Introduction

The educational imagination is not free to wander and drift without discipline. It has to work with what is specifically educational, learn to push its boundaries, twist and leap within and beyond its rules in ways that illuminate. There is a discipline to the educational imagination and this book sets out to make explicit its building blocks and processes, as well as demonstrate it in action. To stretch the educational imagination means first being able to recognise its boundaries. We can start intuitively with a natural level of focus: a teacher with learners in a classroom working through a lesson. The problem is that we quickly find ourselves in a kind of Russian doll situation: dolls within dolls within dolls. It is hard to work out what the biggest and smallest dolls should be and how they all relate in educational terms. The classroom is part of a school within a district. Learners are in a grade: let’s take grade 6 as a middle point. A more complex grade awaits them and a simpler grade is already completed. They are in stages of development with intellectual, linguistic, emotional, moral, aesthetic and physical dimensions that are not necessarily harmonised; and they live within different communities revolving around family and friends. The teacher is either still inexperienced in her specialisation, experienced, or an expert carrying all the traces of her own educational experiences. The lesson has its elementary components and is a part of a larger subject curriculum that is sequenced for increasing complexity. It is also located in a day that has moved from a previous lesson towards another lesson or break. At its simplest Boundaries of the Educational Imagination asks you to continuously move between larger and smaller sets whilst looking for connections and links. We can catch these elementary operations diagrammatically.

Dolls within dolls within dolls (figure i.1): the largest includes the smallest. The educational imagination has to learn how to climb through these levels from smallest to largest, from concrete to abstract, from particular to general, from part to whole.
Dolls within dolls within dolls are linked together in complex patterns (figure i.2). The educational imagination has to learn how to negotiate the differences and inter-relationships between different systems.

The patterns sketched out above continue to expand outwards, upwards, inwards and downwards. The school district expands outwards to province, country, subcontinent and continent; developing or developed region; east or west, north or south; and on a global scale. The school also exists in a space that expands outwards to the suburb, community and locality with all the complexities of class, race, gender and culture attached. The teacher brings more than her growing expertise: she has networks that operate across the grades she teaches, the subjects she specialises in, the administrative and leadership roles she occupies, and the professional bodies to which she belongs. Her pedagogy is a mixture of deep habits developed over her own lengthy period in school as a learner, the practices encouraged as she specialised in the profession and the embedded traditions of
the school where she teaches. Lessons are part of the curriculum that is a part of a subject discipline with experts working at the cutting edge producing new knowledge that slowly makes its way back to the lesson in the future.

Going inwards we find that thought and language processes, and emotional, moral and bodily responses, break down into elementary units that suddenly jump to physical reactions and down to the ways proteins, cells, genes, molecules and atoms combine in a frenzied hum that we cannot hear or see across and inside teachers, learners, desks and chairs. The lesson breaks down into elementary meaning units, action units, concept units and communication units. These are built up from smaller bits that also dissolve into basic letters, synapse and sound. The lesson depends on more basic skills that go down and down into ABCs and 123s and the essential habits of the body. The simple lesson with its teacher and learners is a pulsing locus of higher and lower forces, bigger and smaller powers, longer and shorter rhythms that work slowly or quickly in intense or muted ways across landscapes riven with inequality stretching into abstract heights and emotional depth.

How to imagine and describe the smallest and largest dimensions of education, as well as its heights and depths, is the central task of this book. It is all about the development of an educational imagination. To enable this stretching, each chapter expands and contracts education through six questions:

1. What happens as we expand outwards from the materiality of one school to the collective materiality of all the schools of the world?
2. What happens when we sharpen our focus towards the increasingly smaller material parts of a school, shifting from school to classroom to desks, chairs and teaching and learning equipment?
3. What happens when we focus on the smallest functional learning components inside the body of an individual student?
4. What happens when we focus on the internal heights of development an individual student can reach on a learning path?
5. What happens when we focus on the collective heights our human species can reach on an education development path?
6. What happens if we focus on the smallest components of learning and ask how these combine to produce increasingly larger sets of knowledge?

*Boundaries of the Educational Imagination* starts off by taking one school and then adding more and more to the story until we reach all the schools of the world. This works by taking an already existing whole (a school) and then adding to it more and more wholes like it until a complete set of all the schools of the world is reached. The basic logic can be visualised as expanding sets growing ever larger, from one school, to schools in a ward, wards in a districts, districts in a province, provinces in a country, countries in a region, regions in the world. Figure i.3 catches the first four levels.
Second, we focus on one school and take a look inside it at its parts (figure i.4).

The first two chapters explore the collective materiality of schooling in time and space. One way to understand what they are about is to imagine a highly intelligent alien studying our educational system from above. We can call the alien ‘Tau’. Tau, from hir (his and her) spaceship, Tau can identify and track all the schools of the world as well as the human beings entering and leaving schools, but cannot come down and interview or probe us (although occasionally Tau does indulge.) What would Tau be able to say about schooling on Earth watching from above, day after day, year after year, century after century? What would Tau make of the millions of schools that suddenly mushroomed all over our planet, of the different kinds of schools in more developed and less developed countries; how we treat so many children who are not white, how we separate out those with
long hair and those with short hair? The first two chapters deal with the visible mass appearance of schooling on our planet; the material collective effort of the way we educate ourselves (figure i.5).

The third chapter shifts focus from the material collective of schooling to the materiality of the individual student placed inside this massive effort. We shift from the smallest functional elements of a school (its chairs, desks and learning equipment like paper) to a learner sitting on one of the chairs and ask: what is the smallest material working unit of learning inside the learner’s body? This takes us into the brain and the way it intersects with student learning. There is a difference between the fibres of paper in a schoolbook and fibres in the brain.

This signals a radical shift from desks and chairs inside the collective materiality of schools to the individual materiality of a student inside school (figure i.6). It’s a massive jump into a completely different world, although each touches the other with the learner sitting inside a classroom, at a desk, writing an answer to a question with a pen.

It is hard to track the smallest material learning unit inside human beings. We have an interior inside us that is very different from the interior spaces of a school building. We have both a physical interior that is about our brains, neurons and synapses; and a mental interior that is about our minds with their thoughts, emotions and will. When we focus on the individual materiality of a student, it is hard to separate the meat of the brain from the aliveness of its functioning and that is why we use the word embodied. Working memory is our educational starting point here and the third chapter tracks how its limited capacity, dealing with around four elements at any given time, still allows for a massive expansion of learning inside us.

Education does not exist only to make us rational and productive citizens, but it has means, at its highest levels, to teach us how to reach the peaks of interior human experience. Our educational imagination cannot stop at the end of university, but has to pursue what we are at our very best and what education can do to enable this transcendence deep within our individual beings.
The fifth chapter shifts from the interior heights and depths of an individual learner to what is happening to education at the collective level. Jean Piaget hoped that by studying the interior development of one child he could track the collective development of our species, not in terms of physical development but of knowledge. It was our collective interiority that he was after.

Those familiar with the work of Ken Wilber will recognise that the organisational base of this book uses his four quadrant model (figure i.8) and many other of his insights contained in *Sex, Ecology, Spirituality: The Spirit of Evolution*.

Chapter five asks where the education of our species is pushing us, tracking the way knowledge growth is forcing education beyond its current capacities into a new world where any one of us can access the knowledge of the world in a pedagogically structured form at any time.

This opens up the question of how to structure knowledge pedagogically. So with the sixth question we stay with knowledge, but enquire about the smallest elements of instructive knowledge. How do they combine into larger and larger groups, eventually setting up the possibility of all the elements combining in systematic and creative ways to construct a world classroom where all knowledge is pedagogically available in a smart device held in our hands?

The journey of the educational imagination takes us through four spaces: the collective materiality of schools; the individual materiality of a student; the
interior depths of a student; and the collective depths we have reached as a species through knowledge. It is an achievement so massive we now have to spend over twenty years of intensive education of our young just to get the basics of our own reproduction as a species in place.

But it’s not just through travelling across these four spaces that we stretch the educational imagination. It’s also what we do inside each of the quadrants.

At the heart of all these chapters lies the modest request to take whatever educational process or object is the focus and ask: what are the levels above and below it? How many levels can you go up and down without losing educational purchase? In this question lies the artfulness of the device: it forces you to climb up and down educational landscapes with the instruction that you stop when the levels lose their pedagogic reach. The basic modus operandi of this book is to work with what is overhead and underneath the level on which you are currently concentrating. Sometimes you will be working with the highest or lowest level, so then there are only two possible levels. But most of the time, the level of focus will have one above and another below it (figure 1.9). To become adept at using your educational imagination it is vital that you always try to think beyond the working level by going one level up and one level down, at the same time looking for equivalent elements that add richness to the level at which you are working. Level 0 is the co-ordinate level; level -1 is the sub-ordinate level; and level +1 is the super-ordinate level.
You can illustrate this with the collective materiality of schools by shifting down a level to the classroom and its contents; or up a level to its location in a ward, and then you keep going from ward to district to province to country to region to continent and to the world. But don’t rush the upward and downward journeys: stay with the level for a while, looking for similar and different types at the current level of focus, and practise working with similarities and differences as well as
ranges of scale. If it’s the materiality of an individual student that is the focal point, then start with the astonishing limitations of working memory and watch as it builds up and uses long-term memories to enable the brain to work with larger and more complex knowledge forms. If it’s the internal development of an individual young learner just entering secondary school, then imagine him at the concrete operational stage but be open to developments into formal operational and the shift away from sensorimotor levels of reasoning. Then keep going inwards and upwards, if you can, beyond formal operational into more synthetic, holistic and integrating forms of logic. If it’s the collective growth of our knowledge, then ask how it is that we as a species are pedagogically dealing with its exponential development, not only by looking at its largest sweep, but how the art of teaching knowledge works with its smallest units.

In summary, these chapters indicate the beginnings of ways to imagine the beauty of education using two simple distinctions: the first between individual and collective forms of education (figure i.10); and the second between material and interior dimensions of education (figure i.11; Wilber, 2000).

A combination of these two distinctions gives four spaces the educational imagination can travel through (figure i.12): 1 – material collective; 2 – material individual; 3 – interior individual; and 4 – interior collective (Wilber, 2000).

Within each space a strict instruction is followed: climb up and down levels as much as possible without losing educational focus (figure i.13).

In the conclusion we show how this journey of the educational imagination through four spaces, using a simple hierarchical climbing mechanism, provides the groundwork for you to begin to understand the field of education studies, a field that is crucial both for the profession of teaching and the reproduction of the academy.
Boundaries of the Educational Imagination is the second of a quartet of educational texts that sets out some of the basic tools needed to analyse education and develop an educational imagination. It stands apart from Cracking the Code to Educational Analysis (Pearson, 2013), Conceptual Integration and Educational Analysis.
(HSRC Press, forthcoming 2015) and *The Good Fight* (forthcoming), but is a sister work. *Cracking the Code* provides a simple way to take any educational object, event or process and recognise, describe and analyse what it is and how it works. *Boundaries of the Educational Imagination* takes an educational event and stretches it outwards from its smallest elements to its largest whole; and from its early and simple manifestations to the complex and profound heights it can reach. I feel this to be an elementary skill needed by anyone who takes education seriously. If you don’t think through the smallest and largest, lowest and highest facets of education, then you have lessened your ability to locate where you are in the educational maelstrom and this limits your ability and imagination. *Conceptual Integration* provides a simple model to analyse and practise the transformative act of integration that sits at the heart of pedagogic practice. *The Good Fight* outlines the contested ethical justifications of education that often underlie and regulate curriculum disputes, pedagogic differences and assessment strategies, and shows pragmatic ways in which we negotiate this complex normative terrain. I mention the other three books to mark what this book does not do, so that it can do its actual job with focus and intent – take you on a wild ride to the boundaries of education and back again.