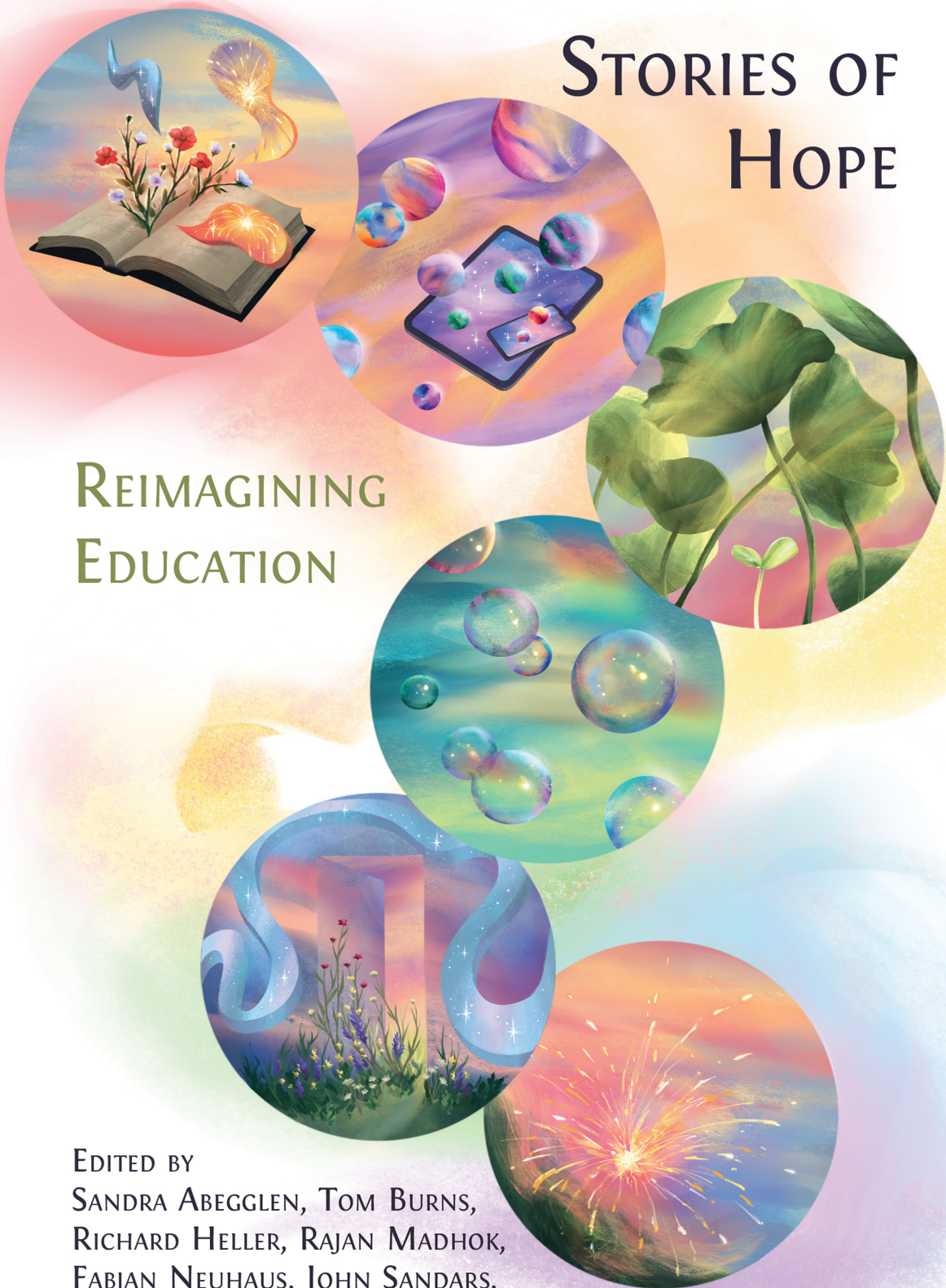
# Stories of Hope

## Reimagining Education



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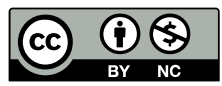





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# 39. Moving, making, and mingling: Moving towards an embodied pedagogy

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## Abstract

This chapter critically reflects on the impact of mind/body dualism on educational practices, highlighting how traditional separations between cognition and embodiment have shaped learning environments. In response, it offers a hopeful vision for holistic, whole-person "mindbody" approaches to education. Drawing on an initial exploration of literature in neuroscience, embodied cognition, embodied pedagogy, and the theory of the extended mind, the chapter proposes a framework to support reflection and guide a shift towards more embodied pedagogical practices. It presents examples of current embodied approaches across disciplines and invites collaboration for future reflection, experimentation, and development of embodied pedagogies.

**Keywords**: embodied pedagogy; embodied, situated and distributed cognition; extended mind; movement; making; mingling; milieu; mood

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## Introduction

We ask our BA Education students to critically engage with debates in education and interrogate assumptions underpinning educational practice. "What is education for? Why is it done in the way that it is? Is it inclusive? Fit-for-purpose? What might alternative, socially just incarnations of education look like?". Exploring such questions alongside students propelled us to take a more critical stance regarding our own teaching practice and the perceived norms of teaching and learning across Higher Education.

bell hooks (1994, p. 147) argued that "individuals enter the classroom to teach as though only the mind is present, and not the body". The tradition of mind/body dualism in academia that sidelines the body and views "high-level" thinking as the business of the somehow disembodied mind continues to permeate educational practice, privileging mind over body, dispassionate logic over emotion, and the individual over the collective. In interrogating and rethinking this perspective we began to explore holistic and creative approaches that seek to involve the whole person and their social environment. In response to Lisa Clughen's (2023, p. 3) call for Higher Education practitioners to ask "Have I considered the body in this?" three initial reflective prompts emerged that we have found helpful to move us towards a more embodied pedagogy in our own course design and practice: moving, making, and mingling.

Embodiment views "the interrelationship of the mindbody" (Clughen, 2023, p. 4) as key to human understanding of the world. Building on Andy Clark and David Chalmers' idea of the "Extended Mind", Annie Murphy Paul (2021) draws on research in the fields of embodied cognition (the role of body in thinking), situated cognition (the influence of place on thinking) and distributed cognition (the impact of thinking with others) to urge us to go beyond the traditional concept of "brainbound" thinking. David Nguyen and Jay Larson (2015, p. 332) offer a view of embodied pedagogies as facilitating "learning that joins body and mind in a physical and mental act of knowledge construction" with opportunities for "physical awareness, environmental and interpersonal engagement, and socially constructed knowledge". Consideration of embodied approaches is not intended as prescriptive or pre-supposing of any specific methodology but rather

is envisaged as complementary and dependent on context. With this in mind, we share here a framework for reflecting on opportunities to embrace a more embodied pedagogy.

## Moving, making, and mingling (milieu and mood)

An initial exploration of the literature from neuroscience indicates a growing body of evidence for the interconnectedness of "the social, the emotional and the physical in cognitive processing" (Doherty & Fores Miravalles, 2019, p. 5).

### Moving

We are bodies and bodies move. Guy Claxton (2016, p. 35) describes how even as they appear still, the internal workings of our bodies are in constant motion and dialogue embodying intelligence "at a cellular level". And we move dynamically through the world, interacting with our environment and those in it. Contrary to the image of a "puppet-master" brain directing the body's movements, embodied cognition research suggests an entwined and interdependent brain-body relationship, where intelligence resides in the mindbody (Claxton, 2016) and in which the act of "moving our bodies changes the way we think" (Paul, 2021, p. 45).

Movement improves physical health and mental well-being, leading to better learning outcomes (Clughen, 2022). Traci Lengel and Mike Kuczala (2010, p. 9) refer to research that suggests that "physically fit children perform better in the classroom", while Ann-Marie Houghton and Jill Anderson (2017, p. 10) emphasise the importance of addressing mental health and wellbeing in teaching contexts because "we know that wellbeing is necessary to our capacity to learn". Movement is, specifically, good for the brain. When we are engaged in physical activity more blood flows to the brain (vascularisation), mood-enhancing neurochemicals are released, and the production of new brain cells, or neurons, is promoted (neurogenesis) in parts of the brain related to learning and memory (Doherty & Fores Miravalles, 2019 in Clughen, 2022).

Movement enhances cognition. Paul (2021) discusses the impact of distinct types and intensities of movement on thinking. She cites studies

that suggest that physical activity puts us in a state of preparedness for learning, simultaneous movement and learning sharpens focus, speeds up cognitive processes and enhances creativity, and movement positively impacts memory and recall. Movement unrelated to academic content facilitates "brain breaks" (Lengel & Kuczala, 2010) or "active relaxation" (van Dam, 2020 in Clughen, 2022): essential time for the brain to process new information and "reboot". Breaks from learning that exert the body, argues Paul (2021), are far more conducive to learning than those that rest it.

Clughen (2022) cites numerous studies linking movement to positive emotions and positive feelings to motivation, engagement and memory. Put simply, movement enhances our mood and makes us more likely to fully engage with and be able to recall an activity (and its associated learnings) that we enjoy. Far from being incidental or peripheral, emotions are key components of human cognition (Doherty & Fores Miravalles, 2019) and a better understanding of "connections between cognitive and emotional functions [...has] the potential to revolutionize our understanding of learning" (Immordino-Yang & Damasio, 2007, p. 3).

## Making

As "makers", we have a long tradition of crafting artefacts and tools to enhance our making. These external-to-us tools can become literal extensions of ourselves (Claxton, 2016) as the brain assimilates them into its "map" of the body. Embodied cognition research suggests that thinking does not necessarily precede the act of making, but that "craft *is* cognition" (Claxton, 2016, p. 3). David Gauntlett (2013) describes the act of using our hands to physically manipulate "things" as a tool for thinking. In his work with creative research methods, he observes participants "having ideas through the process of making" (Gauntlett, 2018, p. 19), just as Camilla Groth (2017, p. 14) acknowledges a "sense of knowing through making" and decision-making "in action" in her ceramic practice. Kuczala and Lengel (2010, p. 25) argue that this kind of implicit knowledge construction that "takes place beyond our conscious awareness" can be very powerful.

There persists a tendency to privilege the 'intellectual' over making

and doing, which Groth (2017) recognises in the distinction between how her crafting practice and academic work are perceived. Claxton (2016) suggests that somatic practices and intelligences are valued less in both educational and professional settings. Nevertheless, in response to our working and social lives becoming increasingly governed by an automated digital world that may marginalise the haptic, he identifies a move towards making and movement, a desire to "get back from the virtual to the substantial, from the symbolic to the concrete: from mind to body" (Claxton, 2016, p. 282). His hopeful vision for a future education is one in which students "manipulate" as well as articulate and where "manipulacy is talked about and valued as highly as literacy and numeracy" (Claxton, 2016, p. 271).

Making can also be a means of connecting with the world. The things we make become part of the fabric of our environment and "through making things and sharing them in the world, we increase our engagement and connection with our social and physical environments" (Gauntlett, 2018, p. 19). In an educational setting, Gauntlett (2013, 2018) observes how having a tangible artefact to see and touch facilitates opportunities for reflection and the development of ideas, but also social interaction and the cognitive affordances of "mingling". In summary, "through making we also make meaning, we communicate meaning and we share meaning" (Groth, 2017, p. 14).

## Mingling

The importance of the emotional climate of the classroom (Sousa, 2006, in Lengel & Kuzcala, 2010, p. 9; Clughen, 2023) for learning and for student engagement and belonging (Thomas, 2012) makes a strong case for attending to the already well-established social nature of learning, for developing supportive learning communities within universities and strong links to the communities they serve, for example via knowledge exchange and opportunities for students to access powerful professional and disciplinary networks.

Paul (2021) shares research highlighting the cognitive benefits of thinking via our relationships, whether with experts, peers or in groups, for example citing physicist and educationist Carl Wieman's studies of peer interaction among science students (see the University of British

Columbia, Carl Wieman Science Education Initiative website) which suggest "intense social engagement around a body of knowledge" (Paul 2021, p. 188) is key to transforming habits of thought to resemble those of experts. Although university education typically prizes individual thought and opportunities for this are of course valued, academic papers are typically co-authored and research studies indicate the benefits of established experts making their thought processes more explicit for imitation by novices (Paul, 2021).

Sandra Abegglen and colleagues (2023) propose collaboration as central to socially-just, liberatory education, based on genuine partnership and co-creation, including between disciplines, institutions, students and staff, as an alternative to a competitive, individualistic, hierarchical approach. Clughen (2023, p. 10) discusses the social element of embodiment and suggests "teaching approaches that soothe, promote social co-regulation and create a pleasant space for all students" as part of recognising that "our bodies are shaped socially and culturally and are potentially the loci of social wounds and trauma". These close ties between the physical, social, and emotional led us to reflect further.

## Milieu

Reflection via our initial, work-in-progress, "movement, making, and mingling" prompts led to a sense that this framework needed to evolve further to more overtly emphasise our constant intertwining with the places and spaces through which we move, and the opportunities for these to enable and empower rather than exclude or marginalise; or, to move the model onwards, an additional prompt, not separate but enmeshed, which we might call our "milieu". Claxton (2016, p. 54) refers to the intimate and dynamic interconnection of body and world, describing the body as a System, made up of inter-dependent sub-systems, but itself also a subsystem of the world it inhabits: "As my heart is to my body, so my body is to the world around me". We are not who we are in isolation but exist in a constantly moving dialogic relationship with our environment. Paul (2021) offers a hopeful view of the potential to use our surroundings as powerful "extra neural resources", citing research on the creativity enhancing potential of natural spaces, from the field of neuroarchitecture on creating built spaces conducive to

learning and on the potential to think in the "space of ideas" to use tools to externalise our thinking and reduce cognitive load.

## Mood

The concept of embodiment acknowledges and values the role of the emotional in making meaning and constructing knowledge, rather than disregarding it as a potentially disruptive force in the more traditional, dualistic, and brainbound conception of dispassionate logical thought. We have cited neuroscience research that not only links movement to positive mood and cognition but also views a deeper understanding of emotional intelligence as potentially revolutionary. We have commented on the connections between the emotional, the social, and our wellbeing and recognised the impact of our surroundings on how we feel and think. Gauntlett (2018) refers to participants "playing" with materials as they make-think and Clughen (2017, p. 9) asserts that "bringing joy [...] into the classroom, can serve to unleash an engaging, motivating, invigorating and inspiring force". "Mood" may then be a valuable addition to the reflective prompts we offer.

## Embodied pedagogy in action?

Fittingly, it is our collaborative work in education-related programmes that has offered rich opportunities for reflective co-enquiry, together with our students, into the potential affordances as well as challenges of experimenting with more embodied approaches as part of our pedagogic repertoire. Even with inherent relevance to the discipline, like others (McIntosh, 2013; Clughen, 2023) we have found it useful to make visible and interrogate the rationale when doing so and include optionality and agency for diverse students to choose how/when to participate. For example, creative and embodied approaches to reflection, from multi-modal artefact making, to photo-collage and digital scrapbooking, have been offered as rich meaning-making tools available alongside written journalling or sound notes to support, extend and deepen reflection, including on students' own developing identities in the discipline. Sharing examples of rigorous social science based research using creative or visual methods (e.g., Kara, 2020; Gauntlett, 2018) has prompted students to consider how such tools may

(or may not) support research participants in the expression of their lived experience and the understanding of this in their own qualitative enquiries, as well as the implications for implementation.

We have been inspired by the harnessing of creative and embodied approaches (Abegglen et al., 2019a; Warren & Payton, 2021) as a positive counter narrative to the common "deficit" framing of diagnosing and fixing student "weaknesses". The centrality of academic reading and writing has led us to trial embodied reading practices to build empowerment and ownership around text processing and creation as embodied endeavours. Techniques have included collective work to mark-up core texts via text scrolls (Abegglen et al., 2019b) or digital annotations to recognise "moves" in the text, groupwork to reconstruct and map texts via matching / grouping cut outs of theories with supporting details, followed by Lego® modelling of these to support their "unpacking". Free writing, "post-it-note" mapping and articulation of text flow with peers can scaffold student writers in physically shaping a narrative thread to more meaningfully express their unique "voice", perhaps in contrast with somewhat generic, disembodied computer-generated texts.

Such approaches have been revisited as ongoing, transferable scaffolds. For example, a co-created digital Padlet wall helped galvanise the student learning community via freer dialogic interaction at entry level and was extended via links to wider professional communities in a later placement module. Reflecting via the prompts helped us see potential and progress, but also highlighted our ongoing common default to sedentary classroom learning. Co-reflection on variety within individual learning sessions and over semesters prompted the integration of fieldwork exploring university learning spaces and pilot interdisciplinary collaborations such as with theatre studies lecturer-practitioners.

Interdisciplinary cross-institution networking has supported the sharing of embodied approaches to learning, including examples of integration in fields with an inherent focus on the body, such as healthcare/the clinical disciplines. Michael Flavin and Jennifer Bates (2022) review examples of how arts-based methods can promote an understanding of the human experience at the core of healthcare education and practice, noting further potential, especially for the

integration of dance and movement. Further examples include "Moving Medicine" at University of Exeter medical school (Richards & Lucas, 2022) and "The Out of Our Heads Art in Medicine" project (University of Bristol). Paul (2021) provides examples of how teaching involving movement and gesture promotes greater recall and understanding of content, acknowledging yet countering concerns about compromising time for "content" teaching.

Nguyen and Larson (2015) share examples of embodied pedagogy not only in disciplines with an obvious connection to physicality or the social world, but also in more abstract fields, with less obvious but implied links to spatiality, such as maths, via embodied approaches such as manipulating digital simulations for complex mathematical problem solving. Clughen's (2022) guide to embedding movement across HE, along with Paul McIntosh and Digby Warren's (2013), and Warren and Johanna Payton's (2021) examples of embodied and creative approaches in diverse disciplinary learning contexts evidence wider application that is ripe for exploration.

## Future possibilities

We have been inspired and challenged by (figuratively) dipping a toe into the literature from diverse fields offering insights that are relevant to embodied pedagogy, from neuroscience, psychology and cognitive science, to philosophy, computing and artificial intelligence, architecture, education, and the creative and performing arts. We have only touched the surface via selected sources of approaches that are, of course, contested, critiqued, and problematised, and which may align with our own interests, preferences, cultural backgrounds and embodied histories (including, for example, in language and yoga teaching). We nonetheless feel that the affordances of rapid AI-driven technological change, together with emerging interdisciplinary research and practice, offer increased impetus for the concurrent consideration of learning as an embodied, holistic, human process.

The vision of powerful and often untapped or overlooked opportunities to extend our thinking via our bodies, social relationships and spaces offers hope for tackling the entrenched educational inequalities via wider access to supportive and resource rich environments (Paul, 2021).

Staff and students alike would benefit from guidance on how to harness the evolving technology and digital spaces, as well as from access to intelligently designed, versatile and cognitively supportive physical spaces for in-person human interactions, opportunities for hands-on, creative, and meaningful "making and doing" and for movement, beyond the university gym (see Clughen's (2023) vision of wider integration of embodiment professionals in "mainstream" university activities).

Collaboration, dialogue, and participation in events where we have "moved, made and mingled" with diverse others, across institutions, disciplines, and wider communities have helped us reflect on where opportunities for embodied pedagogy might add options and value, aiding and integrating "content" learning. To create this text, we have experimented with embodied approaches from free writing, concept mapping, collaging, virtual, and in-person dialogue to participating in movement-based workshops, walking and talking. Just as we have sought exploratory spaces for students to "manipulate" ideas in development, so are we sharing our in-progress reflections on moving, making, mingling, milieu, and mood in search of curious co-enquirers with whom to continue the reflection and experimentation.

## Steps toward hope

- Critically examine the influence of mind/body dualism on current educational practices and explore holistic "mindbody" approaches informed by research in neuroscience, embodied cognition, and embodied pedagogy.
- Adopt and adapt a reflective framework and practical examples from across disciplines to begin integrating more embodied pedagogies into teaching and learning.
- Support whole-person teaching and learning by inviting ongoing reflection, experimentation, and co-development of embodied educational practices with colleagues and students.

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