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Out of the humanist matrix: Learning taxonomies beyond Bloom

Dr Eleanor Dare, Senior Tutor (research), MA Digital Direction at the Royal College of Art, School of Communication

Abstract

This article critiques the 'humanist' legacy by questioning the cognitivist and constructivist paradigms which underpin dominant models of adult learning. It asks whether they are suitable for evaluating the way art and design students work with digital technology, questioning humanist and cognitivist models of learning, such as Bloom's Cognitive Taxonomy (Bloom *et al.*, 1956) and whether it supports curiosity, criticality and imaginative risk. It connects this issue to the problem of 'normative validity', which describes how that which is measured is valued – 'the indicator of quality becomes the definition of quality' (Biesta, 2013, p.1) – overshadowing more inclusive approaches to learning.

Key words
epistemology; Bloom's taxonomy; humanism; constructivism

Introduction

When it comes to adult learning in digital subjects, teaching is dominated by two closely connected ideas, 'constructivism' as it has been adapted from Papert (1993) and Bloom's 'Cognitive Taxonomy' (Bloom *et al.*,1956). Both models emanate from a 'humanist' tradition (Snaza *et al.*, 2014), in which non-male and non-white people, along with animal and 'natural' life, have been historically excluded - from every aspect of mainstream epistemic, political and cultural agency (Henriques *et al.*, 1998; Braidotti, 2013; Wolfe, 2010). Humanism occludes the contingent nature of who gets to be defined as human (Haraway, 2008; Henriques *et al.*, 1984; Ferrando, 2013).

Humanism is historically dynamic, subject to political and philosophical shifts. Humanist readings from different periods are often at odds, there are therefore, many objections to humanism. For example, the denial of voting rights historically, based on gender, race or class at different times, which were seemingly justified by a Humanist conception of 'rational' and 'non-rational subjects' as well as an anthropocentric 'hierarchy that places humans at the pinnacle' (Ratelle, 2011, p.149).

Humanism underpins almost all mainstream pedagogies, including Papert's constructivism (1993). Usher and Edwards point out the ontological similarities between humanism, 'behaviourism' and 'positivism' (1996). Ultimately, 'humanistic psychology works with the same conceptions of the subject and reality. It too, like scientific psychology, becomes a mechanism of regulatory power' (Usher and Edwards, 1996, p.44). As Rankin-Dia asserts, higher education institutions in the UK 'conform to a largely constructivist view of learning, whereby students construct their own knowledge through active participation' (2016). This constructivism is an information processing paradigm by which human learning is characterised as a series of disembodied entities reduced to a flow of signals. As Wenger states, 'institutions are designs and our designs are hostage to our understanding, perspectives, and theories' (Wenger, 2009, p.216). The dominance of these models of constructivist learning is a cognitivist (based on an information processing paradigm of human thought), behaviourist and positivist approach that does not necessarily consider changing humanist presumptions, prompting the questions about what impact this model has on learners and who it excludes. It is important for all

academics to reflect on this impact and consider the potential for exclusion created by assumptions that privilege cognitivism as one humanist ideology given priority over other epistemic models. Bloom's Cognitive Taxonomy is arguably the most well-known model for characterising and evaluating the way students learn. However, Bloom's more challenging psycho-motor and affective taxonomies are rarely used. Enter the search term 'classify educational learning objectives' and Bloom's Cognitive Taxonomy, or its revisions (changing Bloom's original nouns into verbs, for example) will dominate search-engine results. More recent codifications such as Salmon's 'Five Stage Model' for online learning (2000), also share the same epistemic genealogy. They are equally underpinned by problematic humanist and cognitivist foundations, with an implicit information processing paradigm (Putnam, 1975) that human minds are essentially equivalent to computational machines (Rhodes, 2011).

As this article explores, the models we draw upon when deploying the digital in teaching and evaluation are far from neutral, as the subject of these evaluations – the learner – is an ideological construct that serves an outdated ontology, a humanist agenda, which excludes a more expansive consideration of the world in which we exist. Bloom's Cognitive Taxonomy is a 'framework for classifying statements of what we expect or intend students to learn as a result of instruction' (Krathwohl, 2002, p.212). But this model, like any other dominant paradigm of the human mind, leaves the question, is this model, as a dualist paradigm of machine (as opposed to human) computation (Dreyfus, 1972), appropriate or meaningful for a creatively focused, potentially disruptive and embodied set of practices, such as those found in an arts university or college?

Learning theories constructing knowledge
Embedded within both Bloom's Cognitive Taxonomy and Papert's constructivism are an additional set of epistemic constructs. Many mainstream cognitivist paradigms, including constructivist pedagogies, strongly influenced by Piaget's developmental theories (1952), frame the learner in humanist terms. These terms imply a wholly discrete individual, one whose learning moves in an often linear, cumulatively hierarchical trajectory. A humanist learner exists within discrete developmental phases, beginning in Bloom's cognitive model, with insecure rote learning and culminating in autonomous innovation.

'Social connectivism' (Siemens, 2004) frames the learning subject as operating within a binary of society and the individual. As a 'unitary, coherent and rational' agent (Tennant, 1998: p.366), one might argue that Vygotsky's critique of disembodying culturally de-contextualised learning subjects establishes a humanist dualism, a model of 'social influence', rather than the more radical posthumanist assertion of epistemically contingent difference – between subjects and objects, bodies and ideas, animal and non-animal, technologies and practices. Additionally, the concept of a rational agent is far from neutral, and originates within a Euro-centric legal context, defined by Descartes (1641) as the *cogito* or the '*man of reason*'. As previously alluded to, the 'irrationality' of female, Black or working class subjects was the legal basis for historical denial of voting rights, as well as slavery (Henriques *et al.*, 1998).

Recently, social connectivism has emerged as the ideology of choice for online learning, but it still frames the individual 'in terms of a binary opposition or dualism between the 'individual' and 'society'. As if the 'individual' and 'society' are antithetical, separate, and pull in opposite directions' (Tennant, 1998, p.368). Moreover, social connectivism:

> …seems to be standing on one foot. It appeals to the classical formalist theories of education on which it stands, while simultaneously denying their relevancy. It declares the network itself to be knowledge and everything connected to it is a knowledge maker.
>
> (Wade, 2012)

Although social connectivism does acknowledge that subjects (the human agents around which humanism purports to orient itself) are connected entities, it is oblivious to posthumanist theories of subjectivity. This is the idea that 'the subject' as a multiple state is only contingently separable from 'society', technology and other actors, emerging through a dynamic configuration in which 'a number of subject positions are produced' (Tennant, 1998, p.368).

The contingent, posthuman learner generates and experiences volatile subjectivities, which are 'not purely rational,' (Tennant, 1998, p.368) but always capable of contradiction. Yet, constructivism (and its newer variants such as social connectivism) is still the 'leading metaphor of human learning since the 1970s' (Liu and Matthews, 2005, p.386). This pedagogic model underpins many learning technologies, including the virtual learning environment (VLE), Moodle, which was created by the technologist Martin Dougiamas (1998; 2000) with a specifically constructivist agenda. Dougiamas is clear in his allegiance to constructivism, and its embedding within Moodle, as evidenced by his many publications, not least of all in his blog post 'A Journey into Constructivism' (1998).

The connections between Papert's constructivism and Bloom's Cognitive Taxonomy are created by a set of humanist presumptions. In both models the individual is swept into 'a concept of rationality which is an ahistorical, universal model leading to a view of learning that fails to deal directly with considerations and questions of […] ideology, culture, power and race-class-gender differences' (Illeris, 2009, p.95). This also raises the question of what happens to students who have little or no familiarity with positivist constructions of knowledge, meaning knowledge empirically verified via sense data, but also that which is filtered through mathematical systems of logic. For example, Socratic dialogue or the forms of epistemic enquiry emphasized and valued by constructivist models and arguably, by a middle-class, university educated milieu, such as processes of testing, assimilating and accommodating new knowledge, constructs and principles, in for example, mathematics and computing.

According to Zevenbergen, as an epistemology constructivism 'ignores the social implications of the construction of meaning' (1996, p.95). Constructivism is in fact, a liberal discourse 'which valorises the individual construction of meaning', which in many ways legitimises the 'marginalisation of many social and cultural groups' (Zevenbergen, 1996, p.95). Despite its name, *social* connectivism does not represent a significant break from humanism, it does not represent a radical rupture from the seventeenth century model of an ontologically discrete, originary rationalizer.

An emergent 'posthuman' pedagogy?
Although a posthumanist stance does have the potential to replicate humanism's privileging of a Euro centric, anthropocentric epistemology, it also has the potential to 'reconfigure how we understand politics and "knowledge" […] by troubling the humanist concepts through which virtually all educational thought has been articulated' (Snaza *et al.*, 2014, p.40).

Posthumanist educational theory proposes that we 'have never been separate from machines and that notions of "humanness" could not be produced without machines' – in other words, we 'have always been technological' (Snaza *et al.*, 2014, p.44). This idea radicalises Vygotsky's notion of technology as a 'mediating object' (1978). A posthuman pedagogy challenges us to consider what Braidotti calls 'life beyond the self', and 'life beyond the species', to bridge the 'nature-culture' and all other ontological divides (Braidotti, 2013, p.186). According to Braidotti, we need to consider virtual entities, animals, codes, networks and flows of energy (2013, p.190), the complex assemblage of agencies inextricably entangled with our always emergent, dynamic subjectivities.

Dialogues that expand the scope of knowledge beyond humanist concerns is of increasing cultural urgency, as more reductionist evaluative methodologies are emerging, with issues for evaluation and ontology created by online analytics measuring the hyperbolic metrics of 'big data'. Are the hard-and-fast metrics which educators and technologists find themselves bombarded with in any way

reconcilable with an evaluation of what happens when students engage with creative practice? Practices in which 'the kinds of transitions we are considering are not linear, not the learning of simple isolated concepts' but 'messy, abstract transformations' (Land, Rattray and Vivian, 2014, p.202). When discussing this escalating culture of 'accountability and audit,' Biesta claims it seems to make 'professionals and institutions more accountable for good performance […] manifest in the rhetoric of improvement and raising standards, of efficiency gains and best practice' (2013, p.9). As Biesta asserts, 'beneath this admirable rhetoric the real focus is on performance indicators chosen for ease of measurement and control rather than because they measure accurately what the quality of performance is' (2013, p.9). This neo-liberal quantification (embracing the techniques, tropes and technological hype-cycles of the free market) emanates from 'the same conceptions of the subject and reality' (Usher and Edwards, 1996, p.44) as humanism and positivism, the same society-individual dualism which Braidotti and other posthuman theorists critique. As far back as 1996, Usher and Edwards devoted an entire chapter to the common ontological foundations of humanism and behaviorism – a mind-body, society-individual dualism which is at the heart of the posthuman critique. The models we tacitly and explicitly draw upon when deploying the digital in our teaching and evaluation, are far from neutral and never can be so, as the singular subject of these evaluations, the learner, is an ideological construct, one that serves a humanist and positivist agenda. The humanist and positivist agenda is an outdated ontology that models an inadequate definition of what human subjects can and cannot be. How then, can we collaboratively invent, adapt, reverse engineer or explode Bloom's and other taxonomies, so that our conception of how adults learn and create is relevant to the myriad forms of practice found at, for example, the University of the Arts London, or other art colleges and institutions?

Wolfe, who writes on Animal and Disability Studies, shows us some of the 'limitations' of the humanist model of the subject, calling 'us to rethink questions of ethical and political responsibility within what I have sometimes characterized as a fundamentally posthumanist set of coordinates' (Wolfe, 2008, p.1). Wolfe discusses the scientist Temple Grandin, who asserts that:

> disability becomes the *positive*, indeed *enabling*, condition for a powerful experience by Grandin that crosses the lines not only of species difference but also of the organic and inorganic, the biological and mechanical.
>
> (Wolfe, 2008, p.136)

Grandin wrote she 'would be denied the ability to think by scientists who maintain that language is essential for thinking' (Wolfe, 2010, p.129). If we ask what a posthuman art school curriculum might look like, then Grandin's example is useful. There are also other projects which can be framed posthuman, for example London College of Communication's project, *Thesis InForm,* which seeks to explore the ways ideas can be generated and assessed outside of conventional language. One might speculate that future classrooms, especially online, will have affective, robotic agents, with whom students might form close attachments and creative collaborations.

> Curriculum studies […] like other humanist forms of intellectual labor, has long been anthropocentric. While we cannot offer any specific vision of what a new posthumanist curriculum studies will do, we are at the dead end of humanism, and now, together, we have to burrow in other directions.
>
> (Snaza *et al*., 2014, p.52)

Thinking even further ahead, hybrid human-animal-networked entities might also exist as both students and educators, using sub-symbolic communications, sensors and neuro-imaging, haptic languages. These may seem like far-fetched ideas, but they are to an extent no more far-fetched than the prospect of 'online' learning 30 years ago.

In the mid-twentieth century, Albert Einstein developed 'gedenkenexperiments', or thought

experiments, as an alternative to practical experiments. Adapting this technique, let us think what would happen if we suspended two theories: the 'Computational Theory of Mind' and its apparent opposite the 'Man V Machine' argument (Rhodes, 2011). According to these, we might characterize human subjectivity within a complex collective system of co-evolving agents, which also includes learning institutions, cultures, policies and economics. This is a way of 'decentering the human' and placing it as 'part of the sustainable ecological network of the world' (Cedar, 2016, p.99).

Conclusion
Posthumanism offers significant alternatives to our humanist and cognitivist legacy (Snaza *et al.*, 2014). The process of re-conceptualising commonly held ideas and presumptions about how adults learn and applying that new knowledge to our own practice (both as lecturers and learners) is challenging. As Zweibleson asserts, 'to become a disruptive thinker is to reflect and challenge institutionalisms and one's own view of reality' (2017). As a result, developing a posthumanist pedagogy is arguably, the challenge of our times.

Educators need to at least acknowledge that there are significant challenges posed by our humanist legacy, as there is a very real need to re-evaluate what it means to be human within our varied practices. This can be done by imagining and operating within a 'flat ontology' (Snaza *et al.*, 2014, p.40), one that levels the inherited boundaries between objects and subjects, humans, animals and machines.

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Biography

Dr Eleanor Dare is Senior Tutor (research) for MA Digital Direction at the Royal College of Art, School of Communication. She has taught computer programming and other digitally themed subjects at Goldsmiths, the University of Derby, the Open University, University of the Arts London, London College of Communication and the Royal College of Art. She has an MSc with distinction, in Arts Computing and a PhD in Arts and Computational Technology, both from Goldsmiths, Department of Computing.