, pedagogies and the society. Petar worked at Croatian Academic and Research Network, University of Edinburgh, Glasgow School of Art, and University of East London. At present he works as professor and director of BSc (Informatics) programme at the

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The Manifesto for teaching online

Petar Jandrić (PJ): I would like to start this discussion with the *Manifesto for teaching online* (Digital Education Group, 2016):

Online can be the privileged mode. Distance is a positive principle, not a deficit. Place is differently, not less, important online. Text has been troubled: many modes matter in representing academic knowledge. We should attend to the materialities of digital education. The social isn't the whole story. Openness is neither neutral nor natural: it creates and depends on closures. Can we stop talking about digital natives? Digital education reshapes its subjects. The possibility of the 'online version' is overstated. There are many ways to get it right online. 'Best practice' neglects context. Distance is temporal, affective, political: not simply spatial. Aesthetics matter: interface design shapes learning. Massiveness is more than learning at scale: it also brings complexity and diversity. Online teaching need not be complicit with the instrumentalisation of education. A digital assignment can live on. It can be iterative, public, risky, and multi-voiced. Remixing digital content redefines authorship. Contact works in multiple ways. Face-time is over-valued. Online teaching should not be downgraded into 'facilitation'. Assessment is an act of interpretation, not just measurement. Algorithms and analytics re-code education: pay attention! A routine of plagiarism detection structures-in distrust. Online courses are prone to cultures of surveillance. Visibility is a pedagogical and ethical issue. Automation need not impoverish education: we welcome our new robot colleagues. Don't succumb to campus envy: we are the campus.

Why did you decide to write the *Manifesto*? What are its main theoretical and practical underpinnings?

Siân Bayne (SB): The *Manifesto* is designed to provoke the field of digital education practice by trying to distil some of the most interesting research findings and theoretical perspectives into punchy statements that could be used as starting points for discussion. I suppose we were working against the tendency for technology to be used instrumentally within education, which is often underpinned by approaches which understand technology as the primary force driving educational practice. We were trying to distil arguments against this type of thinking, and to get people to think about some of the critical dimensions of educational practice. The *Manifesto* is aimed at practitioners, so it tries to provoke and to move forward some of the ways that we think about digital education practice. In that regard, I think that the *Manifesto* has worked really well – it has been well received, and it prompted quite a lot of responses and discussions.

PJ: The *Manifesto for teaching online* (Digital Education Group, 2016), and also your work in more general, is heavily influenced by posthumanism. Please describe the relationships between posthumanism and human learning.

SB: Posthumanism is concerned with the questioning of the foundational role of ‘humanity’ as it has been constructed in modernity. Rejecting clear distinctions between ‘nature’ and ‘culture’, it also rejects dualisms and the binaries we have tended to draw on to define what it means to be human in the world: human/machine, human/animal, subject/object, self/other and so on.

Posthumanist thought within education is a way of addressing the failures of the humanist assumptions which, I would say, have driven much educational research and practice over the last few decades. Posthumanism is useful, because it asks people to think what would education look like if we did not take a position which sees the human as a kind of transcendent observer of the world. Instead, it sees humans as entangled with the world. Posthumanism does not see education as being about production of a certain kind of humanist subject. Instead, it sees education as what Richard Edwards (2010) calls a ‘gathering’. So for me, it is quite a radical way of thinking about some of the predicaments that we are facing at a global scale such as climate change, and the age of automation and algorithm. In order to confront these, we need to shift away from the default humanism that underpins most educational practice.

PJ: Posthumanism and transhumanism are often used as synonyms. Yet, your work shows that the two “are in fact in radical tension with each other” (Bayne, 2014: 12). What are the main differences between posthumanism and transhumanism? Why are they important?

SB: I would agree here with some of the theorists in critical posthumanism (e.g. Wolfe, 2003) who point out that transhumanism is essentially an extension of the humanist agenda – it is about the inevitability of scientific progression, about the capacity of human beings to reengineer themselves, about seeing the human as something that has the capacity to become better and better through scientific progress and technology development. Posthumanism, in its critical forms, is more about thinking about what it means to be a human subject, and the extent to which the notion of the human subject is still useful. Transhumanism and posthumanism are radically different – transhumanism is an extension of the humanist project, whereas posthumanism is critical of humanism.

PJ: Published in 2004, your PhD dissertation is entitled *Learning cultures in cyberspace* (Bayne, 2004). Only a year after, you and Ray Land published the book *Education in cyberspace* (Land and Bayne, 2005). What is cyberspace? What are the main similarities and differences between cyberspaces and our ‘regular’ spaces?

SB: Research has moved quite a way since Ray and I published that book. Cyberspace, which was about the sense of newness and the potential of the online during the 1990s, has become a legacy term – no-one uses it any more. In order to explain why, insights from digital and virtual ethnography which have developed

during the past decade or so are useful (e.g. Hine, 2000; Miller and Slater, 2001). This body of work suggests that the online and the digital is not a special or separate domain from embodied, co-present spaces that we inhabit day to day – instead, the two kinds of spaces are inextricably linked with each other.

In education, there is a lot of work to be done in this area – for example, in thinking about the mutual embodying of the online space and campus space. I think the major challenge is shifting universities away from the assumption that presence is the privileged mode, that to be on campus is the only way in which students are able to experience real, authentic higher education. Instead, we should think about what it means to have a global campus, what it means for the campus to extend beyond the material into the digital, and what it might mean for the university to genuinely treat distance online students as equal to those who are present on campus. I think it is a huge challenge.

PJ: Apparently, cyberspace can be smooth and / or striated (Bayne, 2004a: 155–172; Bayne, 2004b). Please describe these concepts. What is their relevance for human learning?

SB: Your question is drawn from quite an old paper which is using the notion of smooth and striated space from Deleuze and Guattari (1988). Back in 2004, I suggested that there were ‘striated’ kinds of digital learning spaces such as the regulated, hierarchical matrix of virtual learning environments. Then there were emergent spaces of the World Wide Web that I described – drawing on Deleuze and Guattari – as ‘smooth’ – non-hierarchical spaces, spaces of anonymity, spaces in which things could happen differently. However, you cannot take a strong binary approach to these things – Deleuze and Guattari are very clear that the most interesting thing about smooth and striated spaces are ways in which they permeate and appropriate each other.

Just like in the early 2000s, in today’s digital education it is still possible to think about the emergence of smooth and striated spaces. I think that Massive Open Online Courses (MOOCs) were a great example of the rearticulation of smoothness and striation for more current learning technologies. In the beginning we had the cMOOCs, which were experimental spaces. Dave Cormier’s work on the Rhizo MOOCs, for example, was genuinely trying to explore what a smooth Internet space might look like in massive higher education (Honeychurch, Stewart, Bali, Hogue, and Cormier, 2016). Then later, in 2013–2014, the xMOOCs emerged, conducted on Coursera and other platforms, which produced strongly striated spaces. So I think that the metaphor of smooth and striated is still apparent, and that we can apply this metaphor to contemporary digital education.

PJ: Speaking of cyberspace, we cannot avoid its main protagonist: the cyborg. Who / what is the cyborg? How does the cyborg learn; how should he/she/it be taught?

SB: Cyborg is a bit like cyberspace – nowadays it is used much less. Haraway’s cyborg theory (1991) was very radical – these days, it is still very deeply influential. The body of literature which emerged in the late 1990s and the early

2000s about cyborg pedagogy is still really useful and influential in the field of digital education. However, most digital education practice still has not taken onboard the idea that the cyborg learner, or the online learner, or the digital learner, is a different kind of subject.

PJ: Arguably, the cyborg is a typical example of an uncanny figure. According to Royle,

The uncanny is ghostly. It is concerned with the strange, weird and mysterious, with a flickering sense (but not conviction) of something supernatural. The uncanny involves feelings of uncertainty, in particular regarding the reality of who one is and what is being experienced. Suddenly one's sense of oneself ... seems strangely questionable. ... It is a crisis of the natural, touching upon everything that one might have thought was 'part of nature': one's own nature, human nature, the nature of reality and the world. But the uncanny is not simply an experience of strangeness or alienation. More specifically, it is a peculiar commingling of the familiar and unfamiliar. ... As a crisis of the proper and natural, it disturbs any straightforward sense of what is inside and what is outside. The uncanny has to do with a strangeness of framing and borders, an experience of liminality (Royle, 2003).

Your work explores "the notion of the uncanny as a way of thinking through some of the more radical and, ironically, enlivening implications of digitality for our academic practice" (Bayne, 2010: 11). How can we employ the concept of the uncanny for better understanding of teaching and learning?

SB: Back in 2010, I wrote that paper in response to the emergence of virtual worlds as environments for learning, in particular Second Life. My students found these environments, where they were replicated as a kind of Doppelganger, very uncanny – as an avatar their representation was both familiar and deeply unfamiliar to them. Furthermore, the kinds of things that would happen to students in these virtual worlds could be very strange and could create ontological uncertainty in terms of how we identify with our avatars, what 'we' become when 'we' are immersed in virtual space. I felt the same things, as a teacher. When I first started using Second Life for teaching, I wanted to try and connect that sense of the uncanny to some of the other literatures which were focused, at that time, on the notions of troublesome knowledge, spatial concepts, liminality, difficulty and strangeness about higher education (Meyer and Land, 2005). So I was thinking how can we use these digital environments, which are in themselves materially uncanny, to emphasise in a creative way the generative uncanniness of undertaking higher education, how it requires us to take new subject positions, develop new kinds of identities, learn and play in different kinds of spaces – literally and metaphorically.

For me, at a time, the notion of the uncanny was a really useful framing of what I thought that the contribution of digital education could be to education generally – and I still think that is the case. Although, obviously, as everything in digital education moves on so quickly, the kinds of uncanniness we are now experiencing

are quite different. They are more to do with big data, with algorithmic cultures... When you get a Tweet coming to your Twitter feed, which may or may not be generated by a bot – that creates a kind of ontological confusion. Or, when you see something on Facebook, and you think how these posts are generated and how they relate to your own personal history or your own personal identity within these social spaces – that also creates a profound sense of uncanniness. On that basis, I think that the uncanny is still very much a part of digital life, and therefore of digital education as well.

PJ: The feeling of uncanny has provoked some of the best science fiction out there – Gibson’s *Neuromancer* (1984) is a typical case in the point. And, I could not help but notice that your curricula are packed with fictional sources... What is the relationship between fictional and scientific accounts of posthumanism? How do they inform each other; how do you use their interplay in your work?

SB: I think science fiction has been very useful in preparing us for answering some of the difficult questions about posthumanism. For example, how might we deal with the notion of artificial intelligence, machine extensions, ethical distinctions we might draw between the human and the non-human... Going back to *Frankenstein* and earlier, there is a strong trajectory of science fiction texts which help us to grapple with these questions. Today, we are getting to the point where many of these texts seem more realistic than they ever have been! So I think we are quite well positioned, thanks to these science fiction authors, to deal with issues such as what we want artificial intelligence in education to look like, how automation of aspects of teaching might affect our students and our profession, how the politics of algorithms might work for – or against – our students’ interests and so on.

All those quite difficult ethical questions have been quite useful to us. When we are looking at developing new educational technologies, and new educational uses of existing technologies, we could therefore do worse than look back to some of the science fiction writing in this area. For example, we ask our students in the course on digital education to read some early science fiction texts such as *The time machine* (Wells, 1895), to help them prepare for some of more troubling and challenging questions they are going to have to address when thinking about the future of digital education.

Distance is a positive principle

PJ: In the second part of the 20th century, people such as Henry Giroux and Peter McLaren have brought the perspective of cultural studies into educational research and practice. What does it mean to look at human learning from the position of digital cultural studies?

SB: I am not sure that digital culture is a very useful term any more... maybe it was in the 1990s and the early 2000s, when we were thinking about what was new and exciting about the digital. But now, as we shift into a post-digital era, it is less useful to think about digital cultural studies as something which is separate from cultural studies itself. It is a bit like our earlier conversation about cyberspace. I am

not sure that it is easy any more – if it ever was – to separate digital culture from material culture. I suppose I am more interested in thinking about the social and the material connections around online and offline culture, perhaps trying to move beyond this notion of digital culture as a separate thing.

PJ: It surprises me that you decided to move beyond the notion of digital cultures so quickly... Just a few years back, you rebranded your MSc in E-Learning to MSc in Digital Education (University of Edinburgh, 2016g), and you are already over it...

SB: Back in 2014, when we made that change, I think we would probably have preferred to call it post-digital education, but it seemed too early... Our field changes quickly, and in 2–3 years from now, we are bound to need to devise a new set of terms.

PJ: Speaking of the past: for more than a decade, you have been a fierce critic of Marc Prensky's (2001) popular trope Digital natives, digital immigrants (Ross and Bayne, 2007; Bayne and Ross, 2011). What are the main problems with this trope? Why should we stop thinking about digital learning through this binary?

SB: Since Jen and I wrote that paper, back in 2007, the whole Prensky binary has been taken apart from multiple perspectives and there has been a lot of empirical evidence that generation does not determine approach to using technology (Kennedy and Krause, 2008). There were a lot of quite big projects, around the world, which demonstrated that point. So Jen and I wanted to engage with that binary from a critical perspective, and look at how native-immigrant discourse structurally deprivileged teachers. The native-immigrant binary aligns teachers with the immigrant (backward looking, analogue, legacy) and students with the native (forward looking, multitasking, digital), and provokes deeply essentialist conclusions which worked to de-value teaching as a profession. It very effectively draws a kind of invisible wedge between teachers and students, and suggests that teachers as immigrants are never going to be able to effectively teach the native generation of students. Therefore, the native-immigrant binary has had long term bad effects on the ways in which technology is being seen within education.

These days, the empirical evidence and critical understanding around this issue have moved on to the extent that we do not hear too much about digital immigrants. The term has just become too politicized... However, we do find that the notion of digital native is still very current, perhaps not so much within the academia, but definitely within policy discourses and mainstream news media. So the damaging native-immigrant binary continues to influence the ways in which we think about the effects of technology on education. We probably just have to keep making this point, and hope that eventually some day and in some future it will go away.

PJ: Your recent article “Being ‘at’ university: the social topologies of distance students” (Bayne, Gallagher and Lamb, 2013) explores the notions of space and mobility in the age of digital cultures. Please describe the new social topologies

emerging from distance teaching and learning. What is their relation to the traditional, on-campus topologies?

SB: That piece of work was drawing on Annemarie Mol and John Law's work on social topology, over quite a few publications (Mol and Law, 1994; Law and Mol, 2001; Law, 2002), in which they have drawn a distinction between four different kinds of spaces: bounded space, networked space, fluid space, and space of fire. We wanted to think whether we could use those spatial topologies to rethink the dominance of sedentarism within universities. By sedentarism, I mean the tendency to privilege the on-campus, the present, the here, and to deprivilege the distant, the not here, the overseas, the globally distributed (Sheller and Urry, 2006). I found those four different kinds of social topology really useful.

The notion of bounded space, which Mol and Law talk about (Mol and Law, 1994), fits really well into ways in which we traditionally think about campus space or city space. To be at university is to be within the bounded space of the campus. The idea of networked space, again, matches quite well onto traditional notions of online networked learning, which is more about the relational nature of being online. I found that the notion of fluid space, which is where boundaries and network nodes are constantly shifting, matches really well with the contemporary digital education working across multiple environments, with multiple spaces, and with highly mobile subjectivities, which are informed not just by humanistic assumptions, but also by the ways in which they are constructed through data, algorithms and networks. Fire space, characterised by the flickering of presence and absence, also applies interestingly to the ways we 'do' education online: both there and not-there simultaneously. I found this to be a really useful framework for arguing for more topological multiplicity within the way in which we think about what it means to study at the university. There is still more work to be done with these notions of space – these conclusions are just a starting point.

PJ: Speaking of networked society (Van Dijk, 1999; Castells, 2001), networked learning, and networked labour, we often forget that the concept of the network, certainly within the context of the social sciences, is actually just a metaphor. And, like all metaphors, it carries along many limitations and opportunities. Please analyse the metaphor of the network – what are its limitations and opportunities in the context of education?

SB: This links to the previous question about the different kinds of social topology and the works of Mol and Law. Currently, digital education is built around the idea of the network, which is a valuable metaphor in its own right. However, we do need nuances, and we do need to think about topological and / or metaphorical multiplicity. The network is not enough, so we need to think how it relates to other kinds of connections which may be more fluid, flickering, and volatile. I do not think the metaphor of the network is done with – we need it to move forward, but we also need to temper it and bring it up against other models and metaphors for understanding spaces of learning in a digital world.

PJ: Arguably, one of the strongest and most consistent messages in your work can be described by the following quote: “The digital represents not an enhancement to, extension of, or substitute for familiar, offline practices. Rather, it is a privileged mode, one in which new ontological positionings, and new dispositions toward teaching and toward knowledge might be explored and delighted in” (Bayne, 2010: 11).

Also, the first sentence in the *Manifesto for teaching online* is: “Online can be the privileged mode” (Digital Education Group, 2016). What is the digital privilege; how does it manifest?

SB: When you say digital privilege, it seems like you are saying that people who are studying in the digital realm are more privileged in social terms. However, what we really address is the sense in which higher education has privileged the notion of being on campus and deprivileged the notion of being at a distance. My argument would be, that even by using the term distance learning, we are assuming the on-campus as the norm and digital education at a distance as a kind of deviant position. The *Manifesto* deliberately sets out to provoke and to try and shift that position by opening up the idea that the online can be the privileged mode. In short, online can be better!

We see a lot of this with our students... Students who have studied really good online programs often say: “That was way better than anything I experienced on campus, for this or that reason”. I think that we just need to keep saying over and over again that online can be the privileged mode – that distance is not the second best. Distance is a positive principle. This is indeed one of the strongest and the most consistent messages that has come out of my work and the work of my colleagues. And that is why we used it to kick off the *Manifesto*.

PJ: In 2015, together with Jeremy Knox and Jen Ross, you edited a Special Issue of Learning, Media and Technology entitled Open Education: The need for a critical approach (Bayne, Knox and Ross, 2015). What is open education and why is it so important?

SB: There are lots of definitions of open education. In the context of your question, open education is a way of enabling access to education and educational materials to those who are not enrolled in formal education or do not have the means to buy expensive texts, journal articles, and other materials. We published that Special Issue in response to the strong metanarrative or driving discourse around the open education movement, which sees openness as a democratizing force, and which results in openness of educational materials as an end in itself. The voices which try and critique that view are quite few and far between. In the Special Issue, for example, Richard Edwards (Edwards, 2015), talks about how you cannot have openness without also having closures. So any kind of open education initiative will simultaneously open up education to some people and close off education to other people. For example, a MOOC will open education to a massive population of global learners, and will close off access to those who like a more personal, one-

to-one relationship with their peers and their teachers. There are lots of examples of this.

At the time that we produced that Special Issue, there was a strong need to gather some of the voices which were saying that open education is not a democratizing, liberating, and empowering end in itself. Open education is also burdened with problems, and the Special Issue contains quite a few papers dealing with those problems. For example, some papers (i.e. Winn, 2015) look to the implications of open education for academic labour – how the drive and the imperative to open up educational resources creates a situation where educators feel that they have to work harder to produce those artefacts and resources. Obviously, that has profound implications for unpaid academic labour... MOOCs, for example, tend to be taught by precariously-positioned teaching associates rather than well-paid academics. Open education is packed with critical issues, and the Special Issue was an attempt to summarize some of those critical perspectives and to stimulate further thinking on the kinds of discussion that we need to have within the open education movement and take it forward in a good way.

PJ: What is the link between openness and creativity?

SB: I am frustrated, quite regularly, with the ways in which limits are placed on students' and anyone's ability to use digitized resources to create new artefacts. Applied to digital resources, copyright and intellectual property rights are a huge problem! For example, when we ran a MOOC 'E-learning and digital cultures' (University of Edinburgh, 2016h), we asked learners to create digital artefacts using resources they find on the Internet – you have to always make sure to obtain a permission to use the found resources, or to use only resources which are licenced through Creative Commons... I think these restrictions continually place limits on what students can do. This has come particularly to the fore in the work I have done with museum learning and museum collections (Bayne, Ross and Williamson, 2009), where we still find fantastic digitized collections of major artists which are not available for hacking and adapting by students and members of the public – because of copyright licensing issues. There is a massive body of scholarship in this area, but I still think there is a long way to go before we will be able to really creatively use open resources with our students.

PJ: In the digital age, digitization is prerequisite for openness. Based on your practical experiences, what are the main effects of digitizing cultural heritage? What is gained and what is lost during the process of digitization?

SB: We did some early projects on museum learning and digitization (Bayne, Ross and Williamson, 2009), and what came out of that research, quite strongly, is that museums were still focused in the main on material artefacts – digital representations are often seen as a weak alternative to the real thing. In many cases, this is obviously true... To see a painting *in situ*, in a gallery or in a public space, is often very different experience from a digital impression in the catalogue. Consequently, we found that there was still a very strong focus on visitor volume within the museum, and that the digital is seen as being in service to the material

collections, of value to the extent it drives physical footfall. Thus, in many cases, digital projects were aiming to try and stimulate higher visitor levels to the actual physical museum. However, I think that things are probably changing quite rapidly in the digital cultural heritage field. These days we are in a better position to see what is rich about artworks that are born digital, and it helps us to see the digital as valuable in its own right.

PJ: In a recent article, Michael Peters and I defined digital reading as “a cybercultural concept which understands reading as a cultural behavior that emphasizes an ecosystem of digital practices” (Peters and Jandrić, 2016: 154). In your work, the theme of digital reading and digital writing seems to pop up regularly at least since *Learning cultures in cyberspace* (Bayne, 2004). What is your take on digital reading and writing? What are the main cultural implications of these practices?

SB: In the context of education, these practices open up some really profound issues which I am not sure that universities and teachers have really come to terms with. Kathleen Fitzpatrick’s work (2011), for example, helps us understand the ways in which digital text separates the author from the text in a way in which print media did not. Digital authorship is volatile, messy, changeable, where print text is stable and preservable. The link between text and author is loosened with digital texts, which has profound implications for how we think about – for example – the assessment of students’ work. I wrote about this back in 2006 (Bayne, 2006) drawing on Mark Poster’s work (2001) on Foucault’s author function.

In the context of education, we need to be really careful about these things – particularly, as I say, when it comes to assessment practices. Assessment is still for the most part based on written text. We have not really grappled with what digital text might mean in that context, except to see it as an ongoing risk of plagiarism. So when we talk about digital texts in universities, and in digital education practice in particular, we tend to focus on the various risks of plagiarism, plagiarism detection... One of the most commonly used technologies within higher education is plagiarism detection software like Turnitin. However, plagiarism detection services often do not think about the creative potential of digital text for scholarship and academic writing. How can we use that risky volatility, copyability, rewritability, customizability of the digital text within university teaching, learning and assessment? At our MSc in Digital Education (University of Edinburgh, 2016g) we ask students to submit digital texts for assessment, and we ask them to think critically about what digital text does to notions of authorship, authenticity, and so on. We need to do a lot more research about digital texts within universities. There is still not that much work in the area, and I think it is really exciting.

Towards a critical posthumanist approach

PJ: During the past decades, algorithms have become ubiquitous actors in the global economy, as well as our social and material worlds – slowly but surely, we

have entered the age of algorithmic cultures. What is the role of algorithms in education?

SB: As teachers, we need to give serious thought to how we want to partner with algorithms to conduct our work. We need to think about what an algorithmically inflected teacher would look like, and some of this comes back to the posthumanist notion of where the human stops and where the machine starts. So the question is: Where does the human teacher leak into the algorithm, and where does the algorithm leak into the human teacher's practice? For me, Andrew Feenberg's work (i.e. Feenberg, 2003) has been really influential in relation to thinking where the social and the material worlds come together – where the human teacher's agency comes up against the workings of data to conduct another, and different, kind of teaching which is neither human nor machinic but some kind of gathering of the two.

In higher education, we tend to focus on the needs of the human teacher – what kind of skills the human teacher needs to have, how many human teachers we need to teach the most students, what constitutes good practice for human teachers... And when we think of technology-based teaching – again, Andrew Feenberg's work has been fantastic here – we tend to react in a binary way. We either preach against technology, because we see online education and the various forms of artificial intelligence it might involve as threatening to the value of human contact between human teacher and human student, or we embrace the algorithm because we see technology as enabling us to be social in different ways. One way or another, when we think about what it means to teach in higher education, we tend to try very hard to keep the social and the technical separate from each other. However, the challenge over the next 20 or 50 years will be to think about the point at which the human teacher becomes the algorithm and the algorithm becomes the human teacher. At this moment, I do not think we have even started to grapple with that significantly.

PJ: I am fascinated by the relationships between big data, algorithms, and the politics of data science. Please allow me to paraphrase a recent blog entry by Ben Williamson (2016): Who owns educational theory in the age of algorithmic cultures?

SB: Ben writes really well about the corporate interests that are at play in big data, educational technology, and algorithmic culture, and the ways in which code acts within education in the interest of corporations rather than necessarily in the interest of students and teachers. Having said that, I am not sure that ownership is the most helpful way to think about educational theory at this point. Some of the most interesting work about the relationship between education and data has been done outside the academy – for example, by blog commentators like Audrey Watters. However, I think those of us within the university need to work hard to maintain the set of critical perspectives which are going to enable us to make sure that educational technology develops in the future in ways that we want it to. We should not allow the interest of corporations to drive what we do, and need

therefore to maintain the critical perspectives that come out of the academy... Education is a site of constant negotiation and struggle, and will probably always be so.

PJ: One of the key features of algorithmic cultures is radical equality between human and non-human actors (Knox, 2015). Since early days of information technologies, computer scientists and science fiction writers have dreamt of artificial intelligence. What are the main consequences of radical equality between human and non-human actors, and how do they relate to artificial intelligence?

SB: The main challenge here is in trying to think about the non-supercessionist alternatives to the common trope of the day: Robots are coming to take over our jobs. That is a very dominant perspective, which has been around for a very long time, and which seems to have gained new energy recently. The Oxford Martin School's research on the automation of work, for example, the focus on the 'Fourth industrial revolution' we saw at the 2016 Davos meeting, and the glut of texts that have been published recently on this (Frey and Osborne, 2013). In the context of teaching, it is about trying to move beyond the idea that artificial intelligence can, or will, take over our jobs. We should not be asking the question: In 50 years from now, will there be a human or a robot teaching? Rather, we should be asking the question: What kind of combination of human and artificial intelligence will we be able to draw on in the future to provide teaching of the very best quality? What do we actually want from artificial intelligence? We should not allow artificial intelligence in education to be driven entirely by corporations or economists or computing and data scientists – we should be thinking about how we take control as teachers. So the important questions to be asked are: How could we do our jobs better with artificial intelligences? What might that look like, and how might our students benefit?

PJ: Your recent work on teacherbots explores teacher automation from a fairly unusual perspective: "The teacherbot explicitly worked with the idea that teacher automation does not have to be about rationalism and instrumentalism: 'botty' was not intended to 'solve' any productivity deficits in teachers, or to replace teachers, but rather to explore how an assemblage of teacher-student-code might be pedagogically generative" (Bayne, 2015: 465).

What are the theoretical and practical consequences of pushing (our understanding of) teaching and learning beyond anthropocentrism?

SB: This sits quite strongly with the last answer, which was really about the challenge for education not to think anthropocentrically, but to try and think beyond anthropocentrism. We tend to think that if we have more teachers in classrooms, if we have more contact time, if we have more human teacher to student interaction – education will automatically be better. We still need to research these questions, because they have really important implications in various fields including digital academic labour. However, we can also be asking: What would it look like if we imagine the teacher working in partnership with the code, and / or with artificial intelligence, to offer a new kind of teaching? I think

we need to move away from understanding automated teaching as a response to some kind of deficit in teachers. Rather, we need to think about automation as being a chance to make teaching and learning radically better. I think that it is really useful to approach these questions from a non-anthropocentric position.

PJ: The question of digital labour popped up in several contexts through this conversation – it seems to be one of the main concerns of education, and many other fields, in the contemporary age of digital transformation. In your experience, Siân, what happens to academic labour when it becomes digitized?

SB: Digital academic labour has potential to be deregulated – it carries the potential for the job of teaching to become deprofesionalized, it carries the potential for neoliberal efficiency gains in teaching... So there are lots of dangerous potentials out there. However, it also carries some of the more creative, generative potentials such as the ability to reach new kinds of students, design creative digital pedagogies, re-work entrenched relations between students and teachers, students and campus, scholars and texts.

Obviously, we have all been affected by digital labour and digital academic labour – the new currents in academic work, the pressure to be always on, the pressure for instantaneous response times and limitless working hours... There is a lot in there. I think that a really important approach to dealing with these issues is to actually think, as teachers, what we want digital technology to do and to achieve. We need to try and create a positive model of digital academic labour, and to put it alongside the important critiques. We could do more to rethink teacher agency, and how that agency might be reformed and reformulated by automation. We, as teachers, need to think what we want from digital education and how it should be shaped and framed in the coming decades.

PJ: A lot of (your) research in teacher automation arrives from experiences obtained within the MOOCs. What are the main promises and threats of the MOOCs? What is the future of the MOOCs?

SB: We have definitely moved on from the MOOC hype – today, in 2016, we have even moved on from the MOOC backlash. We are seeing, in some contexts (certainly here at the University of Edinburgh), that MOOCs have become mainstreamed. The promises and the threats of the MOOC have already been well articulated. One of the main promises was massive democratization of access to higher education, which has not actually happened. The threats were around the potential of delivery of teaching online and at scale to threaten the existence of our universities, and again that has not happened. In spite of some failed expectations, I do not think that MOOCs are going to go away. However, they are perhaps now going to get really interesting in the sense in which they provide us with challenging, interesting frameworks for accreditation. I think credit-bearing MOOCs are the next challenge. For example, can we use our MOOCs to fast-track admission to the university?

The MOOCs have been really good at raising the debate about technology in education, and the massive press and media interest in them really foregrounded

the potential for creative, critical, generative innovation using technology within higher education. Within my own university, our MOOCs did amazing work in getting academic colleagues to think anew about how we could teach online. Another important gain from the MOOCs is the way they have enabled us to share our research and expertise on a massive global scale. The two million people who participated in MOOCs organized by the University of Edinburgh, benefitted in some way from our research and teaching. The MOOCs have been huge – this is why I think that they are going to continue as a way of opening up access to teaching, research, and rethinking accreditation.

PJ: Speaking of algorithms and also about the MOOCs, it is hard to avoid the field of networked learning. According to an early definition, networked learning is “learning in which information and communication technology (ICT) is used to promote connections: between one learner and other learners; between learners and tutors; between a learning community and its learning resources” (Goodyear, Banks, Hodgson and McConnell, 2004: 1). What attracted you to networked learning? What are its strengths and weaknesses in comparison to other competing approaches such as Technology Enhanced Learning (TEL)? What is the main benefit of networked learning approach in the context of your work?

SB: I think networked learning and the work of researchers like Peter Goodyear, Vivien Hodgson, and David McConnell has been valuable, because it was one of the first strands of academic work which took digital education seriously as a research domain. The classic definition of networked learning you have given has been about connections between learners, tutors, and learning communities / learning resources. Yet, I have always thought that, to an extent, networked learning privileged the social connections between learners and tutors. In that regard, early networked learning was quite anthropocentric, and did not pay serious attention to the material connections between the human and the non-human. Recently, however, that seems to have shifted – the last two networked learning conferences had a lot of papers on actor network theory, non-anthropocentric approaches, and even a movement away from thinking about the network as the dominant metaphor. Networked learning theory is currently undergoing significant changes, so I think that it corresponds to the spirit of our times.

Speaking of networked learning, it is interesting to ask: How does it compare to technology enhanced learning (TEL)? Based in my recent paper ‘What’s the matter with ‘technology enhanced learning’?’ (Bayne, 2014), I think that the main difference is that technology enhanced learning is based in an instrumentalist perspective which sees technologies as being in service to existing pedagogic and institutional needs. In that regard, it separates the social from the technological, the human from the machinic, and just looks how technology can make what we already do better. Unlike networked learning, technology enhanced learning does not look critically at how digital technology challenges, reforms, and rearticulates teaching and the subjects of teaching. Compared to networked learning, I think, technology enhanced learning is very limited.

PJ: Your posthumanist approach to digital learning inevitably brings us to radical unity of human beings and our planet. What are the main challenges of being a researcher and teacher in the age of the Anthropocene?

SB: I think the main challenge facing teachers and researchers in the age of the Anthropocene is to try and move away from this entrenched, embodied legacy of humanism within education. I am interested in what is useful and important in humanism around agency and social justice. At the same time, I am trying to think what it means to be multiply connected both in ecological terms and in machinic-artificial terms, and how that may change what it means to teach, what it means to be an educator, and what it means to be a student. In my opinion, this is really the key question that we need to address. My work in this sense takes a critical posthumanist approach, rather than post-humanist *per se*.

When we look at the last few decades of thought about the position of the human in the humanities, the social sciences and even in the sciences, it always surprises me how far behind education has remained. There are now massive, radical bodies of post-anthropocentric thought developed in areas such as new materialism, actor network theory, environmental humanities and sociomaterialist perspectives in social science – yet, education and educational practice in particular have not really grappled with them. I have spent the most of my career grappling with these issues, and I still wonder how we could shift education beyond 20th century humanism to a creative, critical posthumanist perspective.

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