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TRANSFORMATIVE LEADERSHIP & HIGHER EDUCATION

An Encounterbook

MATTHEW RICH-TOLSMA AND GAUDENZ ASSENZA

Leadership in Transformation of Worldview and Higher Education

Volume Three

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OF WORLDVIEW AND HIGHER EDUCATION SERIES

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For Anneke wherever I may find her.
– Matthew

For my soul mate Lucie.
– Gaudenz

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Foreword

When I began my studies of organisational leadership twenty years ago, I took a course on transformational leadership. During the semester, a group of us taking the course met a couple hours before class each week to study, share thoughts and engage the topics we were exploring. About half way through the semester we came to a place of being frustrated. We felt that the professor knew much more than he was telling us each week, and we were feeling stuck in our process of trying to get a grip on the themes we encountered. So we went early to class and went up to the professor and expressed our frustration, requesting that he tell us more about the subject. He acknowledged our concerns by saying he could give us a bit more lecture and information that night, yet in reality the course continued on as before.

We continued meeting before class and at the end of the semester as we reflected on the course, we realized that something had happened outside of the norms which we had used to judge our learning. We saw that we did not have to think about what we had learned – we simply saw the world differently. This difference in perception allowed us to see phenomena we had not been able to perceive previously and to understand the core message of transformational leadership in a much more embodied manner than a primarily rational analytical or intellectual knowledge about it would have enabled.

This was a strange new experience, and initiated us into a world where education was less about the transmission of knowledge and more about a dialogical process of transforming our lenses of perception. I look back on that course as a seminal experience that fuelled my curiosity and led to spending the last twenty years learning about the world this lens opened up. This journey of learning to enact an understanding of transformative leadership grew into two main streams of activity. One has been around leadership itself, with a Ph.D. where my focus was on how the transformation of structures of consciousness plays a role in leadership development. The second stream has been about applying this thinking to higher education. The first-hand experience of how little such transformative ideas and models are applied in the practice of leading and operating such institutions has spurred my interest in attempts at both reform from within and revolutions from without.

In terms of exploring integral thought in its various guises, my main engagements have come through the absorption of others' scholarship by way of editorial work. Taking on the editorial role in *Integral Review*[*] allowed me to work with

[*] www.integral-review.org

colleagues well versed in various aspects of the field and participating in the leading edges of discourse with the intention of opening a space for gaining a stronger academic foothold for new thought in this field. As well, it exposed me to the many authors' works contributing to the broadening and deepening of an integral worldview. Altogether this role has served to provide me with an invaluable education related to some of the current discourse in the field.

More specifically related to the work of this book series, I also joined colleagues Sean Esbjörn-Hargens and Olen Gunnlaugson in producing the anthology *Integral Education: New Directions in Higher Learning*. This project allowed us to gather a rich tapestry of work applying various strands of integral thought and practice to the specific field of higher education and has informed my understanding of the emerging state of work in this area. It is from the experiences and perspectives gained along this journey that I will comment on what I perceive as the nature of this series of books.

***

This series of books is a bold initiative to place a stake in the territory of serious reform and even (r)evolution in higher education. There has been a great deal written and talked about in this area, but from my experience, not with the same combination of a depth of scholarly contextualisation (Volume One), details of values, character and practice (Volume Two), with a handbook or primer that covers the why, who, what and how of leadership in transformative higher education (Volume Three). In addition, Volumes One and Two contain a series of questions and reflections between chapters to enable these books to easily be used in practice in the classroom.

Why do I find this book series to be such an important contribution at this particular time? I have long been immersed in discourse pointing to how the world around us is, in many views decaying; for example political systems become further removed from the wishes of the citizenry, the science of climate change cannot be translated into action, the clamour of materialism and consumerism for our attention and energy tend to overwhelm our good intentions to embody change. Education is no different, with many critics (like Sir Ken Robinson) clearly showing how the machine-like production model of education designed in the industrial age has snuffed out creativity and most forms of true learning in students. Thus there is no mention of wisdom as being relevant to education.

Yet it is clear to me at least that wisdom is what we are in dire need of cultivating through our educational institutions today. Information is a commodity

that is more and more freely available. Knowledge about how to create patterns and understanding from information is being taught to a greater degree now than before. Yet the cultivation of wisdom, understood as a capacity to take wise action in the moments challenging situations confront us, is not well understood or undertaken (with the possible exception of some progressive and/or religious higher education institutions which aim for this to at least some degree).

In order to take such wise actions, it is important to be informed by and habituated to wise thoughts, or worldviews that have evolved sufficiently, to make better sense out of the challenges confronting us. It is from this point of departure that this book series launches. Just as we have seen the advances in the material conditions of living over the last couple of centuries that putting current thought in the hard sciences into action has brought, I believe we need to look in a similar way to the best of current thinking around the human condition in a broader sense to work for us in guiding our actions in relation to how we use the material and scientific progress.

Thus worldviews become critical to consider in the context of leadership. I participated in two recent panels at International Leadership Association conferences where worldviews and leadership was the topic, which gave me a clear indication that this notion is beginning to gain traction. What was also clear was the need to take the growing understanding of a set of emerging worldviews and enable them to generate a set of principles that can help guide the work of leading ongoing and newly emerging transformative process in higher education. This book series is a significant step towards addressing this need.

The series starts out with a look at how this worldview has come about and what the contours of it appear to be from the perspectives that Gary Hampson is able to immerse us in. *Leadership in Transforming the Modern Worldview: Exploring Postformal Integration* presents a worldview that can be characterized as reconstructive postmodernism, integrative, transformative, postformal etc. and is best served by a "scholarship of integration." It is this kind of scholarship, so lacking in academia in general, that Hampson excels at. His book not only carves the contours of such scholarship, it takes us deep inside the history and dialectics between postmodern forms of thought and integrative streams, focusing on Wilber's AQAL model as an exemplar of this. It is a rich journey through the landscape of what can be found in both the current thinking around this worldview as well as the historical roots, threads and modalities that are emerging as various strands of thought engage and articulate the emergence of this worldview.

It is from the background this perspective provides that the next step found in Volume Two can be taken: to examine more closely the idea of how to lead higher education both through its own transformative process, and towards en-

acting a transformative agenda. *Leading Transformative Higher Education* helps to lay out the agenda for producing an educated citizenry adequate for the 21st century. The range of chapters takes us from context through character and specifics to horizons for the future. The authors come from a diverse range of backgrounds and articulate a vast range of experience with the guiding ideas and principles of transformative higher education. There is a sense of "let a thousand flowers bloom" as these various perspectives give voice to how the emerging world appears.

Volume Three, *Transforming Leadership in Worldview and Higher Education: An Encounter Book*, takes the context and cases presented in Volumes One and Two and delivers a kind of manual to understanding the mechanics of putting this transformative worldview into action. Here we are invited to engage in the why, who, what and how questions of action. The previous two books utilise questions and reflections for each chapter as a way to make the books user-friendly for academics and students alike. This third book focuses on going into much greater depths about how we can better understand the mechanisms at play in such action.

In this context, the energies of both reform and revolution are necessary (and that there are many good people involved in both). This book series represents more of the revolution strand, the idea embodied in creating an institution from top to bottom infused by the enactment of these transformative principles, ideas, understandings etc.

Many people want to move into a new paradigm, to get beyond business as usual. This notion becomes almost a marketing ploy to identify one's work as being current, hip, or on the cutting edge. In practice it appears to me that this move is a long journey, with many steps, missteps and side tracks. There are a few manifested signs of what a post-conventional approach to education can look like, yet I believe they are still very early hints, and that what is more important is that there are markers put in place like this book series on *Leadership in Transformation of Worldview and Higher Education* which articulates what can be seen at this point along the journey from the vantage point of those involved.

Jonathan Reams

INTRODUCTION TO THE SERIES

Leadership in Transformation of Worldview and Higher Education

Welcome to the *Leadership in Transformation of Worldview and Higher Education* book series! This interactive series comprises a set of three volumes:

1. *Leadership in Transforming the Modern Worldview: Exploring Postformal Integration. Studies, Reflections, Questions*.
2. *Leading Transformative Higher Education. Studies, Reflections, Questions*.
3. *Transformative Leadership and Higher Education: An Encounterbook*.

This series in leadership explores innovative thinking beyond the contemporary dominant worldview – modernism – and its implications for higher education. It advocates for a transformation of worldview toward one which is itself transformative. Concomitantly, it pictures that modern higher education transforms into transformative higher education. It also involves interactivity to facilitate transformative learning. This includes ample opportunities for active engagement with the text along with spaces for reflection and contextualisation.

Leadership forms an inherent part of this process. Appropriate leadership *in action* can only occur if there is sufficient leadership *in thought*. This understanding forms part of *transformative* leadership – that arising from the new worldview. Specifically, sufficient depth of understanding is required to analyse and act on the contemporary situation in the most effective way. A radically transformative higher education both sits within, and contributes to the production of, a transformative worldview.

Volume One provides a solo-authored in-depth exploration of the worldview beyond modernism, through various studies. Its lens is that of postformal integration, including address of integral approaches. Book Two explores transformative higher education from a range of perspectives offered by academics in the field (chapters as studies). Book Three provides scaffolding for the first two books through explaining key topics with respect to the transformation of worldview and higher education.

The series can be read in two ways. The first option is that they can be read deductively from Volume One to Volume Three: Volume One offers a worldview orientation which provides a rationale for the transformative higher education discussed in Book Two; Book Three then further concretises worldview and higher education in practice. The second option is that the series can be read in terms of increasing depth of understanding; in this instance, Volume Three can be read first to establish an orientation to the topics. This adaptability can be understood in relation to different learning styles (those that prefer "top down deduction" and others that prefer "ground up induction," respectively).

The series itself seeks to form part of the transformative worldview in that it explores a novel form, one which performs its own type of postformal integration, namely, that of connecting scholars with students through the written medium. The series thus includes both scholarship and text book questions for students. These are brought together via intermediate scaffolding including explanatory reflections and more advanced questions. Students' learning is potentially enhanced by seeing the potential depth of discussion and the reasoned contestability of academic viewpoints, whilst academics' understandings are enhanced by connecting abstract scholarship to concrete examples. An appropriate level of questioning throughout maintains the whole endeavour as an aptly open system, and points to the significance of the process of ongoing deep *inquiry* at all levels – in relation to ideas, but also with respect to interpersonal relationships and structures within any institutional context which genuinely seeks to be transformative.

We hope you enjoy the offerings and are stimulated to engage with these exciting and pertinent ideas at different levels of depth. We hope you help lead the world toward becoming a better place.

1

Introduction

This encounterbook offers an opportunity for a unique engagement with the field of transformative leadership, specifically with reference to its application in the fields of adult learning and higher education. This is achieved through offering a structured encounter with transformative theories, approaches to transformative learning, and transformative tools. Rather than focussing on transferring knowledge we supply a container for immersion in the concepts presented through engaging ideas, awareness, and application. We strive to offer spaces for dialogical reflection that balance action and reflection, as well as challenge and support. Some of these calls to application require specific experience and knowledge, others require more intuitive insight. In this way, the reader is challenged and supported at multiple levels. The text and the learning opportunities which it contains are potentially demanding, but readers should not be discouraged – ultimately they will get out what they are willing to put in.

Most of the chapters of this encounterbook present theories of particular individuals, theories of particular schools of thought, and movements of theory and practice, some of which have not been sufficiently analysed from an academic point of view, i.e. they have neither had significant academic address nor have their claims been necessarily aptly evaluated by controlled empirical studies, etc.. This does not mean, however, that it cannot be enriching or even life-changing to engage with them. It just means that it is helpful to keep in mind that you, the reader, have to rely in many cases on your own authority when evaluating the information presented to you, by engaging with it both cognitively and experientially.

Much of the presentation of the topics given in the current volume is relatively superficial and incomplete – as befits the personal interests of the authors. We deem this appropriate for an encounterbook because the aim of the book is merely to awaken interest in the reader; but for more complete and contextualised understanding, further reading is indispensable. In this regard, the reader is alerted to the various adequacies of Volume One of the present series for a more deep engagement of several of the items of interest in the current volume.

2

Encounter: An invitation

What is an encounterbook?

This book aims to move beyond the role which is normally played by a textbook. Rather than merely supplying a set of practice exercises to consolidate conceptual retention in preparation for assessment, it seeks to engage the learner in a process of transformation. It elucidates the experience of transformative leadership, transformative learning, and shift in worldview perspective. Practically this means that readers are given functional agency to navigate their own engagement with the text. The text offers opportunity for discovering new concepts, ideas, and tools, but more than that, it provides structured occasions for reflection resulting in a deeper sense of awareness. Readers have the possibility of examining how these ideas can be applied in their own life-work. All of this takes place in a format which readers can customize to fit their personal style through writing/drawing/scribbling directly on the pages, thus making the book an evolving object of their own subjective expression. This balance of reflection and action is the basis of the "encounterbook" and lays the stepping stones for a transformative praxis which potentially enables readers to name their own worlds.

This encounterbook is not an encyclopaedia and does not attempt to be a comprehensive handbook in the fields of transformative leadership and transformative higher education. Rather it offers a range of topical opportunities to engage with handpicked ideas, concepts, and tools in a range of formats. These serve to provide readers with a potentially transformative encounter; readers who wish for a more comprehensive engagement may refer to the first two volumes of Leadership in Transformation of Worldview and Higher Education, or to the comprehensive reference list and resource list included in this publication.

Our approach

In order to support readers in navigating their encounter, we have chosen to introduce a structured yet flexible system of road markers. The intention is that these signposts help readers to be able to get a quick overview of any part of the text. This in turn should help them self-direct their encounter in order to tailor

their engagement with the text to meet their individual interests and learning needs. Our objective is not to explain all unusual terms, as that would have required many more pages, but to focus on the main ones. Readers are encouraged to use the Internet for any aspect that draws their attention, thus making the Internet a seamless extension of this encounterbook. For some topics, knowledge of philosophy and social theory might be advantageous; nevertheless, lack of such knowledge should not be an insurmountable obstacle. If readers are willing to be self-directed (or auto-didactic) in their approach and take responsibility for filling in any gaps they have, they will get what they need from this publication. Our hope is that "strange" terms used in the advanced literature that is presented in this book raise curiosity, and that readers will look them up.

Key concepts

This icon is found at the start of all major sections. It contains a list of key words or phrases, which communicate the most important concepts dealt with in that section in order to provide an overview.

Theory

Sections following this icon deal with conveying concepts, tools, or theoretical information. They consist primarily of either text or tables and graphic representations.

Awareness

Sections following this section provide exercises and activities that serve to support the consolidation of concepts in our embodied awareness.

Application

Sections following this icon provide activities which focus on practically applying concepts to the field of leadership in transformation of worldview and higher education.

ENCOUNTERING TRANSFORMATIVE THEORY

3

Paradigms of knowledge

- Positivism
- Post-positivism
- Critical theory
- (Social) constructivism
- Cooperative enquiry
- Paradigm shift
- Methodological anarchism
- The con game

Guba (1990) introduces four paradigms which he believes have shaped academic, discourse in recent times: namely positivism, post-positivism, critical theory, and social constructivism. He then unpacks each of these paradigms in terms of their respective ontologies, epistemologies, and methodologies. In what follows, we will explore each of these four paradigms (summarising their ontologies, epistemologies, and methodologies) and critically appraising them in terms of strengths and weaknesses. Then we will extend this analysis to a fifth paradigm, cooperative enquiry (Heron & Reason, 1997). Finally, we will examine all of these paradigms together in terms of some major issues arising in academia today (Guba & Lincoln, 2000).

Positivism and post-positivism

Basic beliefs of the positivist paradigm (Guba, 1990)

Ontology	**Realist** • Reality exists external of us and is knowable;* • Our perceptions are governed by immutable natural laws and mechanisms; • Insight into real entities, laws, or mechanisms is conventionally expressed in terms of time- and context-free generalizations, most notably laws of cause and effect.
Epistemology	**Dualist / Objectivist** • An inquirer or experimental scientist adopts a distant, non-intervention posture towards reality; • Biasing and confounding factors, such as values, are excluded from the experimental process and are considered not to have an effect on experimental outcomes.
Methodology	**Experimental / Manipulative** • Research questions and hypotheses are stated in advance as propositions; • Propositions are subjected to empirical experimental testing under carefully controlled conditions.

* According to the positivist position, it is possible that with sufficient experimentation we might be able to understand all of reality and state it in verifiable propositional terms.

Table 1: Positivism as a paradigm of knowledge

Basic beliefs of the post-positivist paradigm (Guba, 1990)

Ontology	**Critical Realist*** • Reality actually exists, but we are unable to fully apprehend it; • Reality is governed by naturalistic mechanisms or laws that we can only partially understand;
Epistemology	**Modified Objectivist** • Objectivity is an ideal, but it can only ever be approximated; • As a precaution special emphasis is therefore placed on external guardians such as the critical community.
Methodology	**Experimental / Manipulative** • An emphasis on critical multiplism; • Enquiry is conducted in more natural settings in an attempt to redress imbalances brought about by the confounding influences of perceptions; • Introduction of qualitative methods (with increased dependence on grounded theory approaches); • Reintroduces the value of discovery into the process of enquiry.

* This use by Guba (1990) should not be confused with Bhaskar's critical realism (e.g. Bhaskar, 1978).

Table 2: Post-positivism as a paradigm of knowledge

Strengths

The positivist scientific method, which in turn forms the ideological basis of post-positivism, has developed over a long period of time and presents us with a range of sophisticated and often highly accurate tools for investigating and understanding (inductive approach) and speculating about (deductive approach) natural phenomena. This approach has been refined over time through countless experiments under the guidance of many undeniably great minds. As a result these tools have provided us with knowledge that has formed the basis of some of the most important achievements of our time. As a philosophy of knowledge and science, positivism has its roots in classical empiricism and pragmatism

(Flew, 1999) which can be traced back to Aristotle (Hamlyn, 1968). Positivism as a unique philosophical term was introduced in the 19th century by Auguste Comté (1865/2009) and has been developed and transcended in the terms of postpositivism in the 20th century by, for instance Popper (1963), Kuhn (1962), Pickering (1984), and Quine (1992).

Weaknesses

As the above paragraph delineates, the positivist and post-positivist paradigms are useful in a large but nevertheless limited range of contexts. These approaches deal effectively with objective (external) empirically verifiable data, but their response to other types of knowledge has been one of condescension to the point of denying their existence. Ever since the enlightenment, positivistic approaches to science have claimed a monopoly over knowledge, and in so doing have alienated other paradigms of knowledge and prevented their growth and development. This has particularly been the case with regards to the social sciences which overlap only partially with the realm of natural science. Three theorists who have contributed significantly to this critique of the prevailing scientific method are Thomas Kuhn, Paul Feyerabend, and W. Petrus du Preez. In what follows, some of their core arguments are presented. Perhaps the most comprehensive, profound, and revolutionary criticism of the dominant approach to scientific inquiry is presented by Bhaskar's critical realism; this is presented in Section 2 of this volume.

Kuhn's essay, *The Structure of Scientific Revolutions* (1962), proposed a structure for the way in which science develops (see the diagram below). In presenting this structure he pointed out that scientific propositions are not axiomatic expressions produced in a vacuum, but rather that they incorporate hidden assumptions the scientist holds about reality and uses to construct a comprehensive worldview. As a result Kuhn's model makes space for the inclusion of sociological, psychological, and historical viewpoints in the development of scientific knowledge.

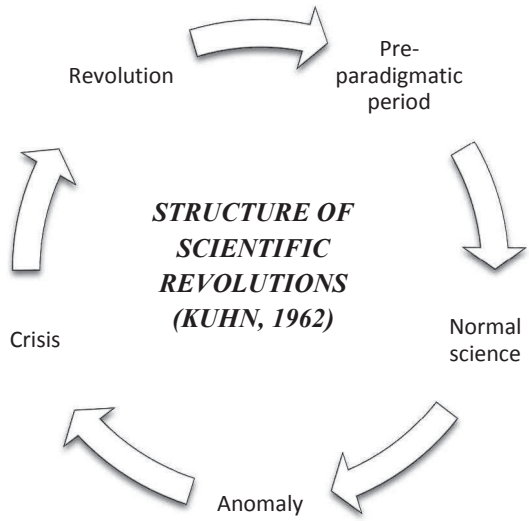


Figure 1: The structure of scientific revolutions

In his book, *Against Method*, Paul Feyerabend (1975) built upon the groundwork laid down by Kuhn by clarifying the different types of science and explaining the influences of social, psychological, cultural, and historical factors on scientific knowledge. Feyerabend points out that there are different types of science and that they share no common structure. As a result, he claimed, there is not a single definitive 'recipe' which can explain scientific success. Accordingly scientists should not assume that one type of science (one particular preferred formula for the generation of knowledge) is superior to other paradigms.

Feyeraband went on to distinguish between what he calls "Western Science" and "Ethno-Science". He pointed out that "ethno-sciences" – conceptions of science that have been developed in indigenous contexts – have developed understandings of knowledge which have served the unique needs of the particular context in which they were developed. He submitted that the progress of Western science has often been at the expense of ethno-sciences, because it has had a tendency to act as a sort of "political pressure group" and has been responsible for "killing minds" in the process.

Du Preez (1980) continues this line of reasoning. He describes the method that the prevailing approaches of science (typically Western and colonial models) use to disempower ethno-scientific approaches as a type of elaborate 'con game'. Rather than resorting to the sorts of warfare and slavery that were used by colo-

nists in the past, science (and the social contexts from which they emerge) now attempt to wage war against other cultures in the sphere of ideas and knowledge. Once oppressed cultures are taken in by the con (that is, once they believe that their knowledge is inherently inferior) they become powerless consumers of a commoditised and externally imposed knowledge system.

Critical theory

Basic beliefs of the critical theory paradigm (Guba, 1990)

Ontology	**Critical Realist*** • An observation invariant reality exists, but we are unable to fully apprehend it; • Reality is governed by naturalistic mechanisms or laws that we can only partially understand.
Epistemology	**Subjectivist** • Enquiries are mediated by values.
Methodology	**Dialogic / Transformative** • Facilitates transformation through the elimination of false consciousness.

* This use by Guba (1990) should not be confused with the term Critical Realist when used to indicate a philosophy of science (e.g. Bhaskar, 1978).

Table 3: Critical theory as a paradigm of knowledge

Strengths

Critical theory opens up a whole new field of knowledge and enquiry that has been side-lined by positivism. Critical theory acknowledges the socio-political influence of values upon the construction, acquisition, and representation of knowledge and therefore makes it worth exploring. It also gives the epistemological act a noble aim, in that the act of perceiving the world as an active subject becomes an act of emancipation.

This emancipatory orientation means that critical theory moves towards addressing the imbalances created by previous paradigms (as discussed above). As such it is able to create an opportunity for those who have been disempow-

ered and rendered voiceless by cultural and academic imperialism to name their own world (Freire, 2000, p.68). This has, for instance, been the case in critical feminism where women's unique voices have been emancipated through critical praxis (Nicholson & Seidman, 1995).

Weaknesses

The notion of praxis is often referred to by critical theorists (Giroux, 1997; Freire, 2000; Macedo, 2006; Kincheloe, 2008); it is an integral part of its dialogical methodology. However, as there is not a clear participatory aspect to its methodology, the production or presentation of knowledge is often still monopolized by the researcher and as such the ideological biases of the researcher as a 'transformative intellectual' may prove to have a disempowering influence upon participants. Consequently their praxis is weakened and reverts to mere "verbalism". In other conceptions control is placed to varying degrees in the hands of the community who then, driven by a revolutionary spirit, are inclined towards action without sufficient dialogical reflection. Once more the praxis is weakened and becomes nothing more than "activism" (Freire, 2000, p.68). In short, the praxis at the heart of critical theory's methodology is difficult to maintain without the methodological clarity which has been provided by subsequent paradigms such as 'participatory action research' (O'Brien, 2001), as well as 'cooperative enquiry' (Heron, 1988; Reason & Heron, 1995).

Although critical theory's epistemology inclines it towards taking values into account, its overtly political stance gives it a collectivist orientation towards social transformation and reconstruction. A possible weakness of the approach is that it has a tendency to overlook the individual subjective experience by focussing on socio-political reconstruction. The focus is on eliminating a false social consciousness (dealing in an inter-subjective space), and as a result the individual structures of consciousness and the spiritual (transpersonal) dimensions of personal experience are neglected.

Social constructivism

Basic beliefs of the social constructivism paradigm (Guba, 1990)

Ontology	**Relativist** • There is no observation invariant reality; • Conceptions of reality are multiple and context-bound; they are mental constructions; • These constructions are socially and experientially mediated, and therefore localized and content specific; • These constructions are idiosyncratic, as their form is dependent upon the people who hold them.
Epistemology	**Subjectivist** • The inquirer and the subject of enquiry are epistemologically fused. • Knowledge is produced through a discursive process of interaction between the inquirer and the subjects of inquiry.
Methodology	**Hermeneutic / Dialectic** • Individual constructions are elicited and refined hermeneutically; • Constructions are compared and contrasted dialectically, with the aim of generating (multiple) constructions on which there is substantial social consensus.

Table 4: Social constructivism as a paradigm of knowledge

Strengths

Social constructivism appears to open up a new way of perceiving the world. In this paradigm we become aware that our experience of the world (empirical) is not necessarily the same as our (constructed) understanding of it. Our understandings are cultural artefacts mediated by socio-historical discursive interactions; they are not reliant upon objective verification, but are rather subject to the vicissitudes of social processes. Being able to understand the ways in which these social artefacts are constructed is a valuable endeavour as the ways that we con-

struct realities define our activities within them. In fact, the very act of explaining our understanding constitutes a social action (Gergen, 1985).

The French socio-historian, Michel Foucalt (1970; 1973; 2002; 2006), detected numerous power structures at work in all areas of our society. Social constructivism enables us to hermeneutically address these hidden sites of power and unmask them.

Social constructivism profoundly enriches our understanding of the social sciences by enabling us to perceive the cultural multiplicity of truth. In this way we can perceive that different cultures can have radically different interpretations of the same type of experience (see for example Stearns' [1995] discussion on emotion) and sometimes create socio-linguistic constructs which are foreign to other socio-cultural milieus (see for example Menon & Schweder, 1994). Of course this notion of cultural relativity has significant implications for the social sciences (see Gergen, 1985; Gergen, 1991; Varma, 1995).

Weaknesses

Reflexivity and textual representation often prove to be problematic for researches in this paradigm. The combination of a relativist ontology with a subjectivist epistemology means that the subject constructions of the researcher may affect her perceptions and analysis of discourse as well as her textual representations. Textual representation is itself a social act and should, therefore, be interrogated.

Constructivism's exclusive focus on the intersubjective space of socio-cultural discourse has led to a reductionism where social relativism becomes a dogmatic rule. Obviously there is a logical inconsistency in this position ("all knowledge is relative except for the universal pronouncement that I have just made"), but over and beyond that, social constructivists are likely to overlook objective mechanisms which exist and which enable us to mediate the objective physical reality of the natural world. Furthermore, the focus on inter-subjective constructions once more neglects the importance of our individual subjective (or phenomenological) and transpersonal experience.

Cooperative enquiry

Basic beliefs of the cooperative enquiry paradigm (Heron & Reason, 1997)

Ontology	**Participative Reality** • Subjective and objective reality are co-created by conscious minds and the given cosmos.
Epistemology	**Critical Subjectivity** • The inquirer exercises critical subjectivity in a participatory transaction with the cosmos; • Knowledge is co-created; • Extended epistemology allowing for three different types of knowing: o The experiential; o The propositional; and o The practical.
Methodology	**Participatory** • Discovery facilitated by political participation in collaborative action enquiry; • Primacy is given to practical knowledge; • The use of language in the construction of knowledge is grounded and mediated by shared experiential contexts.

Table 5: Cooperative enquiry as a paradigm of knowledge

Strengths

One of the strengths of cooperative enquiry lies in the development of a new technique, which Reason and Heron (1995) created, which they term "critical subjectivity". This is the capacity to introspectively observe one's own subjective material (thoughts, feelings, sensations) while engaging different states of awareness, and still remain mindful and critical of one's particular interpretations, biases, and prejudices.

Another strength of this paradigm rests in Reason and Heron's (1995) definition of a new form of knowledge which they refer to as presentational knowledge. This form of knowledge is concerned with the ways in which people convey experiences to one another, and how they chose to express this.

Another aspect of the paradigm is the recognition that human beings are spiritual entities who exist within a web of ecological relationships. Heron and Reason write:

> We start from the view that a person is a fundamental spiritual entity, a distinct presence in the world, who has the potential to be the cause of his or her own actions (1995).

In the same paper they acknowledge that their approach "involves learning to integrate individualising characteristics with a deeper communion with others and the world".

Weaknesses

Textual representation is deeply problematic in this paradigm. The researcher is faced with the dilemma of translating her own presentational knowledge as well as that of other participants into a form which is authentic, valid, and intelligible. This methodology has a range of practical limitations, as it places extraordinary demands on participants and requires that they are, in fact, prepared (in all senses of the word) to collaborate as interested co-researchers. This preparation entails the development of various capacities such as critical subjectivity which necessitate a high level of developmental function. Furthermore, this paradigm is only useful for enquiring into a very limited and specific kind of research question. In this way it is, despite its apparent inclusivity, also limited.

Comparing paradigms (Lincoln & Guba, 2000)

	Positivism	Post-positivism	Critical theory	Social constructivism	Cooperative enquiry
Axiology	There is intrinsic value in generating propositional knowledge about the world. This is a valid end in itself.		Propositional knowledge plays an instrumental role in the praxis of social emancipation (which is a valid end in itself).		Practical knowing is intrinsically valuable because of its relevance to living.
Accommodation and commensurability	Commensurable with all positivist forms		Incommensurable with positivist forms; some commensurability with constructivist, criticalist, and participatory approaches, especially as they merge in liberationist approaches outside of the West		
Action	Action is viewed as "advocacy" and subjectivity, thus a threat to validity and objectivity. Therefore a strict separation between reflection and action is required.		Social reconstruction is the eventual goal of this paradigm; praxis encompasses empowerment through praxis (encompassing both action and reflection).	Action is an integral part of the validity of the approach. Enquiry is generally incomplete without action being taken by participants. Knowledge itself is understood as a political act.	
Control	Researcher as locus of control		Resides with "transformative intellectual" or situated within community	Shared between enquirer and participant	Shared to varying degrees
Relationship to the foundations of truth and knowledge	Foundational		Foundational within social critique	Anti-foundational	Non-foundational
Extended considerations of validity (goodness criteria)	Traditional positivist constructions of validity, rigour, internal and external validity, reliability, and objectivity.		Social transformation, equity, and social justice	Extended constructions of validity: authenticity; catalytic; relational; community centred	Transformative activity; collective enquiry
Voice reflexivity, and textual representations	Voice of researcher is dominant; textual representation unproblematic and formulaic		Voices of researcher and participants mixed	Mixed voice (with participant voices sometimes dominating); reflexivity potentially problematic	Voices mixed; textual representation rarely discussed and problematic; reflexivity relies on critical subjectivity and self-awareness
			Textual representation practices potentially problematic		

Table 6: Comparison of different paradigms of knowledge

Positivism

Describe your personal experience of this paradigm.

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Post-positivism

Describe your personal experience of this paradigm.

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Critical theory

Describe your personal experience of this paradigm.

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Social constructivism

Describe your personal experience of this paradigm.

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Cooperative enquiry

Describe your personal experience of this paradigm.

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

3.1. Critical realism

- Critical realism
- Dialectical critical realism
- Philosophy of metareality
- Transcendental naturalism
- Relativism
- Explanatory critique
- Imminent critique
- Transitive domain
- Intransitive domain
- Stratification
- The real
- The actual
- The empirical
- Emancipation

Philosophical overview

Critical realism* (CR) is a school of thought founded by Roy Bhaskar, a British philosopher whose writing might be identified as stemming from the British analytical school (Hartwig, in Bhaskar, 2008). His work, over three and a half decades of scholarship, has aimed to go further in creating a viable alternative to the positivism that has dominated scientific discourse, and – in so doing – establish once and for all the impossibility of any return to this approach (Bhaskar, 1978). In the process Bhaskar has established himself as one of the most significant realist thinkers in the last quarter of the 20th century to the present (Baehr, 1990). His work has passed through at least three distinct phases over this time (Hartwig in Bhaskar, 2012; Hedlund-de Witt, 2012), as shown in following table.

* This is not to be confused with other schools of thought which have also laid claim to the term, including theological critical realism. A thorough treatment of the various uses of the term critical realism can be found in Shipway's (2002) doctoral thesis.

Name	Key References	Description
Basic critical realism (CR)	Bhaskar, 1978; 1979; 1986	Focused on using explanatory critique to clarify the necessary relationship between a realist ontology and relativist epistemology. This gave rise to transcendental realism in the natural sciences and critical naturalism in the social sciences.
Dialectical critical realism (DCR)	Bhaskar, 1993 / 2008; 1994	Introduces the dialecticization of critical realism as "the emancipation of dialectic (for the dialectic of) emancipation" (Bhaskar, 2008, p.40). This stage of CR also encompasses the introduction of arguments for a transcendental dialectical critical realism (TDCR), first emerging with the publication From East to West (2000), which is considered to be the first stage of Bhaskar's spiritual turn (Hartwig, in Bhaskar, 2012).
The Philosophy of MetaReality (PMR)	Bhaskar 2002a; 2002b; 2012	Essentially a "preservative sublimation" of CR, DCR, and TDCR. It uses CR's ontology as a foundation which offers an understanding of the "fundamental shape of relative reality (the world of non-identity and duality)" (Hartwig, in Bhaskar, 2012: p.viii), whilst also surpassing this ontological position in a maneuver which moves from "realism about transcendence... to the self-transcendence of realism (Bhaskar 2012, p.11)". This culminates in the prioritization of identity over difference, the prioritization of unity over division, and the thematization of nonduality (Hedlund-De Witt, 2012) leading to the realization of the primacy of an infrastructural absolute reality, or ground state, as a necessary condition for "any being at all" (Bhaskar, 2012, pp.268).

Table 7: The stages in the development of critical realism

In recent decades, Bhaskar's work grown in influence and popularity, but despite this it continues to be considered a radical movement on the periphery of philosophical discourse (Shipway, 2002; Hampson & Rich-Tolsma, 2013a). This might relate to the uniqueness of his position which is independent of any "epistemic point of view that has contemporary standing" (Corson, 1991a, p.189). The tone of much CR discourse is inherently critical; this is largely due to its utilization of a methodology of explanatory critique which almost invariably means that critical realists find themselves at odds with prevalent thinking (Norris, 1998). Bhaskar's work is also difficult to situate with reference to prevalent contemporary approaches due to the fact that it simultaneously accepts and rejects aspects of two major paradigms of knowledge presently used in academic discourse, namely empiricism (under the guise of positivism) and idealism (under the guise of relativism) (Shipway, 2002). Bhaskar has also been criticized for the density and turgidity of his prose; his work is thought to be somewhat obscure, esoteric, and verbose (Baehr, 1990; Collier, 1994; Roberts, 2001) and this might give it an air of impenetrability that seems to be at odds with its professed dialogical intentions. At the same time it might be argued that the density of Bhaskar's style, perhaps partially related to his adoption of the Hegelian notion of immanent critique (Hedlund-de Witt, 2012), has led to a level of rigour which is indispensable to the defensibility of his approach.

We will now briefly examine critical realism in terms of its basic ontology, epistemology, and methodology For the purposes of simplicity, the following table does not deal with refinements offered by dialectical critical realism and the Philosophy of Meta-Reality.

Ontology	• CR's ontological approach can be understood as transcendental realism. This can be distinguished from other forms of realism due to the ways in which it distinguishes ontological depth. This depth realism includes the following three dimensions: o Three ontological domains – The Real encompassing the basic mechanisms of reality; the Actual encompassing the Real as well as the events arising from these real mechanisms; and the Empirical which encompasses the Real, the Actual, and the real of experience of actual events. o Ontological strata – This implies a basic hierarchy of being with some ontological strata being more basic than others. This effectively describes the way in which being emerges through a hierarchical process of evolutionary complexity, that is to say that anything belonging to a higher stratum is necessarily governed by more than one set of laws. We can observe a movement towards greater complexity moving, in broad strokes, from the physiosphere (the world of material beings), to the biosphere (the world of material beings), to the world of 'rational' beings (Collier, 1994, pp.107ff). Bhaskar (1978) argues that the objects of science refer to underlying mechanisms, as opposed to events. In any one event numerous scientific predicates may prove to be of relevance, as the actual reality is invariably constructed from a number of stratified layers of real mechanisms. At the level of mechanisms there is a clear evolutionary (emergent) directionality, as described above; however, this does not apply in the same way at the level of events. It is thus possible to differentiate horizontal explanations, dealing with the explanation of events in terms of mechanisms and antecedent causes, from vertical explanations, which deals with the explanation of one event by those more basic events which evolutionarily precede it (Bhaskar, 1978: pp.178ff; Collier, 1994: p.48).

	o Two ontological dimensions -- CR identifies two different ontological dimensions: the Intransitive Dimension (ID) and the Transitive Dimension (TD). The insight provided by an understanding of these simultaneously existing domains reveals that "there is no conflict between seeing our scientific views as being about objectively given real worlds, and understanding our beliefs about them as subject to all kinds of historical and other determinations (Bhaskar in Norris, 1998, p.5)". The ID is the ontological realm dealing with the actual objects of science. This dimension encompasses the things to which scientific theories refer. Bhaskar argues that the existence and development of scientific theories through a process of experimentation necessitates the existence of the ID. That is to say, that science is about something, and that the mechanisms and events which are the objects of scientific knowledge exist independently of all human activity (Bhaskar, 1978: p.17; Bhaskar, 1986, p.5; Shipway, 2002: p.89; Corson, 1990: p.38). The TD is concerned with the relativistic social aspect of science. Whereas real mechanisms form the objects which science investigates, scientific theories themselves emerge through a process of intersubjective agreement and debate. The transitive nature of this type of knowledge means that it is constantly subject to revision and change (Collier, 1994: p.50ff). • Bhaskar acknowledges the significance of the ontological commitment implied by claiming the existence of the ID. The magnitude of this commitment leads him to the development of two key realizations regarding the nature of ontological presuppositions: o Whatever we believe about ontology is necessarily theoretical; it therefore exists in the TD and should only be understood hypothetically. He suggests that such ontological enquiries merely query what the world must be like in order for science to exist; in order to ask this question he supposes that the predictive and controlling success of the scientific method offers sufficient

	evidence for its existence (once again necessitating the reality of the mechanisms which underpin it). o It is impossible to make any sort of ontological proposition independent of a comprehensive and coherent account of science (Bhaskar, 1978). • Bhaskar distinguishes between open and closed systems, and also introduces the notion of the "laminated system" in which it is impossible to refer to one level of the system without reference to others (see for example Bhaskar et al. 2010).
Epistemology	CR views science as a social activity about real things (in other words a process in which transitive knowledge is generated with reference to intransitive mechanisms). This enables a relativist epistemology to co-exist with a realist ontology. Bhaskar (1978, p.189) writes, Recognition of the transitive dimension implies that scientific beliefs can no longer be distinguished by their content. For experiences and the facts they generate must now be viewed as socially produced and what is socially produced is socially changeable. There are no absolutely privileged statements. The application of the category 'empirical' becomes relative and theory-dependant.... Knowledge, viewed as a transitive process, has no foundation – only a structure in time.
Methodology	• Bhaskar uses a methodology of explanatory critique in order to move, beyond induction and deduction, to retroduction – "the move from a manifest phenomenon to an idea of a generative mechanism, which if it were real would account for the phenomenon in question" (Hedlund-de Witt, 2012, p.9). Additionally he makes extensive use of immanent critique as a (potentially self-reflexive) tool drawn largely from Hegelian and Marxist roots and the Frankfurt School (Hedlund-de Witt, 2012). • Transcendental realism as a philosophy of science along with the transformational model of social activity (TMSA) generated by the critical naturalist approach to the social sciences, seems to necessitate an approach to academic

	inquiry that transcends disciplinary boundaries. Accordingly, Bhaskar (in Bhaskar et al. 2010: p.20) identifies the following core conditions for successful interdisciplinary work: o Disambiguation of ontology and epistemology; o Anti-reductionism; o The idea of explanation in terms of a laminated totality; o What may be called the holy trinity of interdisciplinary research: metatheoretical unity, methodological specificity and theoretical pluralism and tolerance; o The dissolution of career, administrative and financial barriers to interdisciplinary research.

Table 8: Bhaskar's critical realism as a paradigm of knowledge

Due to the fact that the central thrust of critical realism is as the development of a philosophy of science its focus is often the critical examination of paradigms of knowledge. Often this involves revealing the ways in which ontology and epistemology are fallaciously confused or conflated. Specifically this involves attempting to limit ontological statements by reducing them to epistemological claims (Bhaskar, 1978). Bhaskar has identified this confusion as being a pervasive obfuscating factor in most philosophical discourse (Shipway, 2002) and identifies it as affecting not only positivist and empiricist approaches, but idealist and pragmatic ones as well (Collier, 1994). He terms this reductionist manoeuvre the epistemic fallacy. Collier (1994) identifies four key ways in which this fallacy arises. The epistemic fallacy is also sometimes inverted, taking the form of the ontic fallacy (Shipway, 2002). Whereas the epistemic fallacy overlooks the intransitive nature of ontological objects, the ontic fallacy overlooks the socially constructed and (inter-) subjective nature of knowledge (the TD). Other prevalent fallacies which Bhaskar identifies include actualism (reducing the domain of the real to the domain of the actual) and ontological monovalence (the erroneous notion that being is purely positive) (see, for example, Hedlund-de Witt, 2012).

Critical realism and education*

Despite the fact that Bhaskar has not written much directly on the topic of education, critical realism has continued to have a significant impact on the educational literature (see Hampson & Rich-Tolsma, 2013a). Bhaskar is presently editing an ongoing book series on New Studies in Critical Realism and Education (published by Routledge).

Shipway (2002) identifies a number of key implications of CR for education. These include the following:

- Due to its stratified ontology's focus on fundamental structures and mechanisms, CR reveals the partiality of educational praxis. For this reason educators should be careful to avoid the epistemic and ontic fallacies.
- CR identifies education as being among the most open systems in the social sciences (Corson, 1998). Positivist research tools are closed system tools and thus inappropriate in the field of education.
- Critical naturalism argues for the causal efficacy of reasons. People's accounts and reasons should therefore be considered as important sources of social scientific evidence, and thus a starting point for sound educational research. The alethic grounding of CR makes it possible to disconnect post-modernist methodologies (which are specifically adept at capturing data around people's reasons) from their ontological traditions and effectively combine them with a realist ontology. The resulting research is therefore able to avoid reductionist relativism and irrealism.
- CR based educational research is inherently transformational and subversive, because explanatory critique possesses a unique methodological capacity to illuminate the effects of structures and mechanisms as well as the lineages of particular educational approaches.
- The homologous relationship between socialism and CR (as identified by Collier, 1994) suggests an approach to the development of a stratified, democratic use of power in the field of education (Shipway, 2002).
- The ontological primacy of absence (which views praxis as an act of transformative absenting (Bhaskar, 1994) points to the essentially emancipatory character of education as an activity concerned with moving stakeholders from unwanted/unneeded sources of determination to wanted/needed ones (Bhaskar, 1986; Collier, 1994; Shipway, 2002).

* A more comprehensive review of the effect of critical realism on the educational literature may be found in Hampson & Rich-Tolsma (2013a).

- The axiology of freedom establishes the equal moral worth of all individuals regardless of their emancipatory (rational-developmental) potential (this argument is developed by Shipway [2002]). However, rational agency is a necessary condition of emancipation (Bhaskar, 1994; Shipway, 2002). This apparent paradox forms the inspiration for what Shipway (2002, p. 328) identifies as a "new definition of the enterprise of education" that of "facilitating the emergent rationality of students towards emancipation"; an idea which he goes on to unpack at some length.
- If this new definition is adopted a new role emerges for the educator: that of custodians of student's emancipation (see Shipway [2002] with reference to Bhaskar's (1994) axiological arguments). Specific pedagogical strategies in this regard (specifically with reference to pre-rational levels of development) are offered, for instance, by Corson (1998).

Describe educational occasions in which you have encountered the following phenomena:

The epistemic fallacy

Relativist reductionism

Positivist reductionism

What do you believe is real, and how does it relate to the various ways in which you perceive reality?

If we are to accept Bhaskar's notion of the transitive and intransitive domains of being, what implications would this have for the way in which we teach any subject?

How would teaching practice change if teachers were to accept the new definition of education proposed by Shipway (2002) arising out of Bhaskar's work: "facilitating the emergent rationality of students towards emancipation".

4

Transformative theory

4.1. Navigating the U

- Theory U
- The blindspot
- Presence
- Presencing

Theory U (Scharmer, 2009) is an approach to generating a sense of social presence which enables a group to illuminate collective blind spots inherent in social systems with the aim of co-generating and co-leading transformation. The process is often visualized through the shape of a 'U': the left hand is a general downward movement of letting go and co-sensing; the trough represents a space connecting to a transpersonal source and co-presencing; and the right hand of the U represents an upward movement of letting come and co-creating. Scharmer proposes that this necessitates a deep quality of attention and identifies the U as a progressive movement through four fields or structures of attention: field one involves operating from the old 'me-world'; field two involves moving into the current "it (exterior) world"; field three involves operating from the current 'you-world'; while field four involves operating from the highest future possibility that is wanting to emerge. He argues that a movement from the reactive postures of field one to the more integrative and transformative impulses of field three and four are needed in order to create change throughout a complex system. On a micro (individual thinking) level this correlates to moving through four levels of listening: listening one involves downloading habits of thought; listening two involves object-focussed listening; listening three involves empathic listening; and listening four involves generative listening.

The U may be understood as a single process emerging through the following five movements:

Co-initiating	This movement involves generating collective intent, taking time to listen deeply to others, and tuning into where life is leading us.
Co-sensing	This is a movement of careful observation and involves opening ourselves to emergent possibilities and potentials.
Presencing	This is a movement of surrendering our wills and connecting to the deep and still source of inspiration; in the midst of this deep silence an inner sense of embodied knowing is empowered to arise to the surface.
Co-creating	This movement entails exploring what prototypes of the new might look like and imagining how they might translate into real world action.
Co-evolving	This final movement is concerned with holistic embodiment and facilitating the ecosystemic emergence of the new.

Table 9: The movements along the U

Do you recall going through an individual or group process that you would characterize as being transformative in nature? Can you identify any of the movements above in the process?

The first and fifth of these movements concern themselves with opening the mind; the second and fourth movements relate to opening the heart (as well as the mind); and the third movement relates to opening of the will. This act of opening and surrender empowers the emergence of novelty by illuminating the blindspots which we normally allow to be obscured by assumptions and superfluous thought.

This process develops as a "technology" of social presencing through the development of seven core leadership capacities, which serve to refine and operationalize the model. In order to take the inner journey mapped by the U and bring transformation throughout a human system it is, according to Scharmer, essential that these capacities are thoroughly cultivated as enabling conditions in a core group.

Holding space	Listening deeply to each other and tuning into where the flow of life is leading.
Observing	An act of careful and deep attentiveness balanced by a genuine open-mindedness and non-attachment.
Sensing	This involves opening our heart to an alignment with the deeper forces of change. This is particular significant because it involves us transcending our piecemeal, analytical mental consciousness and engage with complex wholes.
Presencing	This capacity involves opening the will, delving into the transpersonal field, and connecting with our deepest source of inspiration. Whereas sensing enables us to encounter the whole, presencing enables us to act from the whole.
Crystallizing	This is the capacity to build momentum for transformative action through galvanizing collective intention.
Prototyping	On the way down the left hand side of the U, groups are often confronted by the obstacles of the voices of judgment, cynicism, and fear, which relate to the intellect, the emotions, and the will, respectively. The capacity of prototyping is concerned with mobilizing the head, heart, and hands in service of transformative vision.
Performing	This capacity involves operationalizing a vision in such a way that actions emerge through a macro context rather than simply being extensions of the individual ego.

Table 10: Essential skills for navigating the U

Identify a leader whose leadership you admire. In what ways does she / he embody the leadership skills identified above?

What steps can you take to further develop these skills in your own life and work?

4.2. Flow: The psychology of optimal experience

- Flow states
- Optimal experience
- Normalization
- Autocatalytic experience
- Psychic entropy

Mihaly Csikszentmihalyi's inquiries into the psychology of optimal experience have influenced the way in which many disciplines – from sport to business management – look at concentration. His theory has explored a deeply satisfying state of consciousness, which he calls flow. We believe that this theory has much to offer to our understanding of developmental theory and classroom practice, for example the work of Maria Montessori. Those interested in research comparing these two theories are directed to the work of Rathunde listed in the bibliography. In what follows, we shall concentrate on four central ideas in Csikszentmihalyi's work, namely, (1) attention as psychic energy; (2) disorder in consciousness (psychic entropy); (3) order in consciousness (flow); and (4) the autotelic experience.

Attention as psychic energy

Csikszentmihalyi (1990) begins by pointing to limits in our consciousness, i.e., the finite amount of information which our consciousness can hold at one time. He argues that we often under-utilize this capacity and that is often dispersed among many different tasks. By way of example he says that if following a conversation requires that we process 40 bits of information per second and we are – for instance – able to process 126 bits of information per second we should be able to cover 3 conversations simultaneously, but only if we were to have all of our psychic energy concentrated on that task.

He proposes that we can understand the concentration of attention as the focusing of psychic energy. We are able to describe others by representing them in terms of a sort of psychic energy profile, e.g. focused energy, dispersed energy, imposing energy, stretched energy, a deep well of energy. This in turns leads us to further judgments (such as paranoid, achiever, etc.).

Focused psychic energy is similar to Montessori's concept of normalization, a state of highly focused attention (psychic energy). Montessori taught that normalization's "…principle feature never changes. It is 'application to work'. An interesting piece of work, freely chosen, which has the virtue of inducing concentration rather than fatigue, adds to the child's energies and mental capacities, and leads him to self-mastery" (Montessori, 1988, p.188). When we observe the traits of normalization – or deviation – in a child's behaviour we are seeing the way in which they concentrate on a piece of work. We are – through making concrete observations – creating a psychic energy profile. We might represent this in terms of our record keeping and understanding, for instance by representing a child's energy as it registers in our own bodies, or through artistic expressions.

Disorder in consciousness: psychic entropy

Csikszentmihalyi writes (1990, p.36), "One of the main forces that affects consciousness adversely is psychic disorder – that is, information that conflicts with existing intention, or distracts us from carrying them out. We give this condition many names depending on how we experience it: pain, fear, rage, anxiety, or jealously. All these varieties of disorder force attention to be diverted to undesirable objects, leaving us no longer free to use it according to our preferences. Psychic energy becomes unwieldy and ineffective". This is the phenomenon Csikszentmihalyi refers to as psychic entropy. He also notes that this disorder may result from external stresses, and that it may have a cumulative (or even permanent) effect on our psychic profile (1990, p.37).

Order in consciousness: flow

Csikszentmihalyi also identifies the opposite state to psychic entropy. He calls this state optimal experience, or flow. This is a high state of order in which psychic energy flows freely. In this state the flow of psychic energy is in harmony with the goals of what we are doing; this is pleasurable to us and is thus repeated, resulting in a cycle or flow of such optimal experience).

The autotelic experience

Csikszentmihalyi (1990) describes an experience which he calls autotelic. This word comes from the Greek roots: autos (meaning 'self') and telos (meaning 'goal'). This is an experience in which an activity is its own goal, i.e. in which motivation is the reward which the experience itself provides.

This is in harmony with the characteristics of what Montessori calls normalization, for instance the joy which comes from acting in accordance with nature and spontaneous repetition (Standing, 1984, p.178). In short it appears that the autotelic level of experience is far more important than the nature of the activity itself.

Do you recall autotelic experiences in your own life? What were these experiences like? What circumstances did these occur under?

What implications could an understanding of optimal experience have for teaching practice? How could you create learning occasions that enhance the likelihood of flow experiences?

5

Integrative theory

5.1. Scholarship reconsidered

- Four types of scholarship (Boyer)
- Interdisciplinarity
- Transdisciplinarity
- Scholarship of discovery
- Scholarship of application
- Scholarship of teaching
- Scholarship of integration

Ernest Boyer expanded upon the, in his view, limited conventional definition of scholarship in his essay entitled, *Scholarship Reconsidered: Priorities of the Professoriate* (1990). We feel that these distinctions are invaluable in the context of transformative learning, and would particularly like to draw attention to the transformative role of the scholarship of integration in this regard. Boyer's categories are expanded upon in the following table:

Type of Scholarship	Description and Purpose	Measures of Success
Scholarship of Discovery	Encompasses scholarly activities that extend human knowledge through the discovery and collection of new information.	• Publishing research in peer-reviewed forums. • Producing and/or performing creative work within an established academic field. • Putting infrastructure in place for future studies.
Scholarship of Application	Encompasses scholarly activities that relate academic knowledge to social concerns; focussed on activism and problem-solving.	• Acting as an external consultant to government and civil society organizations. • Fostering leadership by contributing to the professional growth of prospective leaders. • Stepping into leadership roles in professional organizations.
Scholarship of Teaching	Encompasses scholarly activities which relate to all aspects of teaching and learning praxis.	• Advancing learning theory through action research and educational design research in educational settings. • Developing and testing original instructional materials. • Supervising research
Scholarship of Integration	Encompasses transdisciplinary scholarly activities that integrate, interpret, and connect previous discoveries in ways which reveal new layers of meaning.	• Creating comprehensive macro-historical or literature reviews. • Creating transdisciplinary textbooks which draw learners towards critical self-reflection. • Transdisciplinary collaborations with other scholar-practitioners.

Table 11: Four types of scholarship

Consider what you have been taught about the nature of scholarship and research. How does this sort of understanding relate to the categories of scholarship identified by Boyer?

How can you bring the scholarship of integration into your work? How do you think that some of the approaches discussed in this volume may support you?

5.2. Transdisciplinarity

- Transdisciplinary
- Objects
- Subjects
- Zone of the hidden third
- Logos
- Ethos
- Pathos
- Zone of the excluded middle
- Complexity

Introduction*

The Romanian physicist, Basarab Nicolescu, devised a new approach to transdisciplinarity (Nicolescu, 2008; McGregor & Volckmann, 2012). Whereas previous attempts at creating interdisciplinary relationships have operated from within the reductionist bounds of Newtonian physics, Nicolescu's approach distinguishes itself by drawing on quantum philosophy, chaos theory, and complex systems theory (Nicolescu, 2008; 2011). This approach is hinged on three axioms or pillars, namely:

Axiom One	Ontology	Multiple levels of reality exist mediated by the hidden third
Axiom Two	Logic	The logic of the included middle
Axiom Three	Epistemology	Knowledge, complexity, and emergence

Table 12: Elements of transdisciplinarity according to Nicolescu

We will now explore each of these axioms in more depth.

* For more information on transdisciplinarity see the chapter written by MacGregor & Volckmann in Volume Two of the current book series.

Ontology

Nicolescu (2006) argues for multiple ontological zones, namely:

- The levels of reality for transdisciplinary objects (i.e. the external world), representing the flow of information cutting across levels of realities. This zone includes the following levels:
  - The environment (natural and artificial)
    - Macrophysical (Newtonian)
    - Microphysical (quantum)
    - Cyber-space-time
  - Economic
  - Planetary / Cosmic
- The levels of reality for transdisciplinary subjects (i.e. the internal world), representing the flow of consciousness cutting across levels of perceptions. This zone includes the following levels:
  - Individual
  - Social / Historical
  - Political
  - Philosophical
- The zone of the "Hidden Third"; this is the zone of non-resistance which mediates the interaction between transdisciplinary subjects and transdisciplinary objects. This zone includes the following levels:
  - Religions
  - Spiritualities
  - Culture / Art

Logic

Nicolescu (2008) argues that each of the ontological zones is governed by a separate form of logic.

- Transdisciplinary objects are governed by logos or reasoning.
- Transdisciplinary subjects are governed by ethos or character.
- The zone of non-resistance is governed by pathos or emotions.

The power of transdisciplinarity lies in its capacities to transcend divisions whilst still apprehending and maintaining their value (Nicolescu, 2000a). Mod-

ern science uses a reductionist and dualistic logic of exclusion to divide up reality. It assumes that spaces between objects and/or subjects are flat and static (McGregor, 2007; 2011d). Transdisciplinarity draws instead on insights from quantum theory and proposes a logic of inclusion (The Logic of the Included Middle). It views the space between objects and/or subjects as one of living and dynamic flux. Academics are therefore able to synergistically mediate aspects of reality by stepping into this fertile middle space resulting in an intellectual fusion which leads to embodied knowledge (McGregor, 2004).

Epistemology

Nicolescu (2002, 2008) argues that transdisciplinary knowledge is based on a process of intellectual cross-fertilization and is characterized by embodiment, emergence, and complexity. This is predicated by an understanding that knowledge is open, fluctuating, and alive in character. Present epistemological models are incapable of taking on the challenges that a complexity paradigm indicates; new approaches are therefore called for, such as those proposed by Morin (1999, 2008), Max-Neef (2005), and Cilliers & Nicolescu (2012).

Can you give an example of your experience of the limitations of disciplinary approaches to research? How do you imagine the transdisciplinary approach described by Nicolescu might serve to remedy some of these reductionist limitations?

What steps could you put in place in order to bring a more transdisciplinary approach into your work? What implications could this have for your scholarship? Your teaching? Your approach to learning? Your worldview in general?

6

Integral studies

6.1. Integral yoga

- The evolution of consciousness
- The inconscient
- The subconscient
- The conscient
- The superconscient
- The three gunas

- Physical
- Vital
- Mental
- Psychic
- Tamas
- Rajas
- Sattvas

Integral yoga is one name given to a system of praxis identified and developed by the Indian poet and philosopher Aurobindo Ghose (more commonly referred to as Sri Aurobindo), along with a number of collaborators, most notably Mirra Alfassa (more commonly known as The Mother). Sri Aurobindo was a polymath responsible for a prolific and eclectic body of intellectual work touching on a wide range of topics ranging from philosophy and psychology, to politics and literary criticism. His work is set apart by the ways in which he integrates developments in Western thought with a deep understanding and embodied practice of yogic thought. From this starting point he was able to radically and systematically re-interpret the almost forgotten depths of Vedic thought, using this as the basis for the construction of an integral model of the evolution of consciousness. Sri Aurobindo's thought has had a pervasive influence on the field of integral studies; notably upon the work of Jean Gebser (Hellbusch, 1998; Benerji, 2013), Pitirim Sorokin (2002), Ken Wilber (2000a; Dalal, 2001), Michael Murphy (1993) the co-founder of the Esalen Institute, and Haridas Chaudhari (1977), the founder of the California Institute of Integral Studies in San Francisco. Those looking for a general introduction to Sri Aurobindo's life and work are directed to Satprem's (2008), Sri Aurobindo or the Adventure of Consciousness.

Psychological approach

Sri Aurobindo (1988) proposed that human consciousness has evolved through an unfolding process from inconscient matter, to subconscient life, to conscient mind, and ultimately to superconscient spirit. This internal passage naturally mirrors our evolutionary journey when viewed from an exterior perspective. The earliest forms of life – such as the pre-vegetative prokaryotes – emerged from non-living matter (i.e. non-cellular atomic structures); non-living matter had no consciousness of its own existence (it was entirely inconscient), but as its complexity increased to the level of life – even in its simplest form – a certain awareness emerged as well. From this point onward, life flourished and grew to be more complex both internally and externally; internally this entailed moving from being merely prehensile to irritable, impulsive, and even emotional (in a limited sense), and though this is not attributive of true conscious awareness it exhibits a certain movement of consciousness that is not present in matter (these pre-conscious forms of life may therefore be understood as being subconscient).

With the evolution of human beings, however, something new appears to have emerged: the emergence of true conscious awareness, the birth of nous, of mind. Humans possess words and ideas (they inhabit a noosphere), but they are also a being made up out of living cells (they inhabit a biosphere), and each of these cells is made up of particles of matter and – mainly the space between them (thus humans inhabit a physiosphere as well). Thus, as the great cosmic narrative of evolution unfolds, each emerging level transcends and includes the one which preceded it. The existence of life is dependent upon matter and transcends it. Through this entire evolutionary process consciousness continues to rise like a flame as if seeking to be reunited with its own origin, to borrow Bergson's turn of phrase we might understand it as a sort of universal and essential essence, not an élan vital but an élan conscient. But where might consciousness ascend to once it has reached the level of mind? And what lies beyond mind? This is the territory which lies before us in the evolution of consciousness.

For the purposes of this introduction we will focus on briefly introducing Aurobindo's yogic approach from a psychological perspective. Humans as conscient beings have included and transcended the lower (subconscient and inconscient) levels of development. The task that now lies before us is to transcend and include the limitations of his present consciousness so that we may evolve beyond it. This forms the basis of Sri Aurobindo's developmental psychology. A structural model of this path outlined in the supramental yoga is illustrated in the figure below:

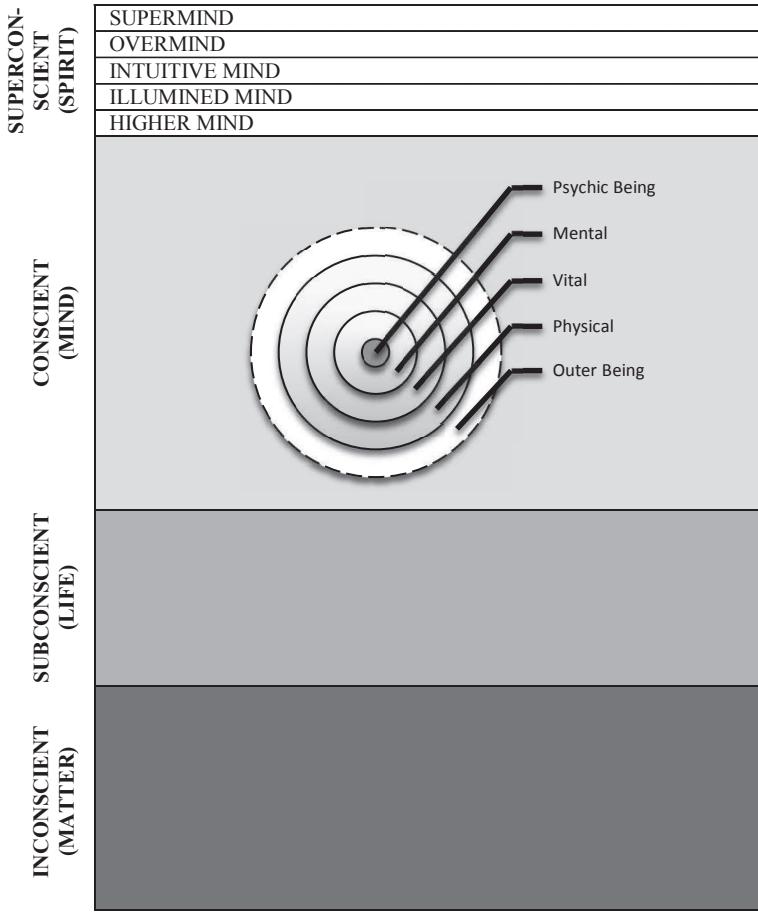


Figure 2: The inconscient, subconscient, conscient, and superconscient levels of the integral personality (based upon Dalal 1995, pp.352ff).

As this figure illustrates, the conscient personality consists of an outer being (which relates to the objects of reality through an environmental consciousness, represented by the dotted line in the illustration), an inner being, and a psychic being. This is a concentric system (not unlike the pancha kosha proposed in the Taittareya Upanishad); it is necessary to transcend and include all of these levels, and once the psychic being (the essential, true, soul self) has been realized the

descent of the supramental consciousness may be activated. This higher tier of consciousness is, likewise, multi-layered; here one ascends a ladder towards the ultimate evolutionary goal of the supermind. Each of these successive levels has a particular developmental character; these are described in detail in Sri Aurobindo's philosophical masterpiece, The Life Divine, and we will not delve into a further description of them in this book.

For our purposes we will now flesh out the nature of the conscient level of development and the evolutionary task of human beings in the new creation of the self; we will then relate this to the social evolution of society. The outer being consists of three parts: the physical, vital, and mental. These elements may be related to the three gunas (operating principles) – tamas, rajas, and sattvas – as identified in the Bhagawad Gita (Aurobindo, 2006; Pandey, 2011).

The tamasic station of consciousness is characterized by complete darkness and an utter resistance to growth and change. This can be understood as a sort of pre-egoic state in which man is subject to his most base animal tendencies and is ruled by adherence to a herd mentality. In this state there is a sort of meaningless inertia which gives the impression that one is not in control. During this stage of development there is such a low level of self-awareness that the ability to genuinely feel suffering is somewhat dulled (although a person in this stage of development is often a cause of others suffering). The lack of any significant urge to develop and grow gives rise to general sense of lethargy and "stuck-ness".

The second station of consciousness, the rajasic, is one of kinesis, restlessness, and dynamic movement. It is a mid-point where the ego has free reign and as such may often prove to be profoundly uncomfortable. This stage consists of two distinct phases. The first, the rajo-tamasic, is one of complete hedonism wherein one gives oneself over to self-indulgence and seeks primarily to satisfy the drives of the libido. This leads not only to antisocial behaviours but also to a range of self-destructive tendencies (such as addictive behaviours). Many types of regressive, dissociative, and psychotic disorders can be directly related to this stage of consciousness. In the second, the rajo-sattvic, one seeks to establish some sort of ideal form of self-governance in order to keep one's unruly and self-destructive nature in check. Often this involves a process of being at war with oneself. The final guna is called the sattvic. Someone who has attained this station of consciousness is motivated by an ideal of harmony. They are able to transcend their ego and conduct their energy in a balanced way that does not have a destructive effect on themselves or others.

Through a process of sadhana, or constant conscious personal evolution, the inner being can be transcended and the inner physical (annamaya purusha), vital (pranamaya purusha), and mental (manomaya purusha) consciousness come into

play. This inner consciousness transcends the limitations of the gunas (a comparison of the inner and outer beings may be found in the table below). Concealed beyond the inner being lies our central unique nature. This is the psychic being and is our unique individual portion of the divine consciousness (chaitya purusha or antaratman). It is from this point of identification with our own unique consciousness that one is able to launch into the next evolutionary step. This model may be understood as a sort of three dimensional model in which the inner, outer, and psychic beings act as concentric levels on the horizontal plane, and the levels of physical, vital, and mental as successive levels on a vertical plane (this distinction will prove invaluable as we move our discussion onto the topic of social evolution).

	OUTER BEING			INNER BEING
	PHYSICAL (TAMAS)	VITAL (RAJAS)	MENTAL (SATVAS)	
LIFE	Aimlessness; life governed by habit and routine	Pursuit of possessions, pleasure, and power; life governed by desire	Pursuit of knowledge; life governed by mental and moral principles	Search for the purpose and meaning of life; pursuit of inner growth; life governed by what is felt to be the truth of the inner being
SELF AND OTHERS	Identification with the body	Identification with impulses and emotions	Identification with the mind	Seeing an entire person who transcends and includes physical, vital, and mental elements
WORK	Chore; drudgery	Means for earning wealth, exerting power, and exhibiting abilities	Performance of duty; rendering a service; means of self-expression and self-improvement	A means of inner growth, self-offering, and self-consecration
DIFFICULTIES	Indifference; passive resignation; avoidance or escapism	Struggle, anxiety, and tension; irritability and aggression	Dispassionate problem-solving	Viewing difficulties with equanimity as an opportunity for inner development

Table 13: The outer and inner being in the work of Sri Aurobindo

Sri Aurobindo (1988) described moving from the outer being to the inner being, and ultimately to the psychic being, as a process of triple transformation. Firstly, there is the process of psychicization; this stage takes the form of transformation of the sadhak (practitioner) into a baktha whose heart motive is devotion and service to a higher ideal (the Divine consciousness) and who is constantly aware of the presence of the Divine (Aurobindo, 1972). Secondly, a process of spiritualization which entails the descent of a spiritual consciousness in the superconscient realm, this is a profoundly transformative experience which Sri Aurobindo (1972) describes as "the descent of the peace, power, light, etc. of the Higher Consciousness through the head and heart into the whole being, occupying the very cells of the body". And, thirdly the descent of the supramental consciousness which is complete identification with the creative Divine (Brahma) manifesting as being, truth, and bliss (satcitananda); this third transformation essentially hails the arrival of a new species on earth – the Life Divine – and the transformation is completed in all domains. None of these transformations is in and of themselves sufficient (i.e. they are entirely interdependent) and thus each successive step transcends and includes that which precedes it. As suggested above, this transformation has three important prerequisites: firstly evolution beyond the mental plane (the conscient), secondly the willing opening of the psychic being, and thirdly "the descent of the higher consciousness with its peace, light, force, knowledge, Ananda etc. into all the planes of the being down to the most physical" (Aurobindo, 1972, p.1).

Complete the following self-reflection exercise based on Huppes (2001, pp.22-24). This self-observation exercise helps us to come into contact more meaningfully with the different aspects of ourselves; in this case, the mental, vital, and physical.

- *Turn your attention inward.*
- *What is going on inside you? What feelings and thoughts are you aware of?*
- *Try to simply observe. Do not allow yourself to be carried away by ideas. Or distracted by things other than what is alive in this moment.*
- *Is it easy to observe yourself in this way? If not, what makes it difficult?*
- *If you lose focus, what can you do to restore your presence and continue observing?*

Now turn your awareness to your head. Focus your energy on the centre of your forehead.

- *Hone in on what you are thinking right now.*
- *Are there certain thoughts which are recurring, or carry a particular charge?*
- *Are you aware of positive or negative thoughts?*
- *Are you thinking primarily of yourself or of others?*
- *Are your thoughts about objects, ideas, or events?*
- *Are they about the past, present, or future?*
- *Do you find yourself gravitating towards a dialogue with your thoughts?*
- *Do some thoughts trigger specific feelings?*

Now shift your awareness to your vital consciousness. Focus your energy on the centre of your chest.

- *Become aware of what you are feeling.*
- *Are most of your feelings in relation to yourself or others?*
- *Can you name the feelings which are most prevalent for you right now?*
- *Do some of these feelings stimulate particular thoughts?*
- *Do you feel drawn to dialogue with your feelings?*
- *Is it sometimes challenging to disentangle your thoughts and feelings?*
- *Do some of your feelings trigger certain memories?*

Now shift your awareness to your body.

- *What is going on in your body right now? What sensations are you aware of?*
- *Often the way our body feels is connected to our vital or mental consciousness. What effects are your thoughts and/or feelings having on the way that your body is feeling right now?*
- *Observe your muscles:*
    - *Is your neck relaxed?*
    - *Are your shoulders relaxed?*
    - *Are your arms and hands relaxed?*
    - *Is your jaw relaxed? Your face? Your scalp?*
    - *Is your abdomen and lower back relaxed?*
    - *Are your hips and legs relaxed?*
- *Do certain words, images, thoughts or feelings make your body feel tense? Where?*
- *Do certain words, images, thoughts or feelings effect a change in your heart or breathing rates?*

Use the space on the page overleaf to reflect on this exercise in whatever way feels most natural to you.

6.2. Integral theory

- AQAL
- Integral theory
- Quadrants
- Levels
- Lines
- States
- Types
- Pre/trans fallacy
- Quadrivia
- Validity claims

Quadrants

Let us begin with an exercise. Bring your awareness onto what is going on inside you right now. Try to track the fleeting thoughts and internal images as they pass through your awareness. What are you feeling? What are you thinking? Sit with this for a few moments.

Now become aware of the experience provided by your sense apparatus. Without evaluation or analysis, to the best of your ability, experience the sounds around you, the images and colours, the temperature, and sensation of fabric on your skin. Can you smell anything? What sensations can you identify within your own body? Any tension? Can you hear your heart beating? Sit with this empirical data for a while.

Now bring your attention to the way in which all of the parts of your body work together in a complex system. Think about the way in which all of the objects around you form parts of interconnected systems. Consider this book, all of the complex processes and systems that were encountered (technological-industrial, legal, academic, corporate, etc.), that were involved in getting the text to you. If you are using this book as part of a university course, or within any organization, think about the spectacular social complexity of that organization; imagine all of the systems that it regularly engages with, for example governmental, legal, economic, and families. Reflect on the way in which reality is connected through complex systems.

Finally, consider how amazing it is that we have a shared language which makes it possible for you to read and understand this writing even though we may never meet. It is likely that we have more than a shared set of symbols. We may have common ideas and interests. At the same time we may come from different cultures

with slightly different worldviews. How does this affect the ways that we relate to one another in this medium? If you are studying this material with others, think about what draws you together. What common ideas and values do you share? What really matters to you? If you are a teacher, or work in an organizational setting, think about the culture which is created in your organization/classroom. How is this possible? Reflect on your culture for a few minutes, how it connects and divides, and which values define it.

You have just completed a micro-tour of the ways in which Wilber's quadrant perspectives are arising right now in your consciousness. Would you like to record any observations or realizations?

Wilber identifies four essential tetra-arising dimensions of all holons, or all parts of reality (Wilber 2000a); these dimensions form an important part of his so called AQAL model and have come to be known as the 'four quadrants'. These four dimensions are constantly tetra-arising in the awareness of every moment, but also supply us with four distinct lenses (or quadrivia) through which we can perceive any holon.*

* 'Holon' is the term Wilber uses to explain the basic building blocks of reality: "Reality is not composed of things or processes; it is not composed of atoms or quarks; it is not composed of wholes; nor does it have any parts. Rather it is composed of whole/parts, or holons (Wilber, 1996, p. 41)". In this way a molecule is a holon: it is a whole thing in and of itself, but also forms part of a more complex holon – a cell for example. Likewise it in turn has transcended and included lower holons: atoms. This understanding of reality naturally has a profound philosophical effect ontologically, epistemologically, and even methodologically. The quadrants represent one aspect of this understanding. A comprehensive discussion of holonic theory can be found in Wilber's "Twenty Tenets" (Wilber 1995, p.43ff).

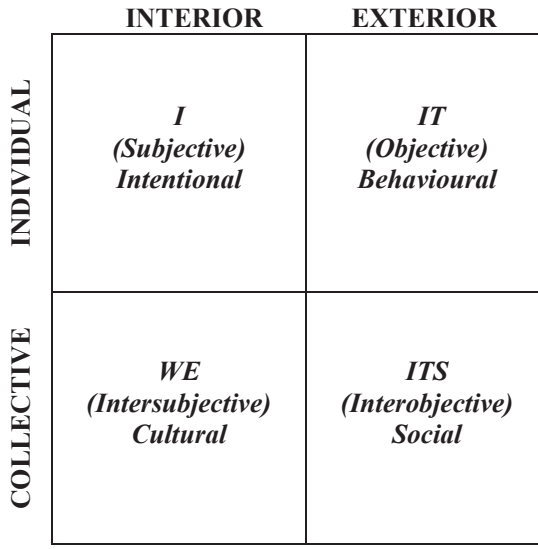


Figure 3: Wilber's quadrants

The four quadrants arise from two sets of dichotomous distinctions: the horizontal distinction between the interior on the left side and the exterior on the right side, and the vertical distinction between the individual on the upper side and the collective on the lower side. These two sets of distinctions render four separate quadrants as illustrated in the above figure.

- *The Intentional (Individual Interior).* The upper left (UL) quadrant encompasses the interior dimension of the individual; Wilber (1995) has referred to this perspective as the 'intentional'. It includes all of a holon's own internal awareness and consciousness, the psyche to the extent that this concept is viewed through an interior lens (as opposed to an exterior one such as neurobiology). It encompasses both the first person experience of individual interiority (introspection, phenomenological experience), as well as third person perception of it (structuralist understandings of interior development) (Wilber, 2007). As the sciences have flourished up to and during the period of modernism, this perspective has typically been neglected or ignored, mainly because the nature of interiority renders it difficult to measure using empirical methods. A limited application of intentional knowledge in the schooling paradigm is to be found in

developmentalist curricula (Schiro, 2007), but these are largely limited to early childhood approaches. This of course makes the interior reality of things no less real, and the study of the intentional domain has flourished as a core of the perennial philosophy, which has fuelled the world's wisdom traditions for millennia. From an educational viewpoint this perspective may be understood as being important inasmuch as learning is an internal process situated within a landscape of internal development. This is the realm of the subjective and aesthetic and as such its truth claims cannot be validly subjected to an objective validity claim (assuming such is possible at all). Instead the validity claim against which intentional expressions should be measured is one of 'truthfulness', i.e. "that the manifest intention of the speaker is meant as it is expressed" (Cooper, 2011; Habermas, 1984). A gross reductionism in this quadrant, where an UL validity claim is invoked in an attempt to invalidate knowledge arising in other quadrants, results in extreme idealism: an irrealism dominated by a focus on ideas an interior awareness as the basis of reality (Wilber & Fuhs, 2009).

- *The Behavioural (Individual Exterior).* The upper right (UR) quadrant encompasses the exterior dimensions of the individual; Wilber (1995) has referred to this perspective as the 'behavioural'. This perspective views the empirical, objective structure of things and physical processes or behaviours that take place in the world of objects. It encompasses both the first person experience of individual exteriority (Matanura & Varela, 1980), as well as the third person perception of it (empiricism) (Wilber 2007). This perspective has dominated modern science and led to a pervasive tendency towards empirical reductionism. As a result education has also become obsessed with producing empirically verifiable results and focussing on exterior knowledge. This is indicative of the worldview dominated by the right hand quadrants which Wilber (2000a) has referred to as 'flatland'. In the last few decades this prominent worldview has been increasingly challenged by the rise of post-modernist world views which place great importance upon the socio-cultural construction of meaning. This is the realm of objective truth and an objective validity claim is thus applied; that of 'truth', i.e. "that the statement made is true (or that the existential presuppositions of the propositional content mentioned are in fact satisfied)" (Cooper, 2011; Habermas, 1984). A gross reductionism in this quadrant results in extreme atomism (or scientism): a focus on material parts at the cost of systemic relations and interiors (Wilber & Fuhs, 2009).

- *The Social (Collective Exterior).* The lower right (LR) quadrant encompasses the exterior dimension of the collective; Wilber (2000a) has referred to this perspective as the 'social'. This perspective views the ways in which objects are connected in systems; it represents the inter-objective domain. It encompasses both the first person experience of inter-objective reality (social autopoiesis), as well as third person perspectives that address the complex interactions between exterior parts (systems science) (Wilber, 2007). As social-efficiency based curriculums have come to prominence in recent years (see Schiro, 2007) an increasing focus has been placed upon the role of education within social and economic systems. Increasingly learners are being educated not only to acquire knowledge, but to find their place within a complex socio-economic milieu. The inter-objective validity claim extends beyond mere objective truth; instead it consists of functional fit. Truth claims in the social quadrant are validated against how functionally and coherently they fit within a system (Wilber, 2000a). A gross reductionism in this quadrant results in extreme holism: a focus on systemic wholes to the exception of their constituent parts (Wilber & Fuhs, 2009; Wilber, 2000a).
- *The Cultural (Collective Interior).* The lower left (LL) quadrant encompasses the interior dimension of the collective field; Wilber (1995) has referred to this perspective as the 'cultural'. This quadrant hones in on the WE space, the interior of our collective (cultural) realities; it represents the inter-subjective domain. It encompasses both the first person experience of cultural reality (hermeneutics), as well as a third person perception of it (for example, ethnomethodologies) (Wilber, 2007). With the advent of postmodernism, increasing emphasis has been placed upon the importance of education as a discourse used to create and enforce social constructs which empower some and disempower others. Practical applications of this perspective may be found in social-reconstructionist curricula (Schiro, 2007), such as the critical pedagogy of Paulo Freire (2000). Statements in the lower left quadrants are measured against an inter-subjective validity claim: that of normative goodness (or justness), in other words it should comply with the normative understanding of goodness constructed within a specific context (Cooper, 2011; Habermas, 1984). A gross reductionism in this quadrant results in extreme relativism (Wilber & Fuhs, 2009; see also Wilber's discussion of boomeritis in 2000b, pp.26ff, as well as endnote 2, p.145).

	INTERIOR	EXTERIOR
INDIVIDUAL	***IDEALISM (Reality is a product of perception / mind, thus non-material)***	***ATOMISM (Reality is empirical / material data apprehended by the senses)***
COLLECTIVE	***RELATIVISM (Reality is socially constructed and thus relative / context dependent)***	***HOLISM (Reality is a whole system)***

Figure 4: Reductionisms in each of the quadrants

	INTERIOR	EXTERIOR
INDIVIDUAL	***TRUTHFULNESS (Validity dependent upon intention)***	***TRUTH (Validity dependent upon evidentiary proof)***
COLLECTIVE	***JUSTNESS (Validity dependent upon socially constructed mores)***	***FUNCTIONAL FIT (Validity dependent upon fit within a system)***

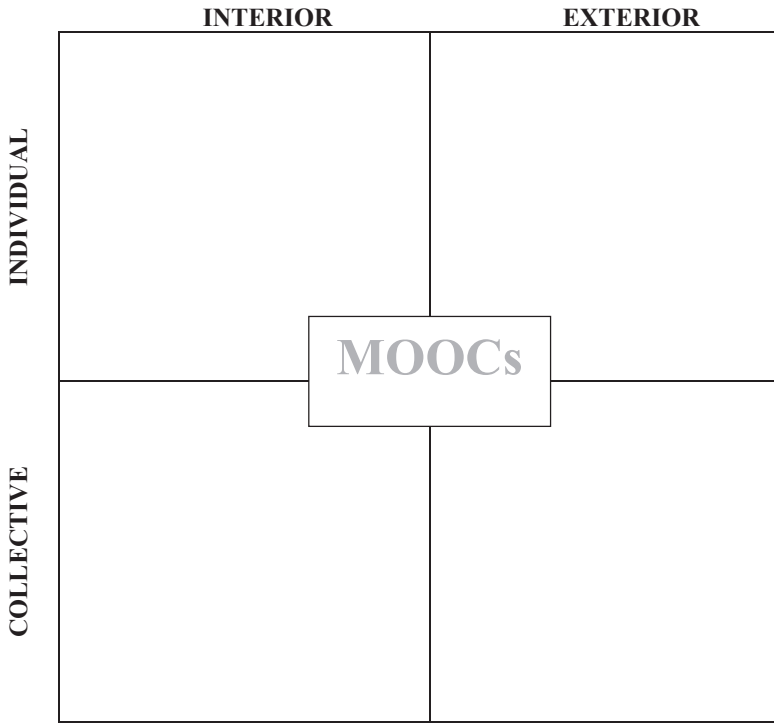
Figure 5: Validity claims in each of the quadrants

Create your own quadrivial analysis.

Below is an empty quadrivial template dealing with the topic of MOOCs (Massively Open Online Courses). If you are unfamiliar with this phenomenon a little internet research may be in order; a good place to start is www.hybridpedagogy.com. While

you are discovering the world of MOOCs bear in mind the ways in which the topic is engaged from each of the four quadrant perspectives discussed above. Once you have done some background reading conduct a simple quadrivial analysis by putting a few points from each perspective in the appropriate place on the diagram template.

On the following page you will find this empty quadrivial analysis template along with some additional note space which you can use to make an additional quadrivial analysis on an alternative topic of your choice.



Levels

Within each quadrant there are multiple levels of development. These emerge holarchically in waves throughout the quadrants in such a way that development in one quadrant may correspond with development in other quadrants. In the left hand quadrants development might generally be understood as an increase in depth whereas in the right hand path it is generally understood in terms of increasing complexity. This notion is graphically represented in the following diagram originally introduced by Wilber in Sex, Ecology, Spirituality (2000a).

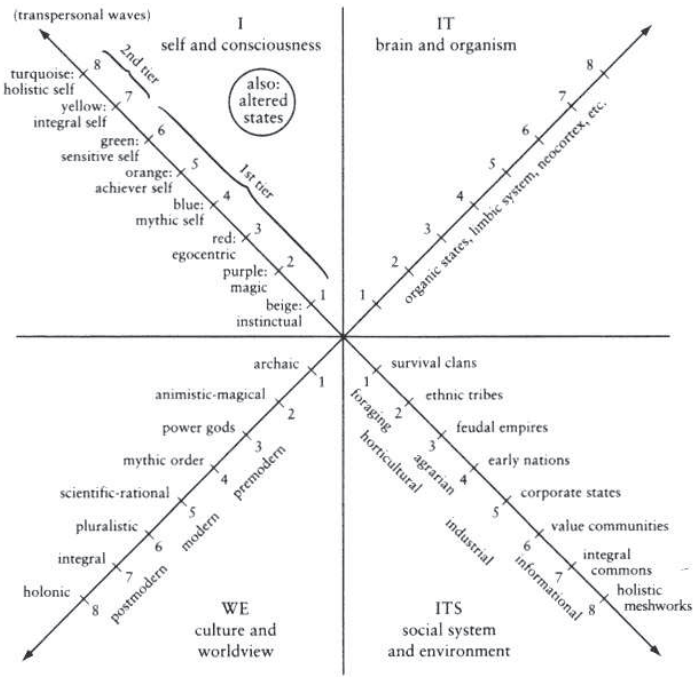


Figure 6: Levels of development across the quadrants (Wilber, 2000a)

Zeroing in on the left-hand quadrants (as Wilber is often wont to do), Hampson (see Volume One of the present book series) summarizes Wilber's position as follows:

> Wilber foregrounds the notion of developmental levels (structures, stages, waves – of altitude) with respect to both individual development and social evolution. Wilber foregrounds the identification of such levels with Spiral Dynamics (Beck & Cowan, 1996) which addresses such levels in relation to value memes ("vMemes"), each of which is identified by a colour. Those pertinent to the study comprise according to Wilber (2000a) (in ascending order):
>
> "First tier" levels
>
> - *Red – (part of) tribal – includes address of egocentricm, archetypal beings, feudalism, and "be here now" new age narcissism;*
> - *Blue – traditional – (re-identified by Wilber as Amber) includes address of fundamentalism, literalism, right-and-wrong, the law, and the mythic;*
> - *Orange – modern – includes address of The Enlightenment, science, hypothetico-deduction, the economy, corporations, liberal self-interest;*
> - *Green – postmodern – includes address of postmodernism, anti-hierarchy, deep ecology, diversity, caring;*
>
> "Second tier" levels
>
> - *Yellow (re-identified as Teal under Wilber): spontaneity, holarchy;*
> - *Turquoise – integral – universal holistic systems.*
>
> For cultural evolution, Wilber mainly draws upon Gebser's (1949/1985) structures of consciousness – archaic, magic, mythic, mental, integral, respectively. Wilber foregrounds the distinction between first and second tier. He also emphasises the significance of differentiating between pre-rational/pre-conventional (pre-Blue/Orange) and trans-rational/post-conventional levels: not to do so is, according to Wilber, to suffer from "the pre/trans fallacy" (Wilber, 1980). "Vision-logic" pertains to post-conventional levels.

The description Hampson provides for the upper-left hand quadrants are often summarized by the following image (Wilber, 2006). This diagram illustrates the levels of consciousness by colour and indicates the ways in which they correspond with other thinkers each of whom focus on particular lines of development (as discussed in the next theoretical section).

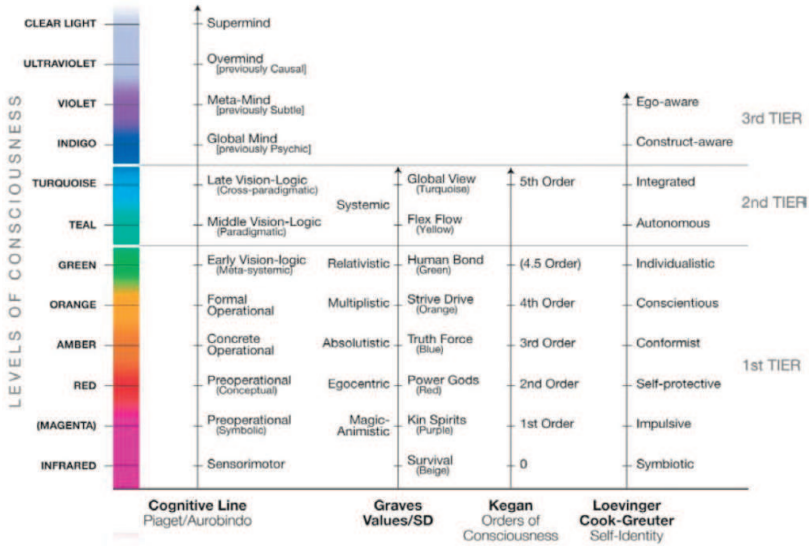


Figure 7: Levels across a number of lines in the UL quadrant (Wilber, 2006)

We deal with the topic of development at some length in this volume. From the introduction provided here, imagine how an appreciation of different levels as depicted by Wilber (perhaps specifically with reference to the UL quadrant as illustrated above) would impact your approach to teaching and learning.

Lines

Wilber (2000b) argues that development takes place in multiple lines across each quadrant. Each of these represent the various developmental capacities embodied within each perspective. For instance, within the UL quadrant we can identify development emerging across spiritual, moral, psychosexual, interpersonal, emotional, and cognitive lines among others (as illustrated in the diagram below).

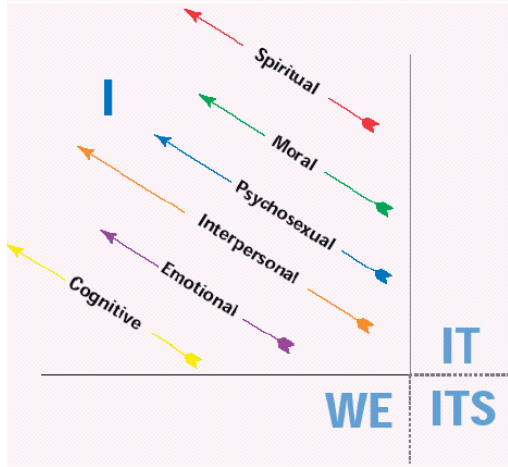


Figure 8: Multiple lines of development emerging in the UL quadrant

If we combine our understanding of levels and lines (once again specifically with reference to the UL quadrant) we are able to generate a psychograph with each of the capacities on one axis and the levels of development on the other. A simpler representation is found in the figure below.

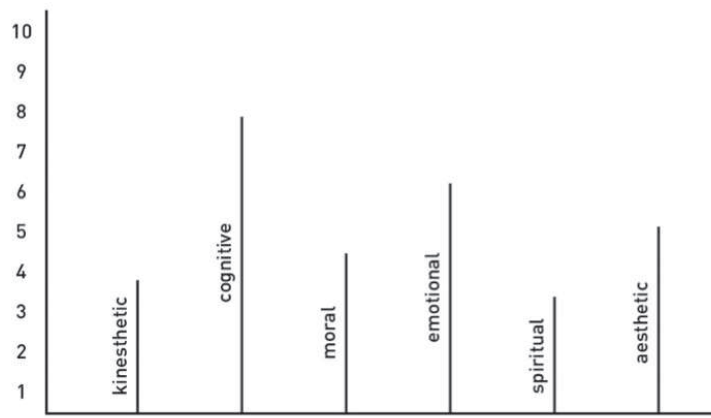


Figure 9: A simple psychograph

Use the space provided to create a psychograph using the lines identified in the illustration above. In order to complete this in a scientific way would require thorough assessment, but for the purposes of this exercise it is sufficient to tap into your intuitive understanding of yourself in order to create an approximation.

States

All quadrants in addition to including multiple developmental lines also have a range of different states. Esbjörn-Hargens (2009) defines states as "temporary occurrences of aspects of reality (lasting anywhere from a few seconds to days, and in some cases even months or years)". These states are generally mutually exclusive (one cannot be both hyped-up and relaxed at the same time), and they can be externally (exogenously) or internally (endogenously) caused. Some examples of states across all four quadrants may be found in the following illustration (based on a diagram in Esbjörn-Hargens, 2009).

	INTERIOR	EXTERIOR
INDIVIDUAL	*Phenomenal States* *Natural States* *Altered States*	*Brain States* *Hormonal States* *Behavioural States*
COLLECTIVE	*Group States* *Intersubjective States* *Religious States*	*Weather States* *Ecological States* *Economic States*

Figure 10: Examples of states in all four quadrants

Complete the following exercise based on the centring process devised by Wendy Palmer (1994).

Posture: *Align yourself vertically - relax and align your head, heart, and hips. Imagine that your head is being pulled towards the sky and your feet re being pulled into the earth with equal and opposite force.*

Breath: *Breathe in up the spine and out the top of your head. Breathe out down the front spiralling into the earth. Repeat this cycle five times. Become aware of a profound sense of relaxation and presence.*

Field: *Notice the subtle energetic field around you by realizing that there is heat rising from the surface of your skin. Imagine this field surrounding your entire body in a perfect sphere extending equally to the back and front, to the left side and the right side, and above and below.*

Quality: *Ask yourself, "What would it be like if there was a little bit more ease in my body right now"? Do not focus on your thoughts, but ask your body directly. Let your body respond intuitively.*

Has your state shifted? How does your body feel different to how it felt before you centred? How is your mental and vital-emotional state different?

Types

Types represent the diversity of styles which exist in different domains within quadrants. These are durable characteristics which are value neutral and continue to exist in a relatively stable way throughout development. Some examples of different typologies in each of the quadrants can be found in the diagram below (based on a diagram in Esbjörn-Hargens, 2009).

INDIVIDUAL	***Personality Types*** ***Gender Types***	***Body Types*** ***Blood Types***
COLLECTIVE	***Religious Systems*** ***Kinship Systems***	***Regime Types*** ***Biome Types***

Figure 11: Examples of types in each of the four quadrants

Complete the Enneagram Typology test, which you can find at (http://www.eclecticenergies.com/enneagram/test.php). The Enneagram was discovered and elaborated by Oscar Ichazo and Claudio Naranjo based in part on earlier teachings of George Ivanovich Gurdjieff. Later, the Enneagram was popularized by Don Richard Riso, Russ Hudson and others. It defines nine character types, but includes further complex dimensions to refine the overall analysis. One of the key ideas is that for each type, there are lower and higher developed manifestations. The Enneagram therefore is more than just a typology; it also shows a path to self-development.

Do you think that this is a reliable test? Why or why not? Do you agree with the test result? Why or why not? How is this insight into your personality type potentially useful to you?

7

Complexity studies

7.1. Complex systems theory

- Complex systems theory
- Complex adaptive systems
- Interaction
- Emergence
- Adaption
- Dissipative structures
- Mechanisms
- Self-organized criticality
- Far-from-equilibrium dissipation

Complexity is notoriously difficult to measure and define*, and no one definition is widely accepted; but when stripped down to its most basic elements one might safely say that complex systems theory concerns itself with the study of complexly interacting systems (Marion & Uhl-Bien, 2001). The application of complex systems theory (and related theories such as chaos theory, information theory and network theory) range across the natural sciences to the social sciences and informatics. This entails an inquiry into interacting units (specifically the interaction dynamics among multiple networked agents), which are dynamic and adaptive in character (Coveney, 2003); and seeks to establish how emergent events – creativity or learning, for example – arise from these interactions (Marion, 2008). Weaver (1948) identified a rise in complex problems in the 20th century and indicated that establishing new ways of addressing these problems would form the basis of a revelation in science.

Page (2009) identifies a number of core characteristics of complex systems. He argues that complex systems are unpredictable, robust, develop from the bottom up, and can act as a catalyst for large events. Mitchell (2009) adds to this list stating that a complex system is "...a system in which large networks of components with no central control and simple rules of operations, give rise to

* Professor Seth Lloyd (2001) of MIT has been developing a non-exhaustive list of *Measures of Complexity* which serves to nicely frame the difficulty in reaching a succinct definition.

complex collective behavior, sophisticated information processing, and adaptation via learning or evolution (p. 13)"*.

Complex systems theory has developed as an amalgamation of a wide range of different approaches condensing around the end of the Second World War. Nowadays the fields identified below might be considered as among the most influential (Goldstein, 2008):

Discipline	Contributions to 'complex systems theory'
Systems science	• Boundaries • Positive and negative feedback loops
Theoretical biology	• Framing organizations as organic, evolving, whole systems
Nonlinear dynamical systems theory	• Attractors • Bifurcation • Chaos
Graph theory (pure mathematics)	• Connectivity • Networks
Complex adaptive systems theory	• Evolving, adaptive systems of interacting agents
Theoretical physics (phase transition, Turing's morphogenetic model, synergetics, far-from-equilibrium thermodynamics)	• The concept of emergence • Novel order

Table 14: Contributions to complex systems theory

An important distinction to make at this point is between complicated and complex social worlds. Complicated systems are systems which exist out of a large number of inter-related parts which work together in intricate and convoluted ways. We can understand this type of system through analysing its separate parts. An example of a complicated system is the engine of a jumbo jet, or a

* These characteristics are also expanded upon by, for instance, Dooley (1996) and Grisogono (2006).

computer motherboard. A complex system on the other hand may also be complicated but its main characteristic is the dynamically changing interactions which lead to novel emergence. Page (2009) sums up this differentiation in terms of adaptability. Miller and Page expand upon this,

> Complexity is a deep property of a system, whereas complication is not. A complex system dies when an element is removed, but complicated ones continue to live on, albeit slightly compromised. Removing a seat from a car makes it less complicated; removing the timing belt makes it less complex (and useless). Complicated worlds are reducible, whereas complex ones are not (Miller & Page, 2007).

We therefore cannot understand a complex system merely by understanding its constituent parts, nor can we predict the way in which its parts will interact (either within or across systems). We also cannot predict how the system as a whole will emerge or evolve through any sort of linear analysis. Evolution within complex systems take place in novel, unpredictable, nonlinear, and irreversible ways which integrate their past and present; consider complex social events such as the Arab Spring in this regard. In complex systems individual elements often act to constrain one another over time. One example of a complex system is the human brain (Uhl-Bien & Marion, 2009; Cilliers, 1998; Snowden & Boone, 2007).

The table below presents a brief explanation of a number of core concepts in complex systems theory:

Concept	Explanation
Interaction	According to Marion (2008, p.5), complexity theory is the study of the "patterns of dynamic mechanisms that emerge from the adaptive interactions of many agents". Agents (such as people in an organization) within complex systems are changed through the process of interdependent interactions. As a result the structures, behaviours, and patterns that arise from these interactions cannot be understood (or often even recognized) simply by examining the linear combinations of initial actors. Over time these behaviours and outcomes create complex feedback loops with each other which effectively subvert and complexify linear conceptions of cause and effect.

Concept	Explanation
Dynamic process	Complexity is defined in terms of constant dynamic processes of change. Complex systems do not consist of static parts. Although there may be in some cases a robust global stability to complex systems, internally they are constantly changing and bringing about new things through evolutionary emergence.
Adaption	Adaption is the process through which complex systems are altered in response to systemic pressures. Adaption constantly takes place on an individual level in terms of the individual preferences of local actors and their idiosyncratic responses to local stimuli. These individual adaptions can interactions can interact with one another and eventually lead to aggregate adaption across entire complex systems.
Mechanisms	Mechanisms might be best understood as processes that result in given outcomes (Hedström & Swedberg, 1998, as cited in Marion, 2008). Complex systems theory seeks to identify and understand complex mechanisms and the patterns that arise from their interaction. A number of universal mechanisms have been identified as playing a role in driving complex dynamics. These include: • *Correlation.* The result of interacting agents sharing part of themselves (technically referred to as their "resonance"). • *Aggregation and bonding.* The clustering of multiple agents as a result of interdependent or shared resonance. Occurs as a result of correlation. • *Autocatalytic mechanisms.* Emergent structures that serve to accelerate or catalyse other mechanisms. For example, looting behaviour can be auto-catalysed by rioting behaviour. • *Nonlinear emergence.* The sudden and novel shift in dynamic states. For example, the Arab Spring or the transition from solid to liquid to gaseous states.

Concept	Explanation
Self-organized criticality (Bak & Tang, 1989; Kan & Bak, 1991)	Self-organized criticality refers to a process whereby apparently unimportant events can result in mass chaos which leads interactive systems to a critical state (Kan & Bak, 1991). These shifts are not a result of linear causality; instead they emerge in response to apparently random, dynamic movements within complex systems. They occur when complex systems are moving randomly and come within range of a complex attractor. As a result, criticality can be impervious to the influence of external agents. When complex systems contain multiple agents self-organized criticality manifests in terms of radically altered structures and behaviours; consider, for example, massive unexpected shifts in financial markets.
Dissipative structures (see Prigogine, 1997)	Dissipation generally refers to the release of energy that results from entropy and deterioration of order. Prigogine's (1997) work in organic chemistry revealed the nature of dissipative structures as the emergent order that potentially arises as a result of the dissipation of energy. Unlike criticality, dissipative structures can be influenced by external agents.
Emergence	Emergence can be described as "a sudden, unpredictable change event produced by the actions of mechanisms (Marion, 2008, p. 9)". Emergence is a naturally occurring phenomenon which takes place in the context of complex systems. It is a process of change and subsequent stabilization which does not require any sort of external energy to happen. Emergence usually occurs as a result of the dynamic actions of mechanisms in response to energetic pressures as opposed to the actions of individual agents; it can therefore be distinguished from changes which arise through more step-by-step trajectories. Emergence may lead to dissipative structures.

Concept	Explanation
Complex adaptive systems	Complex adaptive systems (CAS) serve as the basic unit of analysis in complexity science. They are neural-like networks; open, aggregated systems of interdependent agents which interact cooperatively as a result of a common purpose or goal (Cilliers, 1998; Holland, 1999; Langston, 1986; Marion, 1999; Uhl-Bien, Marion, & McKelvey, 2007). CAS's consist of heterogeneous agents which interact with one another in such a way as to generate novel behaviour across entire systems (Marion & Uhl-Bien, 2001).

Table 15: Core concepts in complex systems theory

Time to break out the art supplies! How would you graphically represent the notion of complexity? Use the space provided to create a graphical representation of how you experience the concept of complexity. Here are a few images to serve as possible inspiration, but how you represent the concept is up to you.

Figure 12: Natural fractal in a romanesco cauliflower

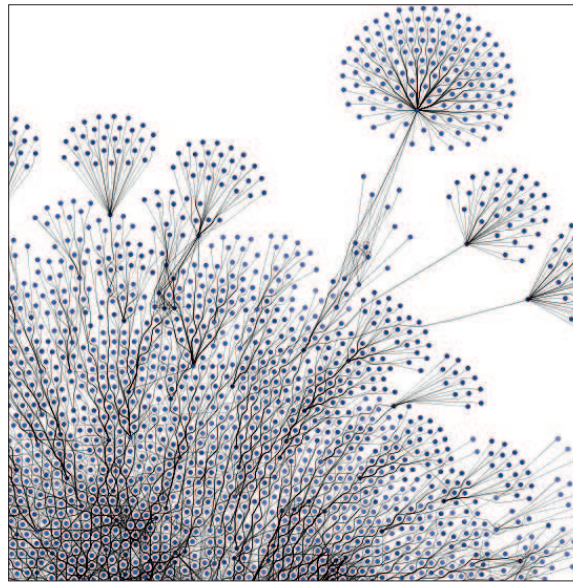


Figure 13: An artistic representation of complexity

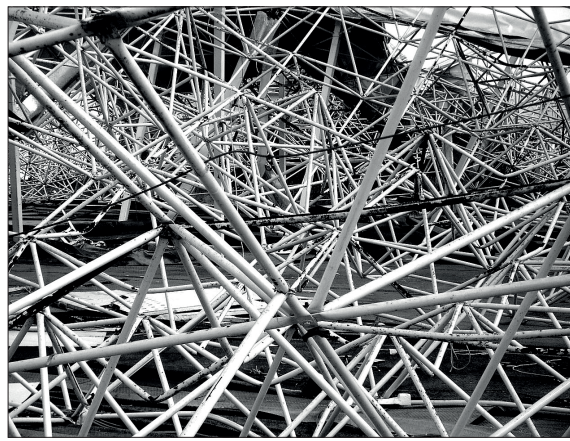
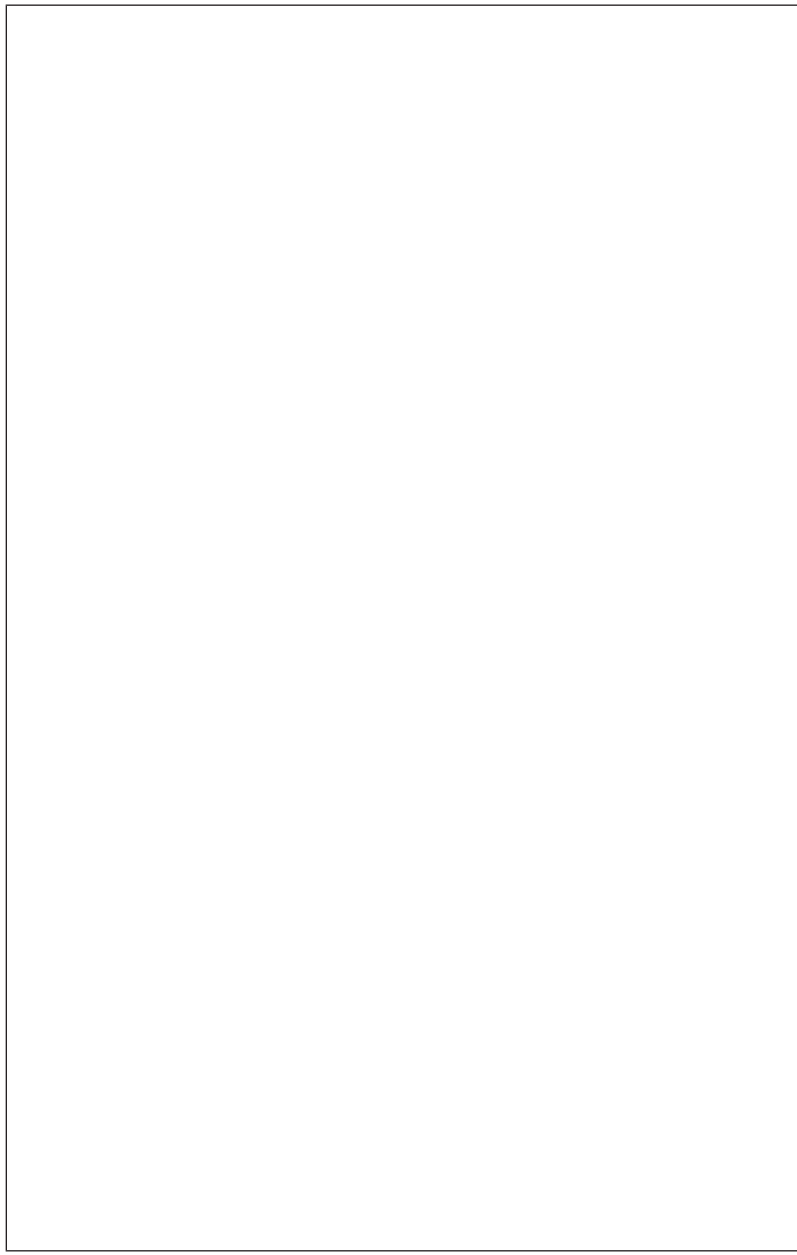


Figure 14: Complexity in construction

Figure 15: The Lorenz attractor

Figure 16: The human brain



Think of examples of each of the elements of complexity science listed below from your own educational or leadership context, and record them in the table below.

Complicated system	
Complex adaptive system	
Emergence	
Self-organized criticality	

Dissipative structure	
Autocatalytic mechanism	

What practical changes would take place in your approach to teaching and learning if you were to understand the educational context as a complex system?

7.2. Complex thought

- Complex thought
- Transdisciplinarity
- The dialogic
- Hologrammatic principle
- Homo complexus
- Blinding paradigms
- Pertinent knowledge
- Global citizenship
- Disjunction
- Reduction
- Closed specialization
- False rationality
- Feedback loops
- Self-eco-re-organizing systems
- Ethics for the human genre

Philosophical overview

Complex thought is a metatheoretical approach created by the French sociologist Edgar Morin. His work over the last five decades has been driven by a search for a method that would enable an understanding of the complexity of humanity (Morin, 1992; Morin, 2008). This mission in turn forms the basis for the development of planetary community, earth-citizenship, and ethics for the human genre (Morin, 1992; Morin, 1999; Morin, 2004; Morin, 2008). This aim is achieved through revealing and effectively dismantling "knowledge-mutilating principles" (of error and illusion) and replacing them with pertinent knowledge which takes the complex nature of reality into account (Morin, 1999). In this sense his work has a central epistemological thrust. Key errors which Morin (1999) identifies include disjunction and closed specialization, reduction and disjunction, and false rationality.

We will now briefly discuss Morin's complex thought from the perspective of ontology, epistemology, and methodology, before briefly surveying a number of challenges which this approach presents.

Ontology	• Morin does not discuss his ontological approach in depth in his work. For this reason he is often considered to have an absent (or implied) ontology. This appears to be a weakness to his approach, but as Dobuzinskis (2004) points out it also allows for a certain freedom which empowers the dialogic freedom of Morin's style. • Other ontological principles which Morin (1992) identifies include: o Open systems; o Feedback loops; and o The hologrammatic principle, which identifies the ways in which wholes are reflected in their constituent parts and vice versa (cf. the discussion of fractals in Volume One of the present series). • Morin (1992; 1999; 2004; 2008) proposes that reality emerges evolutionarily through a process of recursive organization as "self-eco-re-organizing systems (Montouri, 2008, p.xxxv)".
Epistemology	• A certain degree of epistemological eclecticism is implied by transdisciplinarity (which is a central feature of Morin's approach) (Morin, 1998). • Key epistemological features identified by Morin include: o Engaging multiple dimensions of reality (the global, the multidimensional, the complex, and the contextual); o Addressing the dualities essential to the human being (as homo complexus), and other principles of pertinent knowledge; and o The distinction between ideas and the complex objects to which they refer. In other words, ideas serve a mediatory role, and when we place undue ontological value on them we fall prey to the mutilating principles of error and illusion. Morin writes: "It is by ideas that we can perceive the shortcomings and the dangers of the idea. Whence the inescapable paradox: we have to lead a crucial battle against

	ideas but we cannot do it without the help of ideas. We should always remember to keep our ideas in their place and not identify them with reality. The only ideas we should trust are ideas that include the idea that the real resists the idea. This is an indispensable task in the fight against illusion (Morin, 1999, p.11)".
Methodology	• Morin adopts a dialogic principle in his work; this entails bringing notions, ideas, and "truths" (both complimentary and contradictory) into relationship with one another in order to perceive the complex nature of reality (Morin, 1992; Dobuzinskis, 2004; Montuori, 2004). This notion of dialogic is a homage to Morin's Hegelian roots (Montuori, 2004; Montuori in Morin, 2008; Dobuzinskis, 2004). However, as Montuori (2004) points out, it differs from Hegel's dialectic in that it does not offer any guaranteed synthetic resolution. • The dialogic, along with Morin's epistemological and ontological position, necessitates a transdisciplinary engagement with knowledge (see, for example, Morin, 2008). Montuori (2005) identifies the following core conditions of transdisciplinarity based on Morin's complex thought: o An inquiry-driven (as opposed to discipline-driven) focus. o A focus on interrogating the meta-paradigmatic dimensions of knowledge (disciplinary approaches tend not to critically examine their paradigmatic assumptions). o "An understanding of the organization of knowledge, isomorphic at the cognitive and the institutional level, the history of reduction and disjunction (what Morin calls "simple thought"), and the importance of contextualization and connection (or "complex thought")" (Montuori in Morin, 2008, p.xxvii).

	○ Acknowledging and integrating the role that the knower plays in the process of inquiry and act of knowing. This entails making transparent the role which the knower plays in the relative construction of knowledge.

Table 16: Morin's complex thought as a paradigm of knowledge

Morin proposes that the notion of complexity presents us with a great challenge. He outlines the nature of this challenge in the following way (Dobuzinskis, 2004):

- the irreducible character of randomness or disorder;
- the extraordinary complicatedness of biological and social phenomena;
- the complementary, and yet logically antagonistic, relationship between order, disorder, and organization;
- most importantly, the deeper understanding of the notion of organization evidenced in a number of disciplines in terms of relationships that are both "hologrammatic" (i.e. each component of the organization itself contains the image of the whole) and recursive;
- the realization that clear distinctions (e.g., between an object and its environment, or between an observed phenomenon and the observer) are no longer a criterion of sound reasoning and methodological appropriateness*;
- the reappearance of the observer in his or her own observation;
- the acceptance of contradiction and the realization of the limits of conventional logic.

These challenges have led to Morin's insistence upon the necessity of creating space for autonomous subjects throughout the natural world; due to the impossibility of truly objective knowledge. This also accounts for his teleological agnosticism when faced with the complexity of human development (Dobuzinskis, 2004).

* In some fields like social anthropology, there is a stream called interpretative and reflexive anthropology, which reflects on the role of the anthropologists as an inquirer. There is a specific focus on layers of translation and interpretation, starting with the fact that it is not clear whether the interviewee is the object or the subject, so the very interview is a co-created event. After this, there are further layers of interpretation, from note-taking, to translation, to the writing process and finally the reader.

Complex thought and education*

The topic of education is a common theme running throughout much of Morin's writing on complexity, but it is dealt with most thoroughly in his book, Seven Complex Lessons in Education for the Future (1999), which deals exclusively with the application of his theory in the field as well as in his writings on transdisciplinarity (for example, in Nicolescu, 2008).

Morin (1999) puts forward seven general arguments concerning what he perceives as being educational necessities at the present time. We will attempt to summarize some key points of these arguments here:

Detecting error and illusion (pp.5-12)	• Morin argues that education has become epistemologically dislocated through neglecting to study the nature of rationality, rational uncertainty, and the instruments of knowledge (be they cultural, intellectual, or cerebral) and their processes and modalities. • Education fails to adequately address the question of what knowledge is thus leaving us ill-equipped in the face of "psychological and cultural dispositions which make us vulnerable to error and illusion (p.1)". • He argues that we have, through adhering to a number of 'blinding paradigms' (most notably the Cartesian paradigm, which "disconnects subject and object, each in its own sphere (p.9)" creating a universal dissociation), become prone to a number of errors in thinking (mental errors, intellectual errors, errors of reason). • Morin therefore posits that "...if we can hope for basic progress in the 21st century it would be that men and women could stop being the unconscious toys of their ideas and not only their ideas but their own self-deception. The major responsibility of education is to arm every single person for the vital combat of lucidity" (p. 12). This should not be understood

* A more comprehensive overview of the impact of complex thought on the educational literature can be found in Hampson & Rich-Tolsma (2013a).

	to mean that Morin values only facts and "reality". Ideas as such are positive, reflect values and can be of normative character, giving direction for the future.
Principles of pertinent knowledge (pp.13-19)	• Morin argues that humans are faced with the challenge of developing a method for grasping general, fundamental problems and usefully inserting and using partial, circumscribed knowledge within them (p.1). This problem remains essentially unresolved because of the tendency of education towards the petrification and dislocation of knowledge. Morin identifies this as taking the form of three essential problems: o disjunction and closed specialization; o reduction and disjunction; and o false rationality (pp.16ff). • These problems serve to obscure the realms of o 'the context'; o 'the global'; o 'the multidimensional'; and o 'the complex' (pp.13ff). It is essential to elucidate these factors. • Morin argues that this situation is remedied by developing "the natural aptitude of the human mind to place all information within a context and an entity. We should teach methods of grasping mutual relations and reciprocal influences between parts and the whole in a complex world (p.1)".
Teaching the human condition (pp.21-30)	• Morin argues that human beings possess at least physical, biological, cultural, social, and historical dimensions to their being (p.25ff). • All of us possess this complex identity (homo complexus (p.28)) which we share rooted ←→ uprooted in cosmic, physical, earthly, and human conditions. • He argues that the mutilation and disintegration of knowledge that exists in disciplinary education has

	led to widespread ignorance of the complex nature of what it means to be human; whereas the human condition should be an essential subject of all human education. • He proposes that we redress the present disciplinary organization of knowledge by assembling and organizing the knowledge which is presently dispersed throughout the natural and social sciences, as well as the arts and humanities, in such a way as to "demonstrate the indissoluble connection between the unity and diversity of all that is human" (p.2).
Earth identity (pp.31-40)	• Morin argues that the knowledge mutilating principles which are prevalent in contemporary education tend to overlook the reality that "the future of the human genre is now situated on a planetary scale (p.2)". • Since the 16th century, when all continents became geo-politically connected, the fates of all parts of the world have become interdependent (this process has not always been a constructive one and has resulted – and continues to result – in much suffering, domination and oppression). • Morin posits that understanding the planetary nature of our present and future should be a central part of education, he suggests that "the complex configuration of planetary crisis in the 20th century (and, presumably, the 21st as well) should be elucidated to show how all human beings now face the same life and death problems and share the same fate (p.2)".
Confronting uncertainty (pp.41-48)	• Morin discusses the fact that while modern science has revealed many certainties, it has also provided us with at least the same amount of uncertainties. • He argues that the uncertainties which have emerged in the physical, biological, and social sciences should, therefore, form an essential part of education.

	• Advances in the study of complex systems along with the experience of modern history have revealed the uncertainty and unpredictability of our shared future this necessitates that, as Morin (p.3) puts it, "every person who takes on educational responsibilities must be ready to go to the forward posts of uncertainty in our times". • Morin thus introduces the importance of teaching strategic principles for dealing with chance, chaos, and uncertainty. He states that "we should learn to navigate on a sea of uncertainties, sailing in and around islands of certainty (p.3)".
Understanding each other (pp.49-56)	• Morin clarifies that communication takes place in two contexts: a planetary context and the context of individual connection; as well as two essential types: intellectual or objective, and human intersubjective. • He argues that understanding is both the means and the end of communication, but that the transmission of information (though necessary) is not sufficient for the development of understanding; therefore understanding – as opposed to merely information – should form a central part of education. • Developing the capacity for understanding begins with identifying and eradicating obstacles to understanding; Morin therefore identifies a number of such obstacles born out of egocentrism, ethnocentrism or sociocentrism, and the reductive mind. • In addition to addressing these obstacles Morin suggests the importance of the development of a new ethics of understanding. He argues that "if we learn to understand before condemning, we will be on the way to humanizing human relations (p.52)". • He suggests that ethics of understanding are developed through thorough thinking and the mental practice of continuous self-examination (or introspection); additionally it implies a profound aware-

	ness of human complexity encompassing subjective (sympathetic) open-heartedness and an interiorized sense of tolerance. • Finally he draws attention to the value of planetary understanding, and the implications of this in terms of ethics and culture.
Ethics for the human genre (pp.51-62)	• Morin argues for education as core role in the development of "anthropo-ethics" arising from the realization of humankind's existence as individual ↔ society ↔ species. • He posits that moral lessons are insufficient for engendering the ethical sense required for true human expression and that instead it is necessary to cultivate a deep understanding of what it means to embody individual autonomy, participation in community, and awareness of the responsibilities inherent in belonging to the human species. • This ethical awareness helps to prepare us for the move towards the ethical-political imperative of realizing our earth citizenship by way of democracy and fulfilment of humanity as a planetary community.

Table 17: Morin's seven complex lessons

Reflect upon your own educational and life experience.

Can you recall any particular instances in which you are able to detect instances of error and illusion? Specifically consider the following notions in your description: blinding paradigms; reductionism; disjunction; false rationality; and closed specialisation. What were the effects of not adequately taking principles of pertinent knowledge into account? Specifically consider the context, the global, the multidimensional, and the complex.

Identify at least one change that you can make in order to more meaningfully support the implementation of each of the seven complex lessons identified by Morin.

Detecting Error and Illusion

Principles of Pertinent Knowledge

Teaching the Human Condition

Earth Identity

Confronting Uncertainties

Understanding Each Other

Ethics for the Human Genre

ENCOUNTERING TRANSFORMATIVE EDUCATIONAL THEORY

8

Educational theory

8.1. Curriculum paradigms

- Curriculum paradigms (Schiro)
- Schooling paradigm
- Definitions of curriculum
- Developmentalism
- Learner-centredness
- Social reconstructionism
- Scholar-academic ideology
- Social efficiency ideology
- Educational aims and objectives
- Learning process
- Learning product
- Learning praxis

Reflect upon the following questions in the space provided:
What is your own personal definition of the term curriculum?
Do you have primarily positive or negative associations with the concept of curriculum?
How does your understanding of the notion of curriculum reflect upon your practice as a student or educator?

In formulating a critical definition of curriculum for the purposes of our discussion, we have chosen to operate from two key assumptions. Firstly, we assume that learning is planned and guided. This means that we have to specify in advance what we are seeking to achieve and how we are to go about it. Secondly, the definition refers to schooling. We should recognize that our current appreciation of curriculum theory and practice emerged in the school and in relation to other schooling ideas such as subject and lesson.

Consider the following definitions of curriculum:

- "All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school (Kelly, 1999)".
- "A curriculum is an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice (Stenhouse, 1975)". Elsewhere in the same work Stenhouse suggests that a curriculum is analogous to a recipe in cookery.

- "A program of activities (by teachers and pupils) designed so that pupils will attain so far as possible certain educational and other schooling ends or objectives (Grundy, 1987)".

These three perspectives overlap significantly and indicate a clear general context for understanding the nature of curriculum. We will now unpack this in further detail by referring to four specific curriculum paradigms as identified by Schiro (2007) and represented in the diagram below. While examining each of these paradigms we will limit our discussion to examining their core tenets and graphically representing the perspectives which each paradigm tends to privilege (represented through the lens of Wilber's quadrants (which are explained in more detail earlier in the present volume)).

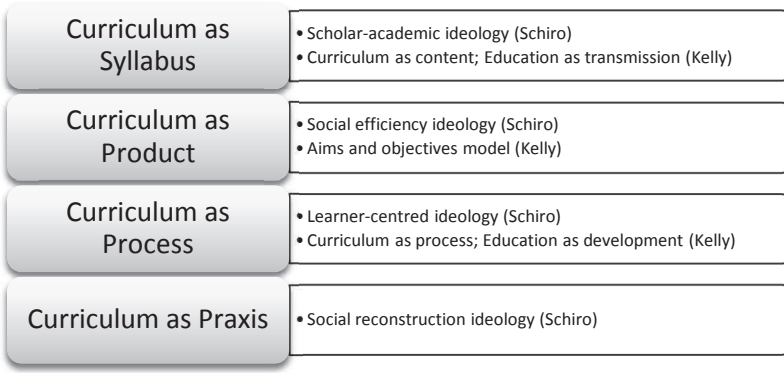


Figure 17: Summary of four curriculum paradigms

Scholar-academic

Main Focus	Academic disciplines
Knowledge	Important knowledge accumulated, organized into disciplines and found in universities
Aim of Education	Learning the accumulated knowledge "Cultural literacy"
Role of Teacher	Deep knowledge of the discipline they are teaching so as to accurately transmit it to students
Content	The knowledge of the discipline as defined by academics (experts) in the field
Learning	Transmission of knowledge which gives the student the ability to understand

Table 18: The scholar-academic paradigm

This paradigm forms the basis of the modern university system. Proponents of this approach to curriculum talk in terms of "a course of study" and tend to draw on classic studies, rules of grammar and arithmetic, "the great books", and so forth. This approach is also referred to as the "traditionalist view" (Gutek, 1974). The approach views academic disciplines as a "hierarchical community of people in search of truth within one part of the universe of knowledge" (Schiro, 2007, p.4). Its primary goal is to preserve and transmit this knowledge as a portion of our shared cultural heritage. Curriculum may thus be conceived of as "the means of transmitting the heritage, in learnable units, to the immature, so that they can participate in the culture" (Gutek, 1974, p.6)

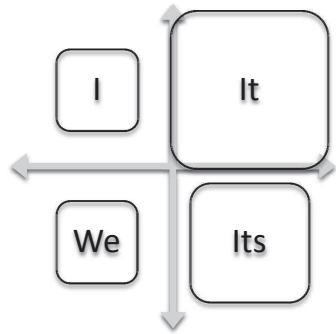


Figure 18: Quadrant reductionism in the scholar-academic paradigm

Learner-centred

Main Focus	Individualized needs and concerns
Knowledge	Knowledge and meaning constructed through engagement in the learning process
Aim of Education	Growth of individuals in harmony with unique intellectual, social, emotional, and physical attributes
Role of Teacher	Drawing out what is innate in the individual
Content	Learner viewed as the source of the content
Learning	Maximizing natural potential through interaction between learner and his environment

Table 19: The learner-centred paradigm

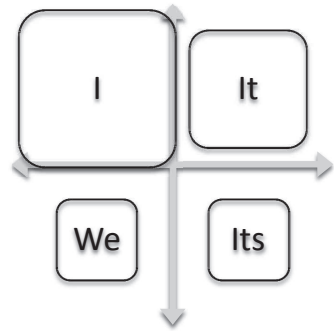


Figure 19: Quadrant reductionism in the learner-centred paradigm

Social efficiency

Main Focus	Needs of society
Knowledge	Skills and procedures needed in the workplace and at home to live productive lives
Aim of Education	To efficiently meet the needs of society by training people to function as future mature contributing members of society "Competencies"
Role of Teacher	Help learners acquire behaviours prescribed by the curriculum Deliver / administer the curriculum
Content	Instruction guided by clearly defined behavioural objectives Aims at mastery of skills
Learning	Evident in change in behaviour Cause-effect or stimulus-response paradigm

Table 20: The social efficiency paradigm

This paradigm is presently pervasive especially in schooling and vocational education contexts. A social efficiency approach is mechanistic in nature and casts educators as technicians tasked with 'delivering' a teacher-proof commoditised curriculum. This type of curriculum content can invariably be reduced to a set of measurable objectives. According to Schiro (2007), this paradigm is hinged on three important assumptions:

- Learning is conceptualized purely in behavioural terms;
- Learning experiences can be artificially manufactured and rigidly sequenced; and
- Teachers are accountable to the clients for whom they work, be they parents, learners, or the state.

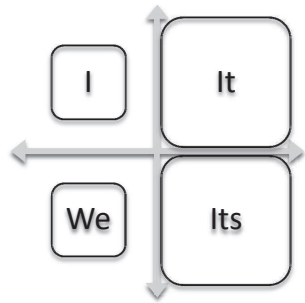


Figure 20: Quadrant reductionism in the social efficiency paradigm

Social reconstructionist

Main Focus	To facilitate the construction of a more just society that offers maximum satisfaction to all its members
Knowledge	Vision of a better society Worthwhile knowledge is a social construction
Aim of Education	Social process through which society is constructed
Role of Teacher	Reconstruct society Stimulate students to reconstruct themselves so that they will contribute to the reconstruction of society Colleague of students
Content	Socially decided and constructed
Learning	Learning is seen as a function of societal transmission, dialogical process between agent and learner.

Table 21: The social reconstructionist paradigm

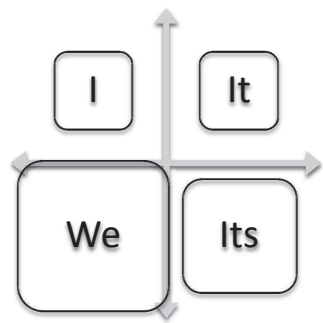


Figure 21: Quadrant reductionism in the social reconstructionist paradigm

Reflect upon your own experience of each of the paradigms examined here. Think of at least one personal example when you have encountered each of these paradigms

in either formal or informal learning contexts. Read the quotes about each of the paradigms collected below, then list what you perceive to be the advantages and disadvantages of each approach.

Scholar-academic

Describe your personal experience of this paradigm.

Reflect upon the following quotations with reference to the scholar-academic paradigm.

- *"The simple truth, as our experience has amply demonstrated, is that the laws the child is forced to obey are arbitrary and that he must no longer be subjected to them, so that the laws of life may guide his development. Programs can be changed; the laws of life are immutable. If we base education on the laws of life, we will create genuine levels of education rather than mere curricula (Montessori, 1972)".*
- *"Often the education of children consists in pouring into their intelligence the intellectual content of school programs. And often these programs have been compiled in the official department of education, and their use is imposed by law upon the teacher and the child. Ah, before such dense and wilful disregard*

of the life which is growing within these children, we should hide our heads in shame and cover our guilty faces with our hands (Montessori, 1912)".

- *"A careful analysis of the teacher-student relationship at any level, inside or outside the school, reveals its fundamentally narrative character. This relationship involves a narrating Subject (the teacher) and patient, listening objects (the students). The contents, whether values or empirical dimensions of reality, tend in the process of being narrated to become lifeless and petrified... The teacher talks about reality as if it were motionless, static, compartmentalized, and predictable. Or else he expounds on a topic completely alien to the existential experience of the students. His task is to 'fill' the students with the contents of his narration (Freire, 2000, p.54)".*

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Learner-centred

Describe your personal experience of this paradigm.

Reflect upon the following quotations with reference to the learner-centred paradigm.

- *"Thus, in this sense, a curriculum is a particular form of specification about the practice of teaching. It is not a package of materials or a syllabus of ground to be covered. It is a way of translating any educational idea into a hypothesis testable in practice. It invites critical testing rather than acceptance (Stenhouse, 1975, p.142)".*
- *"The concept of an education centred upon the care of the living being alters all previous ideas. Resting no longer on a curriculum, or a timetable, education must conform to the facts of human life (Montessori, 1988)".*

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Social efficiency

Describe your personal experience of this paradigm.

Reflect upon the following quotations with reference to the social efficiency paradigm.

- *"The difficulties that educators experience with objectives in the classroom may point to something inherently wrong with the approach - that it is not grounded in the study of educational exchanges. It is a model of curriculum theory and practice largely imported from technological and industrial settings (Smith, 1996/2000)".*
- *"To adopt this kind of industrial model for education is to assume that it is legitimate to mould human beings, to modify their behaviour, according to certain clear-cut intentions without making any allowance for their own individual wishes, desires or interests (Kelly, 2004, p.71)".*
- *"Punishment and reward are two sides of the same coin, and that coin won't buy you much (Kohn, 1999)".*
- *"[The product model] is not acceptable to those who take the view that the individual is to be regarded as a free and active agent, responsible for his or her own destiny and who, as a direct consequence of this, believe it to be morally wrong to deny him or her that responsibility and freedom by attempting to mould his or her behaviour to suit the ends of someone else (Kelly, 2004, p.72)".*

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

Social constructivism

Describe your personal experience of this paradigm.

Reflect upon the following quotations with reference to the social constructivist paradigm.

- *"For the anti-dialogical banking educator, the question of content simply concerns the program about which he will discourse to his students; and he answers his own questions, by organizing his own program. For the dialogical, problem-posing teacher-student, the program content of education is neither a gift nor an imposition – bits of information to be deposited in the students – but rather the organized, systematized, and developed 're-presentation' to the individuals of the things about which they want to know more (Freire, 2000, p. 74)".*
- *"The Post-Modernist perspective levels a number of criticisms against the modernist view: (the curriculum has) failed to ensure equal opportunity for all students irrespective of class or status; promoted the knowledge and values of the dominant class; become saturated in the political and economic practices of those who perform it…suppressed the needs, identities, and humanity of students; silenced marginalized groups; and disregarded the necessities or situated knowledge that acknowledges cultural pluralism, context and locale (Glanz & Horenstein, 1999, pp.6-7)".*

What do you consider to be the advantages and disadvantages of this paradigm?

Advantages	Disadvantages

8.2. The invisible curriculum: Eisner's heuristic

- Eisner's heuristic
- Explicit curriculum
- Implicit curriculum
- Hidden curriculum
- Null curriculum

The multi-curricula approach to curriculum inquiry reminds us that whenever we speak of curriculum, we must ask "which curriculum?" We cannot engage in curriculum deliberation without reflecting upon curriculum as many sided meanings and experiences. (Joseph, 2000, p. 6)

Elliot Eisner (1994) proposes that curricula are generally not what they appear to be. His model for explaining the notion of how "form becomes content", has come to be known as Eisner's heuristic (Joseph, 2000), and is generally recognized as a useful and insightful tool for interrogating the curriculum in its entirety. The heuristic includes three layers: the explicit (or official) curriculum, the implicit (or hidden) curriculum, and the null curriculum. In the table below we will briefly examine each of these layers in more detail:

Explicit curriculum	• The explicit curriculum is what we normally understand by the term curriculum. • It is codified and presented as the contents of what is taught. • It is made available for public scrutiny. • Sometimes also referred to as the "planned curriculum" or "official curriculum".

Implicit curriculum ('hidden curriculum')	• Those aspects of learning and social interactions that are not adequately explained in the explicit curriculum. • The hidden curriculum is always present and sometimes has at least as much impact as the formal curriculum. • Often the implicit curriculum is inadvertent, but in other cases it may be argued that it is an intentional form of oppression even though individual actors may not be fully cognizant of the negative effect it has (Gordon et al., 2005; Postman & Weingartner, 1971; Holt, 1967; Gatto, 2002).
Null curriculum	• Curricula are defined just as much by what is not included as what is included. • These excluded aspects make up the null curriculum, conspicuous only by its absence. • The null curriculum may be intentionally excluded (Joseph, 2000), as a form of deception, or simply neglected.

Table 22: Three levels of curriculum

Reflect upon your own experience of schooling. Can you succinctly describe some key aspects of your experiences of each of the three levels of curriculum?

Explicit curriculum	
Implicit curriculum ('hidden curriculum')	

Null curriculum	

9

Transformative educational theory

9.1. Transformative learning

- Transformative learning theory
- Self-directed learning
- Critical self-reflection
- Adult learning

Mezirow (1978a) first identified transformation as a valuable educational idea while conducting research in the late 1970s with women who returned to post-secondary education or the workplace after a protracted absence. He was interested in exploring the factors which impeded or facilitated meaningful and successful re-entry experiences; his discoveries lead him to a number of valuable realizations concerning the nature of learning. Notably he evolved a new definition of transformation as "the process of using a prior interpretation to construe a new or a revised interpretation of the meaning of one's experience to guide future action" and concluded that "transformative learning occurs when there is a transformation in one of our beliefs or attitudes (a meaning scheme), or a transformation of our entire perspective (habit of mind)" (Merriam, Caffarella, & Baumgartner, 2007, p.132). Mezirow's original model (1978a; 1978b) is normally understood in terms of ten stages of transformation as illustrated in the following table.

Phase 1	Disorientating dilemma
Phase 2	Self-examination with feelings of guilt and shame
Phase 3	Critical assessment of epistemic, socio-cultural, and psychic assumptions
Phase 4	Recognising the connection between discontent and the process of trans-formation, and recognition that others have negotiated this change
Phase 5	Exploration of options for new roles, relationships, and actions
Phase 6	Planning a course of action
Phase 7	Acquisition of knowledge and skills for implementation of plan
Phase 8	Provisional trying of new roles
Phase 9	Building competence and self-confidence in new roles and relationships
Phase 10	A reintegration into one's life based on the conditions dictated by one's perspective

Table 23: Phases of the transformative learning model

Kitchenham (2008) points out the major influences on Mezirow's early work (1978a; 1978b; 1981) as being Thomas Kuhn's (1962) notion of paradigm shifts as the structure of scientific revolutions; Paulo Freire's (2000) notion of conscientization and dialogical action; and – from 1981 – Jürgen Habermas' (1971; 1984) domains of learning: the technical; the practical; and the emancipatory.

Mezirow has continued to refine his theory over the last three and a half decades. In his 1985 essay, *Critical Theory of Self-Directed Learning*, Mezirow distinguishes three types of learning – the instrumental; the dialogic; and the self-reflective – each of which comprise three possible learning processes – learning within meaning schemes; learning new meaning schemes; and transforming by learning through meaning schemes. Another significant refinement is Mezirow's (1998) distinction between two types of critical reflection on and of assumptions: firstly, objective reframing of narrative and/or action; and, secondly, subjective reframing of critical self-reflection on assumptions manifesting as narrative, systemic, therapeutic, and epistemic. A third significant contribution to the theory is the addition of four domains of transformation: elaborating upon existing frames

of reference; learning new frames of reference; transforming points of view; and transforming habits of mind (Mezirow, 2000).

Taking all this into account one can understand this transformative learning approach as integrating multiple understandings of the notion of transformation (Dirkx, 1998), including: transformation as consciousness-raising – identified primarily with Freire (2000); transformation as critical reflection – the category with which Mezirow is most obviously identified; and transformation as development – usually identified with the work of Larry Daloz (1986), but conceivably also those developmentalists who understand development as a transformation in consciousness such as Sri Aurobindo (1975), Jean Gebser (1956), and Robert Keagan (1994); this is discussed by Merriam (2004).

Complete the table below. Use an example from your own experience to illustrate the process of moving through the ten phases identified in Mezirow's model.

Phase 1	
Phase 2	

Phase 3	
Phase 4	
Phase 5	
Phase 6	

Phase 7	
Phase 8	
Phase 9	
Phase 10	

9.2. Discourses of learning transformation

- Consciousness raising
- Conscientization
- Critical reflection
- Development
- Structures of consciousness
- Individuation

What does transformation mean to you?

Share an experience in which your consciousness was transformed through critical reflection on a core assumption that you held?

Dirckx (1997) identifies four understandings of transformation that have applications in the field of adult education and learning. These four perspectives are presented in the following able:

Transformation as consciousness-raising (Freire, 1970/2000)	Transformative learning takes place as conscientization or consciousness-raising as a result of dialogical action (generally in the context of problem-posing learning engagements). Through this dialogical process learners develop an awareness of the social and political discourses which are used to disempower them. They also forge a path towards subjective agency which enables them to transform their world through their own conscious transformation. More information on this approach may be found in the section on 'Critical pedagogy' in the present volume.
Transformation as critical reflection (Mezirow, 1991)	Mezirow built upon the work of Freire and others to build a model of transformation strongly influenced by cognitive and developmental psychology.* This model – which Mezirow initially termed perspective transformation – describes a transformative process of meaning-making through reflection, critical reflection, and critical self-reflection. Through critical reflection we are able to identify, assess, and reformulate (potentially faulty) key assumptions on which their perspectives are based.
Transformation as growth and development (Daloz, 1986)	Although growth and development are implied in both Freire and Mezirow's approaches, they are not expanded upon explicitly. Larry Daloz (1986) argues that meaning-making serves as the primary motivation for learning, and also as the basis for development. He argues that learners often find themselves caught between developmental stages; as the frame of reference at one level becomes inadequate, transformation takes place through a process of meaning-making and a new framework is established. Transformation therefore represents the process through which growth occurs. Another developmental approach to transformation is represented in the work of Robert Kegan (1994).

Transformation as individuation (Boyd, 1991)	Robert Boyd (1991; Boyd & Myers, 1988) represents a rather under-represented perspective on the meaning of transformation. In many ways this might also be considered to be a developmental approach; however it differs greatly from other developmental approaches due to the fact that it is based upon depth psychology (specifically the analytical psychology of Carl Gustav Jung). Boyd argues that transformation occurs through making unconscious parts of oneself conscious; this occurs in the broader context of what Jung referred to as individuation. Individuation entails engaging in a dialogue with symbolic archetypes (such as Anima and Animus, shadow, etc.) which represent various parts of the self.

* A useful critique identifying specific limitations of Mezirow's transformative learning theory can be found in Taylor (1997).

Table 24: Four discourses of transformation for adult learning

10

Integral education theory

10.1. Montessori education

- Normalization
- Valorization
- Freedom
- Purposeful activity
- Cosmic curriculum

The aim of education

Maria Montessori (1988) observed that, "The child is endowed with unknown powers, which can guide us to a radiant future. If what we really want is a new world, then education must take as its aim the development of those hidden possibilities (p.4)". Her philosophy was premised upon the belief that the child is born with a capacity to develop into something great. However numerous interferences in this path (normally by adults such as teachers and parents) cause development to deviate from the natural path that individuals take when free from interference. Montessori therefore proposed a revolutionary aim for education, namely protecting these inner capacities. She wrote,

> The great task of education must be to secure and to preserve a normality which, of its own nature, gravitates toward the centre of perfection. Today, instead, all we do is to prepare artificially men who are abnormal and weak, predisposed to mental illness, constantly needing care not to slip outward to the periphery where, once fallen, they become social outcasts... What weighs upon it is the fact that, without knowing it, we are ignoring the creation of man and trampling on the treasures which God himself has placed in every child. Yet here lies the source of those moral and intellectual values which could bring the whole world on to a higher plane (Montessori, 1988, p.219).

Montessori believed that this natural self-construction can take place when the child chooses and concentrates upon purposeful activities with minimal interference. She wrote, "Making use of his own will in his contact with this envi-

ronment, he develops his various faculties and thus becomes in a sense his own creator (1966, p.33)".

She posited that this focus on securing, supporting, and protecting the child's natural, evolutionary, developmental impulse would form the basis of the renewal of society. Individual character refinement is a necessary precursor to broad-scale social change. Lakshmi Kripalani, one of Montessori's protégés during her time in India, wrote of Montessori,

> For her, merely acquiring of information does not lead humanity anywhere. Her concern is with the strength of character of each individual leading to the refinement of the whole humanity. Providing such care starts from birth. (Kripalani, 2002, Lecture 1 (Intro)

Freedom as the basis of all else

> How can we speak of Democracy or Freedom when from the very beginning of life we mould the child to undergo tyranny, to obey a dictator? How can we speak of democracy when we have reared slaves? ... How can we expect them, when school life is finished, to accept and use the rights of freedom (Montessori, 1963, p.47)"?

Montessori identified the many ways in which institutionalized education constrains and disempowers children. Children grow up under a form of slavery; they have little say in many of the decisions which affect their life profoundly. This mentality does not simply disappear when children reach adulthood; rather they often become slaves to other institutions. She clarifies the problem further,

> At this point one has to ask why one section of humanity is allowed to express its free choice for a government that it wants by voting, while the other half cannot show its own will in the same way. How can the soul be forged in such constriction? Children have no choice either in their school or in their teacher, nothing. Education understood like this is no education for the man who wants to grow into something great. There is no provision for such an approach in education today (Montessori, 1998a).

Here Montessori identifies that the effect of this lack of freedom, this constant silencing, impedes the development of the child. In this way freedom is directly related to her educational aim.

There are two chief ways in which the educator can facilitate greater freedom for the child. Firstly, the adult can include the child's voice in decision making specifically when decisions directly interest and affect the child. This can be done through frank empathic dialogue as well as through bringing inclusive decision-making methodologies into the classroom. Secondly, the learning environment

can be ordered in such a way as to facilitate free movement and choice of activity without undue distraction. Montessori wrote,

> It is not possible to speak of free choice when all kinds of external stimuli attract a child at the same time and, having no will power, he responds to every call, passing restlessly from one thing to another." In this way the child can easily become a "slave to superficial sensations which leave him at the mercy of his environment" (Montessori, 1988, p.247).

The cosmic vision

In the following quotation Maria Montessori's son, Mario, sums up some of her central ideas on curriculum:

> It is, then, not so important which facts one teaches the student, because very often these facts are already obsolete by the time they can be used. It is more important to help him to develop his potentialities so that he can rely on his own ability to cope with the unexpected and solve whatever new problems may crop up. He must be helped to feel independent in his own world and to develop the vision that will help him as an adult to maintain the environment in such a way that the unending, creative and gigantic cosmic task of man can continue (Montessori, 1987).

What is far more important to Maria Montessori than what information is conveyed is the vision which children are able to acquire through their engagement with life.

Montessori possessed an evolutionary philosophy: she believed that man had an important role to play in the continuing development of the cosmos. She wrote that "With the harvest of his intelligence man is seen, in fact, as the continuer of creation, as if he had been sent ... to use this power to help creation and accelerate its rhythm. By exercising control over life itself, he helps to perfect it (Montessori, 1988, p.46). Elsewhere she wrote,

> There is a plan to which the whole universe is subject. All things, animate and inanimate, are subordinated to that plan. There are also patterns for each species of living and non-living things. These patterns fall in line with the universal plan...Everything in Nature, according to its own laws of development, approximates to the pattern of perfection applicable to itself. There is an urge in every individual of every species to fit into the appropriate pattern. There is also an inevitableness [sic] with which all patterns fit into the great plan (Montessori, 1998b, p.82).

She believed that there is a great narrative - a plan - which is evident throughout creation, and that we have an educational responsibility to help learners to grasp their role in this narrative, their cosmic task. She therefore, maintained that any syllabus should "give an understanding of the conditions of man in modern society with a cosmic vision of history and the evolution of human life (1983, p.14) She elaborates,

> In the universal syllabus of studies to which the new generations must apply themselves, all the items of culture must be concerned as different aspects of the knowledge of the world and the cosmos. Astronomy, geography, geology, biology, physics, chemistry are but details of one whole. It is their relation to one another that urges interest from a centre towards its ramifications. There is besides this the other part which concerns the directing of the consciousness towards humanity. The cosmic construction of human society must be the core of the study of history and sociology. How can we appreciate humanity if we do not consider first of all its merits, its creative efforts, its obedience to cosmic laws that have unconsciously urged society towards an effective union that today unites the whole of humanity in one vital aspect (Montessori, 1998a, p.111)?

Montessori's writings appear at first to be focussed almost entirely on the topic of childhood. What relevance do you think the three main themes in her work examined here (educational purpose, educational freedom, and cosmic curriculum) might have to the field of transformative higher learning? What specific and relevant insights does she bring to the table?

Compare and contrast Montessori's ideas concerning the cosmic curriculum with Edgar Morin's thoughts on teaching the human condition as well as the ethics for the human genre presented earlier (included in the section on 'complex thought'). Give some examples of what implementing these ideas might actually look like in the context in which you are working.

10.2. Principles of true teaching

The bodily appearance is not all;
The form deceives, the person is a mask;
Hid deep in man celestial powers can dwell.
His fragile ship conveys through the sea of years
An incognito of the Imperishable.
A spirit that is a flame of God abides,
A fiery portion of the Wonderful,
Artist of his own beauty and delight,
Immortal in our mortal poverty.
The sculptor of the forms of the Infinite,
This screened unrecognized Inhabitant,
Initiate of his own veiled mysteries,
Hides in a small dumb seed his cosmic thought.

(Sri Aurobindo, Savitri, Book I, Canto iii, p.23)

Despite the breath-taking scope of his work, Sri Aurobindo (1972, Vol.17, pp.203ff.) attempted to distil his philosophy on teaching into three succinct principles. These three principles, contextualized by his evolutionary psychology, form the basis of Sri Aurobindo's educational approach which was later expanded upon in practical terms at great length by his collaborator, Mirra Alfassa, also known as The Mother.

We will now briefly explain each of these principles by examining their parts and indicating a number of specific shifts (inspired to some degree by Huppes, 2001) which might be implied by each of these principles.

The first principle

> The first principle of true teaching is that nothing can be taught. The teacher is not an instructor or task-master, he is a helper and a guide. His business is to suggest and not to impose. He does not actually train the pupil's mind, he only shows him how to perfect his instruments of knowledge and helps and encourages him in the process. He does not impart knowledge to him, he shows him how to acquire knowledge for

> himself. He does not call forth the knowledge that is within; he only shows him where it lies and how it can be habituated to rise to the surface. The distinction that reserves this principle for the teaching of adolescent and adult minds and denies its application to the child, is a conservative and unintelligent doctrine. Child or man, boy or girl, there is only one sound principle of good teaching. Difference of age only serves to diminish or increase the amount of help and guidance necessary; it does not change its nature. (Aurobindo, 1972, Vol.17, p.203-204).

We will begin by examining the first two sentences of this section:

> The first principle of true teaching is that nothing can be taught. The teacher is not an instructor or task-master, he is a helper and a guide. His business is to suggest and not to impose.

This portion points to the innate nature of knowledge – a concept which will be expanded upon further in the next section dealing with Sri Aurobindo's epistemology of consciousness. This idea is not uncommon in Vedantic thought (see for example, Vivekananda, 1996, p.9). As Sri Aurobindo points out, this idea has significant implications for the practice of teaching; teachers are not technicians responsible for merely delivering knowledge, rather they are facilitators of conscious awareness who rouse "the internal teacher to work to understand things" (Vivekananda 1996: p.10). This process might be compared to the process of conscientization through dialogical action identified by Freire (2000), which is discussed in the section on Critical pedagogy in the current volume. This change in the approach to teaching encompasses a shift from teaching subject matter to invoking the knowledge within; and a shift from one cluster of roles (dominator, controller, technician, taskmaster) to another (partner, helper, participant, learner, coach, facilitator).

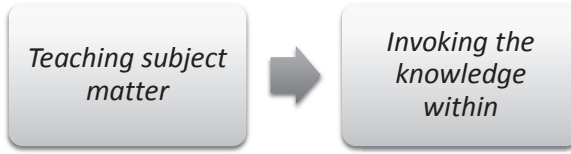


Figure 22: First principle of true teaching (a)

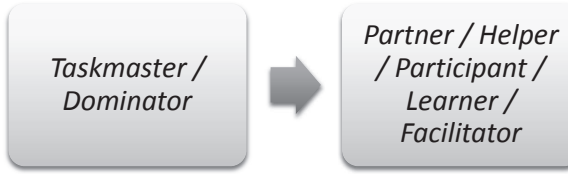


Figure 23: First principle of true teaching (b)

Sri Aurobindo continues:

> He does not actually train the pupil's mind, he only shows him how to perfect his instruments of knowledge and helps and encourages him in the process.

Some of the developments that might support the perfection of the instruments of knowledge are detailed in the table below:

Observation	General, closer, analytical
Concentration	As the essence of all true education
Memory	Observe, remember, and judge various classes of objects
Judgement	Train students to recognize correct ideas, measurements, appreciation of colour, sound, scent, etc. Capacity to compare one's own judgments with the judgments of others
Analogy	Draw analogies and use them in arguments
Imagination	Forming of mental images, Power of creating thought, images Appreciation of the soul in things, beauty, greatness, etc.
Will-power	In combination with concentration
Reason	Discernment of data Avoiding fallaciousness in arguments

Table 25: Perfecting the instruments of knowledge

This development might be conceptualized as a transition from a focus on curriculum content to a focus on the individual's development, and from a reli-

ance on textbooks and a predictable set of activities to an interaction with a wide variety of learning materials and transformative experiences.

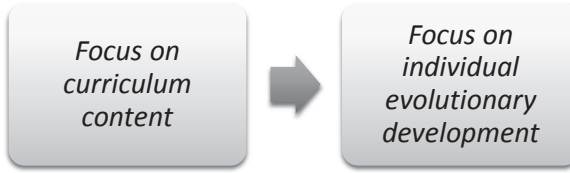


Figure 24: First principle of true teaching (c)

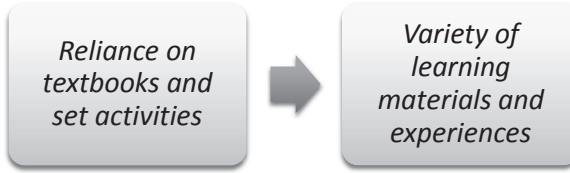


Figure 25: First principle of true teaching (d)

Expanding further upon the new role of the teacher implied by an understanding of innate knowledge, Sri Aurobindo writes

> [The teacher] does not impart knowledge to [the student], he shows him how to acquire knowledge for himself. He does not call forth the knowledge that is within; he only shows him where it lies and how it can be habituated to rise to the surface.

This idea was echoed by Swami Vivekanda (1996, p.10) when he wrote,

> In many cases it [knowledge] is not discovered, but remains covered, and when the cover is being slowly taken off, we say 'we are learning', and the advance of knowledge is made by the process of uncovering.

A shloka (verse) in the Isavasyna Upanishad translates as "use science to negotiate the travails of the light till death comes, and attain immortality by realising the unchanging principle underlying the changing images of the self through transcendental knowledge in the fourth state of consciousness. In terms of this understanding, we are born of one source to which we inevitably return and that we have this little bit of life sandwiched in between. There is a particular way of relating to the eternal truth, but there is also a way (science) of relating to the transitory existence; these two different types of knowledge are referred to in

turn as the vidya and avidya which emerge through epistemological enquiry into the three kinds of existence: paramarthika (real life) and vyavaharika (practical life) and pratibhasika (illusory life), respectively.

Avidya is often translated as 'ignorance', but this is misleading as avidya does not refer to the absence of knowledge, but rather only to a particular type of knowledge. Avidya encompasses empirical or scientific knowledge and reasoning. This is precisely the type of knowledge which is engaged by positivist and post-positivist schools of enquiry. Essentially avidya is the type of knowledge which one gains and can use when engaging the vyavaharika satta (plane of reality).

The vyavaharika satta deals with empirical reality. In other words its ontological territory is limited to the material plane of sense perception and all of the physio-psycho-social aspects that constitute everyday life. Epistemologically the subject-object dichotomy is maintained, meaning that this is a dualistic epistemology which distinguishes the knower from the object of their knowledge.

The vyavaharika satta utilizes a particular methodology to engage empirical reality and uncover avidya. This methodology makes use of six tools explained in the table below.

Pratyaksa	*Perception*	Direct sensory interaction with the material world
Anuman	*Inference*	The process whereby the knower makes certain generalized assumptions through exploring aspects such as causality
Apuman	*Comparison*	The process of comparing aspects of material reality in terms of their similarities and differences
Sabda	*Verbal testimony*	The process whereby the knower gathers data represented in the testimony of others
Arthapatti	*Postulation*	The process of hypothesis testing through experimentation (essentially this is the same as the methodology used in the modern natural science paradigm)
Anupalabdhi	*Non-cognition*	An intuitive process whereby knowledge of the material world is grasped without engaging directly in a thought process

Table 26: Six methodological tools of the vyavaharika satta

Vidya, on the other hand, is insight into the transcendental or divine non-dual reality. This is the type of knowledge which emerges through engaging the paramathika satta. The Isavasya Upanishad clarifies the ways in which each of these types of knowledge has a role to play: vidya for communing with the eternal truth underlying reality and avidya for application in our day to day lives.

Ontologically the paramarthika satta concerns itself with transcendental reality, the spiritual plane. It describes it as being immutable and eternal. This ultimate reality may be experienced in this life only under certain conditions such as samadhi (concentrated yogic meditation). This plane is characterized by a monistic epistemology. The knower and the known are considered to be one and the same; this is stated in the Sanskrit term, "ahm brahmha asmi".

This methodology used when engaging the paramarthika satta is essentially experiential in nature and involves engaging in a process of spiritual praxis known as sadhana which is conducted under the guidance of a mentor or seer, known as a rsi or drsta. Due to the experiential nature of this domain, ultimate authority does not rest in a particular text, but rather in the hands of those who have had a direct personal experience of spiritual truth. Spiritual reality is thus dynamic and transformative in nature, and an experience of this domain fundamentally alters the nature of the subject of the experience.

The process of sadhana is a praxis which denotes 'making'. It is the process by which the seeker transforms the self. This process involves a number of parts, including:

- Jijnasa (detached truth-seeking);
- Aksipartrakalpata (sensitivity);
- Samvega (earnestness);
- Viveka (maturity and wisdom); and
- A fundamental acknowledgment of the constraints of the ego.

The practical path which the seeker follows in their sadhana consists of three ways or marga, these are:

- Jnana (knowledge);
- Karma (action); and
- Bhakti (devotion).

The implications of this ontological position for teaching include a movement from a focus on product/outcome to a focus on dynamic process; and a movement from a mental, or mind–centred, approach to a psychic centred one.

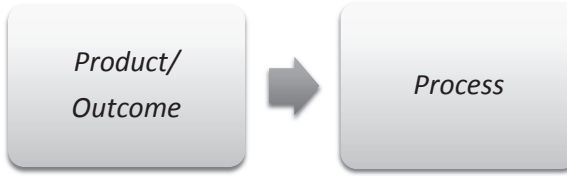


Figure 26: First principle of true teaching (e)

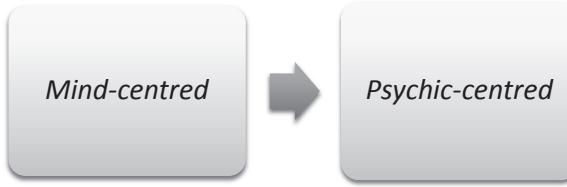


Figure 27: First principle of true teaching (f)

The second principle

Sri Aurobindo writes:

> The second principle is that the mind has to be consulted in its own growth. The idea of hammering the child into the shape desired by the parent or teacher is a barbarous and ignorant superstition. It is he himself who must be induced to expand in accordance with his own nature. There can be no greater error than for the parent to arrange beforehand that his son shall develop particular qualities, capacities, ideas, virtues, or be prepared for a prearranged career. To force the nature to abandon its own dharma is to do it permanent harm, mutilate its growth and deface its perfection. It is a selfish tyranny over a human soul and a wound to the nation, which loses the benefit of the best that a man could have given it and is forced to accept instead something imperfect and artificial, second-rate, perfunctory and common. Everyone has in him something divine, something his own, a chance of perfection and strength in however small a sphere which God offers him to take or refuse. The task is to find it, develop it and use it. The chief aim of education should be to help the growing soul to draw out that in itself which is best and make it perfect for a noble use (Aurobindo, 1972, Vol.17, p.204).

Sri Aurobindo begins his explanation of the second principle by stating that "the mind has to be consulted in its own growth". Maria Montessori (1992) expresses a similar notion. She writes,

> Without freedom it is impossible for personality to develop fully. Freedom is the key to the entire process, and the first step comes when the individual is capable of acting without help from others and becomes aware of himself as an autonomous being.

This idea is further expanded upon by The Mother (1978, vol. 12), specifically with reference to its implications for teachers.

> The teacher should not be a book that is read aloud the same for everyone, no matter what his nature and character. The first duty of the teacher is to help the student to know himself and to discover what he is capable of doing.
>
> For that one must observe the activities to which he is drawn naturally and spontaneously and also what he likes to learn, whether his intelligence is awake, the stories he enjoys, the activities which interest him, the human achievements which attract him.

Some of the implications that this has for teaching include a transition from content-based curriculum to an evolutionary transformative one; and a transition from a static syllabus to dynamic freedom.

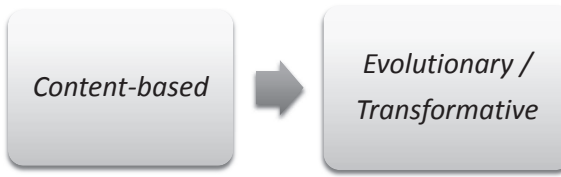


Figure 28: Second principle of true teaching (a)

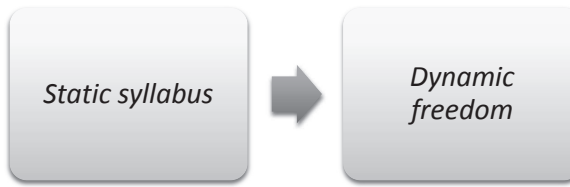


Figure 29: Second principle of true teaching (b)

Montessori expressed a resonant view of the aim of education. She uses terms like "normal" and "normality" not as a designation of some kind of norm, standard or average; quite on the contrary, normal is for her when children are left to explore, learn and develop freely, in line with their unique individuality. It is a state of focused psychic energy.

Montessori's son, Mario Montessori, states that,

> It is ... not so important which facts one teaches the student, because very often these facts are already obsolete by the time they can be used. It is more important to help him to develop his potentialities so that he can rely on his own ability to cope with the unexpected and solve whatever new problems may crop up. He must be helped to feel independent in his own world and to develop the vision that will help him as an adult to maintain the environment in such a way that the unending, creative and gigantic cosmic task of man can continue (Montessori, 1987).

The ramifications of this orientation to purpose might be understood as a movement from an educational approach focussed on manufacturing social efficiency to one based upon the dharma of the individual and society.

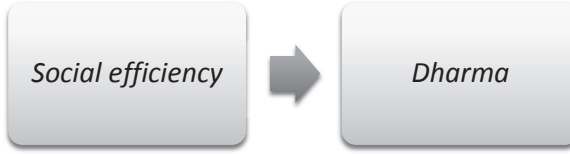


Figure 30: Second principle of true teaching (c)

In the above quote, Sri Aurobindo builds upon this idea of dharma-based education, pointing out that,

> To force the nature to abandon its own dharma is to do it permanent harm, mutilate its growth and deface its perfection. It is a selfish tyranny over a human soul and a wound to the nation...

This recalls the effects of a banking approach to education which petrifies knowledge rendering it neither beautiful nor useful. It reduces the learner to the docile role of a knowledge receptacle, an object (Freire, 2000). What is needed is a move away from this oppressive approach of educational narration towards freedom created through dialogical action; and from an educational discourse

which adopts popular values to one which nimbly and reflexively evolves new, context-dependent values.

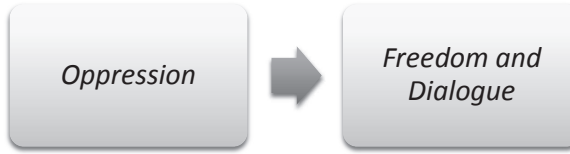


Figure 31: Second principle of true teaching (d)

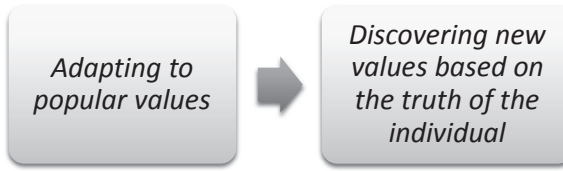


Figure 32: Second principle of true teaching (e)

The third principle

> The third principle of education is to work from the near to the far, from that which is to that which shall be. The basis of a man's nature is almost always, in addition to his soul's past, his heredity, his surroundings, his nationality, his country, the soil from which he draws sustenance, the air which he breathes, the sights, sounds, habits to which he is accustomed. They mould him not the less powerfully because insensibly, and from that then we must begin. We must not take up the nature by the roots from the earth in which it must grow or surround the mind with images and ideas of a life which is alien to that in which it must physically move. If anything has to be brought in from outside, it must be offered, not forced on the mind. A free and natural growth is the condition of genuine development. (Aurobindo, 1972, Vol.17, p.215).

Sri Aurobindo begins his discussion of his third principle by stating the importance of working "from the near to the far". This idea has two primary implications. Firstly, there is a movement away from simply focussing on teaching what is on the next page towards an education that encompasses all aspects of the being; moving from the physical, to the vital, to the mental, to the supramental. Secondly, there is a movement away from generic syllabi towards personalized approaches that orientate themselves in relation to the learner's own experiences in the context of their own culture. These shifts can only be accomplished if the

teacher is willing to shed the pretence of omniscience and take on the role of scientist and observer.

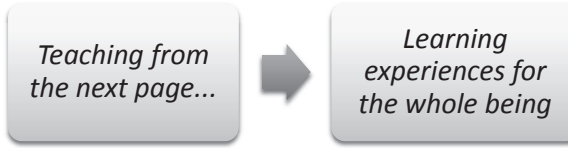


Figure 33: Third principle of true teaching (a)

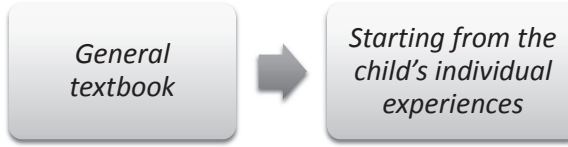


Figure 34: Third principle of true teaching (b)

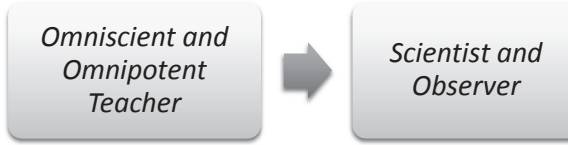


Figure 35: Third principle of true teaching (c)

11

Critical educational theory

11.1. Critical pedagogy

- Critical pedagogy
- Banking model
- Problem-posing education
- Praxis
- Learner as active subject
- Dialogical action
- Action
- Reflection
- Dialectic

In his book, *The Pedagogy of the Oppressed* (2000), the Brazilian educator and philosopher Paulo Freire writes:

> A careful analysis of the teacher-student relationship at any level, inside or outside the school, reveals its fundamentally narrative character. This relationship involves a narrating Subject (the teacher) and patient, listening objects (the students). The contents, whether values or empirical dimensions of reality, tend in the process of being narrated to become lifeless and petrified...The teacher talks about reality as if it were motionless, static, compartmentalized, and predictable. Or else he expounds on a topic completely alien to the existential experience of the students. His task is to 'fill' the students with the contents of his narration (Freire, 2000, p.54).

This form of educational relationship is profoundly disempowering to the student and serves to disintegrate the dialogical relationship between the student and the teacher through the objectivism (denial of subjectivity in action and cognition) of the student, and subjectivism (denial of objectivity in the world) of the teacher. Subjectivity and objectivity sit in constant dialectical relationship with one another (p.50). Freire observed that, when this is the case, education often comes down to little more than a banking transaction. Teachers – as active subjects – make deposits of knowledge into students (who end up being petrified objects – receptacles), and then – at a later stage – make a withdrawal in the form of an assessment. He further observes that "the more students work at storing the deposits entrusted to them, the less they develop the critical consciousness which would result from their intervention in the world as transformers of that world (Freire, 2000, p.55)". He writes,

> Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiqués and makes deposits which the students patiently receive, memorize, and repeat. This is the "banking" concept of education, in which the scope of action allowed to the students extends only as far as receiving, filling, and storing the deposits. ... In the banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing. Projecting an absolute ignorance onto others, a characteristic of the ideology of oppression, negates education and knowledge as process of inquiry (p.72).

The solution that Freire proposes lies in what he terms problem-posing education. He suggests that we must "...begin with the solution of the teacher-student contradiction, by reconciling the poles of the contradiction so that both are simultaneously teachers and students" (Freire, 1998, p.53). "In problem-posing education", he later continues, "people develop their power to perceive critically the way they exist in the world with which and in which they find themselves; they come to see the world not as a static reality, but as a reality in process, in transformation (p.64)". He explains that "problem-posing education does not and cannot serve the interests of the oppressor", because "no oppressive order could permit the oppressed to begin to question: Why? (p.67)". We can therefore understand problem-posing education in terms of the dialectical relationships between subjectivity and objectivity, and reflection and action.

Freire hypothesized that for the learner to move from object to subject, he or she needed to be involved in dialogical action with the teacher. He proposed that this dialogical action is the praxis that exists when there is correct tension between action and reflection enabling true work that empowers the learner to speak their own words and thus name their own world (Freire, 1998). The subjects, or dialoguers, are able to "focus their attention on the reality which mediates them and which – posed as a problem – challenges them. The response to that challenge is the action of dialogical Subjects upon reality in order to transform it (p.149)"; dialogue is thus "an encounter between men [and women], mediated by the world in order to name the world (p.88)".

In order to explain the transformative effect of this approach in the lives of students, Freire writes,

> Students, as they are increasingly posed with problems relating to themselves in the world and with the world, will feel increasingly challenged and obliged to respond to that challenge. Because they apprehend the challenge as interrelated to other problems within a total context, not as a theoretical question, the resulting comprehension tends to be increasingly critical and thus constantly less alienated. Their response to the challenge evokes new challenges, followed by new understandings; and gradually the students come to regard themselves as committed (p.81).

Describing the teacher in the banking model of education, Freire writes that:

> Each time they say their word without hearing the word of those whom they have forbidden to speak, they grow more accustomed to power and acquire a taste for guiding, ordering, and commanding. They can no longer live without having someone to give orders to. Under these circumstances, dialogue is impossible (p. 134).

Kincheloe (2005) suggests that teachers who undertake the role of critical educator are set apart by their capacity to understand:

- how knowledge is produced and certified (and hawked to the public) (Abukhattala, 2004);
- the socio-cultural, political, and economic context in which schooling takes place;
- the skills and insights of scholar-teachers operating with a critical cosmological consciousness;
- the ways reductionism undermines the complexity and multiple perspectives which are a part of all curriculum development;
- the ways power wielders subtly shape what is allowed in the curriculum; and
- the different purposes that different educational institutions have pursued.

Address the following questions with regards to your own educational experience.

Give an example of where you have encountered banking education.

Give an example of where you have encountered problem-posing education.

Can you identify how the banking model occurs in at least three contexts other than the classroom?

Can you describe your experience of banking education during the following life periods?
Birth to six years of age

Six to twelve years of age

Twelve to eighteen years of age

Eighteen to twenty-four years of age

Who ultimately benefits from the institutionalized banking education model in higher education?

11.2. Self-directed learning

- Andragogy (Knowles)
- Self-directed learning
- Characteristics of adult learners
- Transformative learning (Mezirow)
- Taxonomy of critical self-reflections
- Heutagogy (Kenyon & Hase)
- Self-determined learning
- Double-loop learning
- Competency capability
- Maturity and rational emancipation
- Characteristics of transformative teachers
- Characteristics of transformative learners
- Characteristics of transformative curricula

Recall an incident in which you chose to learn something merely for the intrinsic pleasure of learning something, and in which your learning process was entirely self-directed. How was this experience qualitatively different to more formal types of learning experiences? What resources did you use?

As learners develop they become increasingly emancipated, mature, and functionally autonomous (Mezirow, 1997). This development takes place in inverse proportion to their need for scaffolding, instructional support, and cultural mediation (Canning & Callan, 2010; Kenyon & Hase, 2010). Blaschke (2012) therefore proposes that there is a natural developmental progression from the age old concept of pedagogy (leading the child) built upon teacher-lead student engagement, to andragogy (leading the man) built upon the student-centred notion of learning cultivation, to heutagogy (leading the self) built upon the self-determined notion of self-realization (Canning, 2010).

Despite the fact that the term has been in use since the 1830's*, the term andragogy is presently most frequently associated with the work of the American educational theorist Malcolm Knowles. Knowles' (1984; 1990) approach proposes that adults learn in a radically different way compared to children and therefore the processes of adult educational engagement need to be understood in a fundamentally different way. Andragogy advances the following six assumptions concerning the nature of adult learners:

* This term was originally coined by the German educator Alexander Kapp in 1833 and was subsequently developed into a systematic theory of adult learning by Eugen Rosenstock-Huessey. From the 1970s to the present this theory has been developed and popularized – particularly in the USA – by Malcolm Knowles.

Need to know	Adults have a need to understand the reason for learning something
Experience	Experience, both successful and unsuccessful, forms the foundational basis for active learning
Self-concept	Adults need to be responsible for making their own educational decisions, with their own self-concept serving as the basis of their involvement in the planning and evaluation of their instruction
Readiness to learn	Adults are drawn towards learning things that have obvious and immediate relevance to their lives (either personally or vocationally)
Orientation	Adult learning orientates itself in terms of problem-solving as opposed to mere content mastery
Motivation	Adults respond better to intrinsic (internal) motivation than extrinsic (external) motivation

Table 27: Andragogical assumptions regarding the nature of adult learners

According to Knowles (1950), when these assumptions are taken adequately into account, adult learning should bring about at least the following outcomes:

- Adults achieve mature self-awareness; this entails developing an understanding of their needs, motivations, interests, capacities, and goals. When this happens, they are able to reflect upon themselves, accepting and respecting their present state of development while constantly striving towards improvement.
- Adults can extend this attitude of love, respect, and acceptance to others. This is the attitudinal foundation of the capacity to distinguish between ideas and the people who propagate them, and forms the basis of genuine empathy and a sincere desire to help others.
- Adults can develop a dynamic attitude toward life. Whilst accepting the inevitability of change, they can embrace every moment as an opportunity for learning and refining their experience of life.
- Adults can respond to causes, as opposed to symptoms, of behaviour. Humanity is yet to adequately put this principle into practice with reference to human relations.

- Adults can seek to acquire the skills required to fulfil their unique individual potentials. Every individual has unique potential to fulfil and a contribution to make to humanity and the planet. Achieving this potential requires mastery of a diverse range of skills. One goal of education should be equipping all individuals with the skills which would enable each individual to make full use of her capacities.
- Adults can understand and appreciate the perennial wisdom of human experience. They should familiarise themselves with the heritage of knowledge · the great ideas and the great traditions. These are the notions and values that bind men and women together.
- Adults should understand the society in which they live and be skilful in enacting social change. A democratic civilization requires people at all levels of society to be equipped with relevant knowledge and skills to negotiate the challenges of global citizenship.

In what follows, we will outline the concepts of pedagogy, andragogy, heutagogy. Pedagogy literally means to "lead the child", but it is often used for teaching youth and adults as well. Andragogy, in contrast, concerns the teaching of adults, including their self-directed learning. Knowles (1975, p.18) defines this as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes". This is a process of moving towards ever-increasing levels of self-direction supporting transformational learning, and promoting "emancipatory learning and social action (Merriam, 2001, p.9)". Whereas andragogy treats self-directed learning, heutagogy might be understood as self-determined learning situating the learner as "the major agent in their own learning, which occurs as a result of personal experiences (Hase & Kenyon, 2007, p.112)".

One of the key characteristics of a heutagogical approach is double-loop learning and self-reflection (Argyris & Schön, 1996). As learners take ownership for the determination of their own learning and transformation, they begin to interrogate deeply held beliefs and assumptions underpinning their actions (Eberle & Childress, 2005; Hase, 2009), thus initiating virtuous cycles of learning.

Mezirow (1998b) builds upon this idea by arguing that "learning to think for oneself involves becoming critically reflective of assumptions and participating in discourse to validate beliefs, intentions, values and feelings (p. 197)". To this end he devises a taxonomy of critical self-reflection (Mezirow, 1998b). He posits that on the one hand critical reflection on assumptions yields an objective reframing

of narrative and action; whilst on the other hand it enables four types of subjective reframing: narrative, systemic, therapeutic, and epistemic*. These might be understood as critical self-reflection 'on' rather than 'of' assumptions (King & Kitchener, 1994).

Self-determined learning necessitates that learners move beyond competence and embrace capability as well (Hase & Kenyon, 2000; 2007). Competency consists of proven ability in the acquisition of skills and knowledge; capable people are characterized by a clear understanding of – and confidence in – individual competencies, this makes it possible to creatively engage competencies in service of problem solving in diverse contexts. Capable individuals exhibit the following traits (Hase & Kenyon, 2000; Kenyon & Hase, 2010; Gardner et al., 2007):

- They are skilful and efficient learners with a habit of constant self-reflection;
- They exhibit excellent interpersonal communication and teamwork skills;
- They are flexible and creative, specifically when using acquired competencies in unfamiliar contexts;
- They possess positive values.

Research and theorising about capability reveals the need to clarify the ways in which capable people develop (e.g. Graves, 1993; Stephenson & Weil, 1993; Stephenson, 1994) and delineate the ways in which capability expresses itself in organizational contexts (e.g. Cairns & Hase, 1996; Hase & Davis, 1999; Hase, 1998; Hase, Malloch & Cairns, 1998); heutagogy provides an indispensable framework for pursuing these goals.

Adopting an emancipatory approach such as heutagogy naturally entails redressing our definitions and conceptions of educational roles and processes. Due to the dynamic and complex nature of working in this way, the creation of linear lesson plans and prescriptive classroom techniques is not useful in heutagogy; however, it is hoped that a more nuanced interrogation of some key concepts

* *Narrative critical self-reflection* on assumptions is the application of narrative critical reflection of assumptions to oneself.
Systemic critical self-reflection on assumptions involves transcending critical reflection of assumptions on actions themselves in order to self-reflect on the interobjective factors and influences (organizational, political, social, and moral-ethical) that we tend to take for granted.
Therapeutic critical self-reflection on assumptions involves a sensitive phenomenological appraisal of our feelings and reactive thought patterns in order to apprehend the foreseeable effect that they may have on our actions in the world.
Epistemic critical self-reflection on assumptions goes beyond merely reflecting on our assumptions in order to interrogate the causes, nature, and consequences of our very frame of reference in order to better understand our individual predisposition to learn in particular ways (Mezirow, 1998b).

may serve to provide some further details regarding the nature of transformative educational practice. The following discussion draws heavily on the authors' own experience but includes extensive reference to Mezirow (1981; 1991; 1997), Baumgartner (2001), Daloz (1986; 1999), Dirkx (1997), Taylor (1998), Morin (1999), Kincheloe (2005), and Montessori (1988).

Consider Knowles' assumptions regarding the nature of adult learners. In what ways are these assumptions familiar? Can you identify them in your own learning experience?

Consider the outcomes of andragogical engagement as articulated by Knowles. Have you experienced these outcomes? Under which circumstances have you experienced them?

The role of teacher

Transformative educators are no longer mere technicians charged with administering educational commodities; nor are they guides through the predictable terrain of a curriculum. Instead they serve the roles of mediators and companions; they are enablers of students' self-determination and social emancipation. Some of the characteristics which this entails in practice include:

- Constantly challenging dominant paradigms and hidden sites of power by revealing and engaging the hidden curriculum (the sub-text of curricula discourses) as well as the null curriculum (perspectives which are disempowered or silenced by the dominant worldview);
- Supporting students' questioning of reality in ways that promote shifts in worldview;
- Acting as guardians and co-creators of an aesthetically supportive physical and subtle environmental space which supports transformation, care, and trust;
- Facilitating and modelling sensitive relationships towards and among students, for instance by transcending (or at least acknowledging and suspending) one's own prejudices and striving for complete understanding and empathy towards others;
- Mentoring students in the constant habit of reflexive self-criticality, especially through constant humility and self-reflection (including transformation of their own shadow);
- Situating discussion and learning in transformative context by situating the discourse in relation to personal, social, and biospherical challenges and concerns;
- Embodying a holistic orientation by locating, cultivating, and integrating the physical, mental, psychic, and spiritual in the learning process;
- Modelling characteristics of global citizenship deeply rooted in worldviews striving towards ethics for the human genre;
- Possessing complex and integrated views of reality;
- Cultivating awareness of educational alternatives.

Furthermore, Kincheloe (2005) suggests that teachers who take the role of critical educator are set apart by their capacity to understand:

- how knowledge is produced, certified, and hawked to the public (Abukhattala, 2004);
- the socio-cultural, political, and economic context in which schooling takes place;

- the skills and insights of scholar-teachers operating with a critical cosmological consciousness;
- the ways reductionism undermines the complexity and multiple perspectives which are a part of all curriculum development;
- the ways power wielders subtly shape what is allowed in the curriculum; and
- the different purposes that different educational institutions have pursued.

Think about a teacher who has had a significant positive effect on your life. What qualities did they possess which enabled them to contribute in this way? How do these qualities relate to the characteristics in the two bullet point lists above?

The role of student

The student encountering transformative learning is no longer a mere educational consumer, but rather a transdisciplinary explorer and transformative scholar-practitioner engaged in their own self-determination and the naming and transformation of their world. This implies that:

- students are (progressively) emancipated, enabling them to define reality on their own terms, rather than merely regurgitating social realities defined by cultural institutions and their representatives;
- students are ready and open for change;
- students with diverse (positive and negative) life experiences have an increased likelihood of cultivating transformation;
- students are willing to make self-reflection an integral part of their lives in multiple contexts;
- students strive for pertinent knowledge, courageously engaging the complex multiplicity of truths which encompass reality; and
- students have sufficient developmental maturity to take on the perspectives of others and cope with with their own shifts in paradigm.

Which of the above roles are familiar to you? Can you identify specific instances when you have been aware of them? How can you develop these capacities more?

The nature of the curriculum (content and activities)

The curriculum is no longer viewed as a formula or recipe which guides preparation for assessment as a preparation for certification or qualification; instead the curriculum provides a roadmap and transformative toolbox which enables teachers and students in relation to their newly defined roles. They should therefore include at least the following characteristics:

- transdisciplinarity;
- a focus on transformative critique, dialogue, and discourse;
- a constructivist approach to the design of learning engagements and instructional objectives;
- an attempt to encompass multiple perspectives and states of awareness;
- situating learning in relation to deep purpose and individual destiny;
- engagement of alternative paradigms of consciousness and healing, and exploration of perennial wisdom;
- transformative engagement with the context, the global, the multidimensional, and the complex (Morin, 1999);
- use of psycho-active tools and materials that naturally tend towards the material manifestation of transformation and integration (such as Scharmer's Theory U);

- physical movement and conscious embodiment;
- practices of dialogue and relating;
- the inclusion of art and other alternative approaches to assessment;
- integration of the physical (gross and subtle), mental, psychic, and spiritual;
- embodiment of the values of liberty and democracy, including the absence of coercion, punishment, and reward;
- opportunities to experiment with various roles within the learning community; and
- a focus on engendering respect, empathy, and collegiality.

Think of a learning occasion which you would characterise as being transformative in your own life. What characterised this occasion? How does your experience relate to the characteristics identified here?

11.3. Deschooling

- Deschooling
- Institutionalization
- The cult of the expert
- Commoditization
- Counterproductivity

Deschooling is a term popularized by philosopher and Roman Catholic priest Ivan Illich in his book *Deschooling Society* (1971). Illich became known for his incisive critique of education, medicine, and other areas of societal life, and has inspired numerous educators and academics to develop more transformative forms of education.

Institutionalization

Illich observed that we seem to be completely surrounded by institutions in the contemporary world. Schools are no exception. Illich believed that this process has potentially disastrous consequences and that people would be better off learning autonomously at a self-determined pace. He writes,

> This process [of institutionalized education] undermines people - it diminishes their confidence in themselves, and in their capacity to solve problems... It kills convivial relationships. Finally it colonizes life like a parasite or a cancer that kills creativity (Finger and Asún, 2001, p.10).

The power of the expert

Illich posited, particularly in his books *Disabling Professions* (1977) and *Medical Nemesis* (1975), that the increasing professionalization and the cult of the expert that prevails in many fields (the medical field was of particular interest to him) often results in more harm than good. They "obscure the political conditions that render society unhealthy; and they tend to expropriate the power of individuals

to heal themselves and to shape their environment (Illich, 1975)". This process has a number of elements, as identified by Finger and Asún (2001, p.10):

- The culture of experts has an insatiable appetite for more experts;
- Expert culture is highly insulated by institutional barricades. Experts, for instance, often proclaim themselves as gatekeepers of their expert field whilst simultaneously self-selecting themselves;
- Finally, expert culture limits access to knowledge by attempting to control definitions, acquisition, and production of knowledge.

Commoditisation

Illich argued that one of the inevitable results of professionalization and institutionalization is that processes (such as learning) become commodities (education). And where there are commodities there is scarcity. He writes,

> Schooling - the production of knowledge, the marketing of knowledge, which is what the school amounts to, draws society into the trap of thinking that knowledge is hygienic, pure, respectable, deodorized, produced by human heads and amassed in stock..... [B]y making school compulsory, [people] are schooled to believe that the self-taught individual is to be discriminated against; that learning and the growth of cognitive capacity, require a process of consumption of services presented in an industrial, a planned, a professional form;... that learning is a thing rather than an activity. A thing that can be amassed and measured, the possession of which is a measure of the productivity of the individual within the society. That is, of his social value (quoted by Gajardo, 1994, p.715).

Counterproductivity

Illich believed that once organizations reach a certain level of institutionalization they can become counterproductive. That is to say, hospitals can make people sick, and schools can make people stupid. A more convivial alternative is needed. Illich writes,

> I believe that a desirable future depends on our deliberately choosing a life of action over a life of consumption, on our engendering a lifestyle which will enable us to be spontaneous, independent, yet related to each other, rather than maintaining a lifestyle which only allows us to make and unmake, produce and consume – a style of life which is merely a way station on the road to the depletion and pollution of the environment.

> The future depends more upon our choice of institutions which support a life of action than on our developing new ideologies and technologies (Illich, 1973, p.57).

Consider Illich's notion of counterproductivity in which, for instance, hospitals can make people sick and schools can make them stupid. Can you think of examples from your own experience when you have encountered counterproductivity?

The notion that education has become commoditized is discussed by a number of experts in a dialogue entitled 'McEducation for All' (http://www.swaraj.org/shikshantar/mceducationforall.htm); read this dialogue in order to gain further insight into the issue. Why is this phenomenon problematic? What positive role can you play to counter and overcome the negative effects of commoditization?

What can you do to facilitate the development of a learning environment in which the teacher-student dichotomy is broken down and we are able to overcome our attachment to the cult of the expert?

ENCOUNTERING TRANSFORMATIVE TOOLS

12

Tools for creative problem solving

- Mind map
- Tony Buzan
- Quadrant Dynamics: Thwarting & Supporting (Q-Dyts)
- Edward De Bono
- Lateral Thinking
- Six thinking hats

12.1. Mind mapping

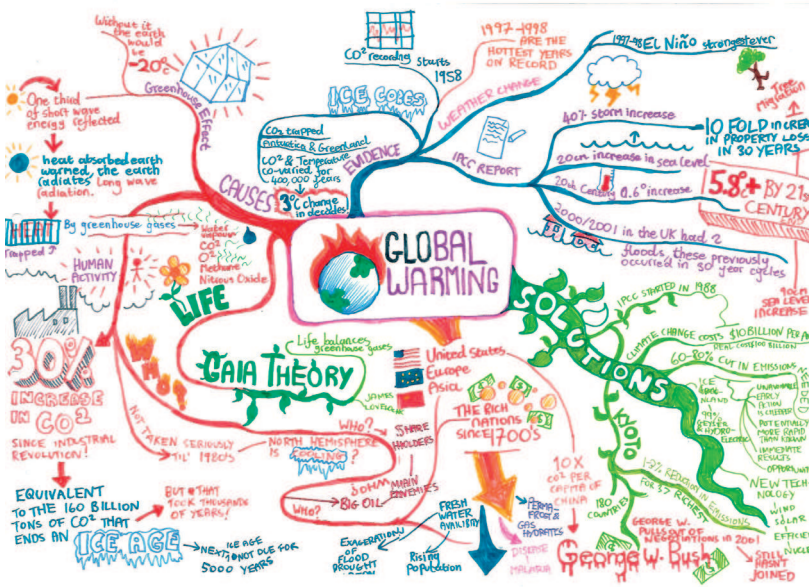


Figure 36: An example of a mind map

Mind mapping is an approach to graphically represent ideas and concepts, which was originally introduced by the British memory expert, Tony Buzan (Buzan, 1974; Buzan & Buzan, 1993; Buzan & Griffiths, 2010). This approach graphically connects pictures, numbers, words, logic, systems, colours etc. to represent ideas and concepts in a way that optimally integrates brain hemispheric function (see McGilchrist, 2012). It quite literally maps the mind in relation to a particular context. As such, mind mapping serves as a visual thinking tool that effectively structures information so as to be better equipped to analyse, synthesize, recall, and generate new ideas. Some possible uses of mind mapping include:

- Documenting brainstorming;
- Developing design frameworks;
- Representing structures and relationships;
- Condensing information into a concise and memorable format;
- Collecting, summarizing, consolidating, and presenting data;
- Team building (collaboration);
- Enhancing clarity of thinking;
- Understanding complex problems;
- Supporting creative problem solving;
- Generating new ideas; and
- Drawing correlations between multiple factors.

A mind map is constructed by starting with a central theme which is placed at the centre of the page. Related ideas can then be connected using branches to the central theme. It is possible to create multiple levels of information through using each subsequent level as the inspiration for further ideas. Wherever possible it is advisable to use colour and pictures rather than relying on words, as these tools can greatly assist recall. Mind maps can be created using pen and paper, but multiple software solutions also exist for this purpose.

Use the space below to create your own mind map about a topic which is important to you. If a topic does not come readily to mind you can use the space to summarize a section of this book which is meaningful to you. Use an additional sheet of paper if you prefer.

12.2. Quadrant dynamics: Thwarting and supporting (QDyTS)

Q-DyTS stands for 'Quadrant Dynamics: Thwarting and Supporting'. This problem solving process is based upon the work of Cameron Owens, Sean Esbjörn-Hargens, and Barrett Brown (see Brown, 2011). This approach builds upon Wilber's four quadrants (discussed in the section on 'Integral Studies' in the present volume). You can use this process by following the steps outlined below:

1. Draw a large quadrant diagram with a specific initiative or issue in the middle. The diagram should be large enough to write 4-6 items in each quadrant.
2. Respond to the following questions with reference to the issue or initiative that you have identified.

Upper Left Quadrant	
Intelligence: Mental model, worldview, cognitive intelligence, emotional intelligence, psychological dynamics like shadow issues, general knowledge about any topic, capabilities of any type, needs, values, morals, level of ego-development, level of emotional development, aesthetic development, etc.	• Consider the key stakeholders involved in this initiative (including yourself): what aspects of their intelligence support the ultimate success of this initiative? • What aspects of their intelligence seem to thwart, or work against, the ultimate success of this initiative?
Experience: Thoughts, beliefs, emotions, sense of aesthetics, sense of place, spiritual experience, etc.	• With respect to experience, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?

Upper Right Quadrant	
Body: Physical body – its health, strength, energy level, and overall functioning.	• With respect to the status of the physical body, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?
Behaviour: Movements, actions, skilful means; what an individual actually does, skilfully or not.	• With respect to behaviour, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?
Lower Left Quadrant	
Culture: Family, organizational, regional, or larger social culture; approximate level of shared worldview (i.e., magic, mythic, rational or traditional, modern, postmodern); cultural norms and mores; shared vision; relationships between people; relationship between an individual and an organization or place; etc.	• With respect to culture, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?
Communication: Language; stories; symbolism; degree of mutual understanding; type of communication used (auditory, visual, kinaesthetic, multi-media based, developmentally-appropriate, etc.)	• With respect to communication, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?

Lower Right Quadrant	
Systems and Structures: Ecosystems, social systems and their infrastructures in general; economic systems, governance systems, technological systems, political systems, transportation systems, manufacturing systems, information systems; incentive and pay systems; strategies; policies; work processes, etc.	• With respect to systems and structures, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?
Shared Actions: What groups do together, collectively, such as voting for a particular candidate, consuming a certain item, migrate, recreate at the beach or mountains, etc.	• With respect to shared actions, what are the supporting forces amongst key stakeholders? • What are the thwarting forces amongst key stakeholders?

Table 28: Thwarting and supporting questions for each quadrant

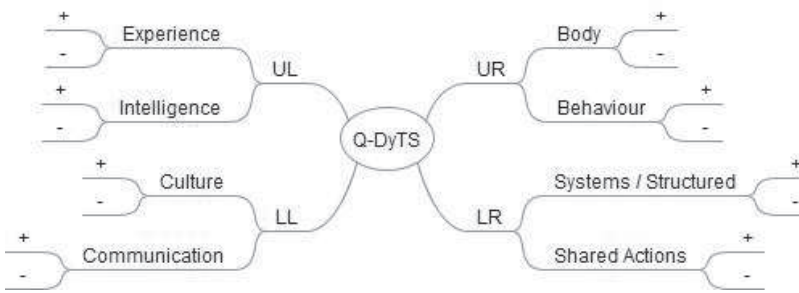


Figure 37: Basic design of the Q-DyTS process

3. Code the forces you identified when answering these questions according to whether:
   a. You have total or near total control over it. (Code: C)
   b. You can influence it. (Code: I)
   c. You seem to have no control whatsoever over it. (Code: NC)

4. Of the supporting forces that you can either control (C) or have influence over (I), choose the two most influential from each quadrant.
5. Repeat for the thwarting forces. You should now have 16 forces identified at this point, 8 which support, 8 which thwart, and all of which you can either control or have some influence over.
6. Do a final scan of all the forces you identified over which you have no control (NC). Identify the two most influential supporting forces and the two most influential thwarting forces. These can come from any quadrant. You should now have a total of four major uncontrollable influences on your initiative.
7. You should by now have identified a total of 20 factors. Return to your original quadrant diagram from the first step. Write those 20 forces into the diagram in their associated quadrants. Be sure to keep the codes (C, I, NC) with them as you make this transfer.
8. Take a moment and breathe deeply. Try to relax your body and let go of your attachment to the exercise. When you return, start brainstorming around possible solutions or ways to move forward related to each of the points. Engage your logic as well as your intuition. Make a note of ideas which arise.
9. Design an action plan to advance your initiative which builds upon the forces that support the initiative and responds to the forces that thwart it.

Use the space provided below to create your own Q-DyTS Analysis. You can answer questions on additional pages.

12.3. Six thinking hats

Edward De Bono is well-known for first coining the term 'lateral thinking' (De Bono, 1967). For more than four decades, he advocated that thinking skills should be an essential part of what universities and schools should teach. He devised a wide range of specific tools that can be used to develop these types of skills and effectively integrate them into a wide range of contexts. One of the most popular and effective tools that he created are the "six thinking hats" (De Bono, 1999). This is a creative problem solving tool which requires engagement with each of the following perspectives (i.e. trying on each of the following hats):

	The **white hat** deals exclusively with objective data. The **white hat** calls for the factual information known or needed.
	The **red hat** operates from the position of feelings, hunches and intuition. The **red hat** is motivated by emotion and does not rely on explanation.
	The **yellow hat** symbolizes brightness and optimism. The **yellow hat** explores ideas from the perspective of benefit and value.
	The **black hat** symbolizes caution and critical thinking. The **black hat** examines the reasons why something might not work. It should not be overused.
	The **green hat** symbolizes creativity, alternatives, and new ideas. The **green hat** provides us with an opportunity to think laterally and venture beyond the box.
	The **blue hat** serves an integrative executive function and oversees the thinking process. The **blue hat** identifies each of the hats and ensures that guidelines concerning their use are adhered to.

Table 29: Six thinking hats

Use the space provided below to create your own six thinking hats analysis.

 white	
 red	
 yellow	

 black	
 green	
 blue	

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