Educating for humanity and the holistic principle: A paradigm for 21st century schooling and early childhood education. A gathering of voices.

Neil William Tucker

A thesis submitted for the degree of Doctor of Philosophy, School of Education (FEDUA), University of Newcastle
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Title page

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Neil William Tucker BA Dip Ed (Adelaide); BD (Melbourne); MA (Educ) (London); MBA (Exec) (Monash Mt. Eliza); Gr Dip Psych and Couns (JNI); FAIM

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, School of Education (FEDUA), University of Newcastle

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Declaration

I declare that I am the sole author of the thesis, which is original. It contains no material which I have submitted for the award of any other degree or diploma in any university or other tertiary institution. To the best of my intention, knowledge and belief, it contains no material previously published or written by another person, except where reference has been made in the text.

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Abstract

The UNESCO International Commission (1972) declared that the ultimate aim of schooling and lifelong education is the education of “the complete man” (sic) (Faure, in UNESCO, p.vi), who is physically, intellectually, emotionally and ethically integrated (p.156), and who participates responsibly in human destiny (Faure, in UNESCO, p.xxv, p.xxxix). The title of the Commission Report is “Learning to be”.

The thesis tests the UNESCO (1972) proposition for early childhood education and schooling internationally. It identifies particular elements in the proposition requiring conceptual investigation: Aims for education, human ‘being’, human learning, human integration and completeness, and human participation in the world. The Chapters of the thesis examine each of these elements by conducting textual analysis of the diverse scholarly and professional documents which inform 21st century early childhood education and schooling.

In response to the UNESCO (1972) proposition and the linguistic landscape of educational documents, the thesis offers a paradigm conceived in ‘whole’ and ‘holistic’ terms. The thesis accepts the UNESCO ideology of an ultimate aim for education, and of striving for human completeness and integration, but reframes each of these concepts.

The ultimate aim of education is conceived in terms of ‘educating for humanity’ (Seymour, 2004). Human ‘completeness’ and integration of physical, intellectual emotional and ethical ‘dimensions’ are conceived in terms of human ‘wholeness’

and integration of ‘domains’ of both human nature and learning. These are extended to include aesthetic, social and spiritual domains. The domains of learning are conceived as corresponding to domains of human nature. The thesis offers a paradigm of a ‘holistic principle’ linking these concepts of whole child and holistic learning with a concept of whole world.

The UNESCO Commission (1972) offered a vision to the world of education which is still current (Bokova, in UNESCO, 2015). The thesis responds to that vision by constructing a conceptual mosaic from the diverse landscape of contemporary educational theory, research and practice. It gathers consonant voices in extensive quotation to articulate how 21st century early childhood education and schooling can aim to ‘educate for humanity’.

INTRODUCTION

Educating "the whole child for the whole world" (Suarez-Orozco & Sattin-Barjaj (2010, p.3)

0.1 Thesis proposition

The thesis tests the proposition of the International Commission of UNESCO (1972) that "the ultimate aim of education" is "educating the complete man" (sic) (p.vi). *"The physical, intellectual, emotional and ethical integration of the individual into a complete man is a broad definition of the fundamental aim for education"* (sic) (p.156). Faure, the Commission Chair, says: "The aim of education is to enable man to be himself, to 'become himself' (sic)" (in UNESCO, p.xxxi.).

The UNESCO Commission Report (1972) did not develop the concept of complete human being beyond the initial definition nor provide an explicit conceptual supporting platform to work towards its realization. The Commission invited nation states to respond to its vision (pp.vi-vii). The thesis research has not identified a nation which has done so. The thesis seeks to provide such a platform.

"The spirit" of the UNESCO (1972) vision is still current (Bokova, in UNESCO, 2015, p.3). Bokova sees a renewed "humanist vision of education as an essential common good" in a changing world (ibid., p.3). The UNESCO ideology is nonetheless referred to in only a few of the education documents sourced by the

thesis (in particular Elfert, 2015, 2019) – whether from theory, school authorities, pedagogies or individual schools.[1]

The thesis accepts the ideology of the UNESCO (1972) vision, that education, in some fundamental sense, is about educating each human being to participate fully in the human world. The implicit personal and professional perspective of the researcher is that whatever else the world of educational enterprise and its agencies of schooling and early childhood education are about, they are fundamentally concerned with the learning and development of individual human beings as members of collective humanity.

The thesis response to the vision of UNESCO (1972) of a fundamental aim for education is conceived in terms of 'educating for humanity'. The thesis proposition is that the ultimate aim of education, and therefore for schooling and early childhood education, is to develop whole human individuals through holistic learning such that they participate in the human world in ways that in turn contribute to its wholeness.[2] The concepts of whole child, holistic learning and whole world are linked in a conceptual paradigm termed by the thesis 'the holistic principle'. A holistic principle also governs the universe (Chapter Six). The paradigm is illustrated at Figure 1.

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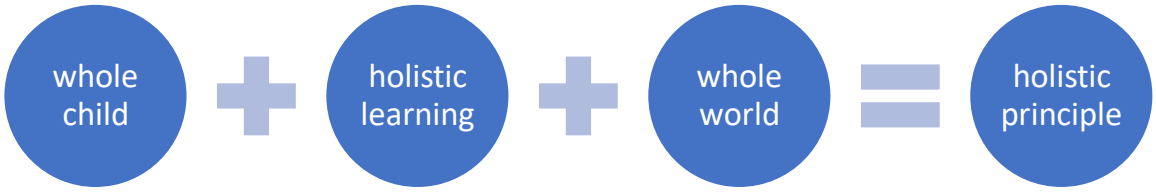
[1] The international concerns of schooling – literacy and numeracy, poverty, environment, inequity, health - are discussed in OECD (2019a), United Nations (2015).

[2] The thesis seeks, wherever practicable, to differentiate the terms "education" and "schooling" but there is idiomatic overlap in their use in educational parlance.

Figure 1 A holistic paradigm



0.2 Conceptual elements and structure of the thesis

The statements of educational aim of the UNESCO Report (1972) are couched in particular language: “Complete”, “self” and “being” (p.vi, p.xxxi). The concept of human completeness UNESCO suggests requires the development of four dimensions of human being - physical, intellectual, emotional, ethical – such that they are (somehow) integrated - made into a whole (p.156). Human complete development is associated with or results in responsible participation in the world (pp.xxv, xxxix,153, 154, 158). The complete human being is one who has an idea of self, reconciled with fate (p.154). The term ‘human being’ and the title of the Report, *Learning to be,* convey a profound existential sense of human development, and of human learning.

The UNESCO (1972) vision for education is individual, social, and universal. The definition of the aim of education is in terms of individual “man” p.vi) or human being. The concept is situated in a discussion of goals (Chapter 6) referring to “a new world” (p.153), nations sharing “a common humanity” (p.153), and education moving “children into a coherent moral, intellectual and affective universe”, with

conceptions of the future (p.150). The Commission wants individuals to “come to a full realization” of their “social dimensions” through active participation (p.151). The Commission refers to “a spirit of social responsibility” (p158). It wants individuals to feel they belong “to the entire species” (p.xxxix).

The UNESCO Commission (1972) wants “A new man for a new world!” (p.153). The Report discusses “education and man’s destiny” and the role of education in making the world “a better place” (Preamble, p.xix). The future of mankind is in danger (p.xxi), even “finite” (p.xxxix). “The new man” must be able to understand “the global consequences of individual behaviour” and accept “his share of the joint responsibility involved in the destiny of the human race” (p.xxv). The Report refers to a change in the scientific “content of the universe” (p.147), influencing man’s perception of the universe, and man taking responsibility for the “processes of nature” (p.154).

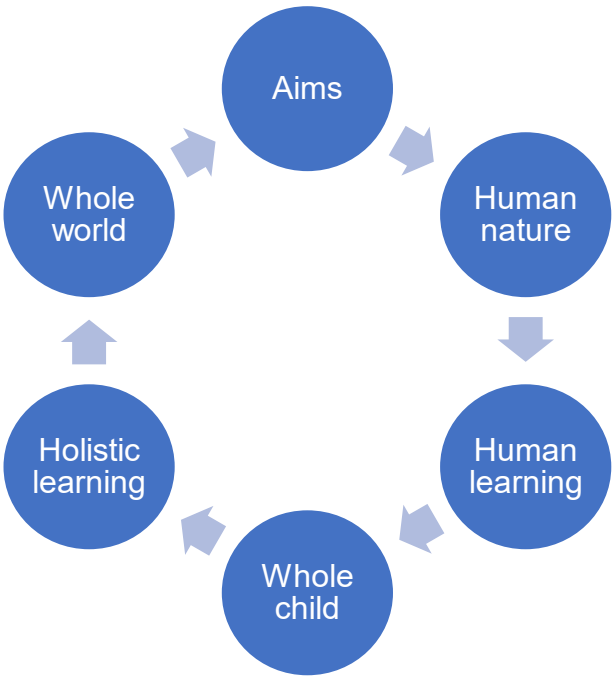
The thesis tests the conceptual elements of the UNESCO (1972) proposition, its definition and language. It conducts textual analysis of documents from multiple sources - national policies, education authorities, pedagogies, schools and scholars – to identify the presence and language of:

- Statements of the aims of education, particularly concepts of aims in terms of human development and learning (Chapter One)
- Concepts of human nature and human being (Chapter Two)
- Concepts of human learning (Chapter Three)

- Concepts of wholeness of individual human beings presented in terms such as physical, intellectual, emotional, ethical dimensions and their integration (Chapter Four)
- Concepts of holistic learning corresponding to these physical, intellectual, emotional and ethical dimensions (Chapter Five)
- Concepts of the human universe and human existential participation in it (Chapter Six)

The thesis structure is represented at Figure 2.

Figure 2 The Thesis structure



The thesis reframes particular linguistic aspects of the UNESCO (1972) proposition. ‘Man’ becomes ‘human being’. ‘Complete’ becomes ‘whole’. ‘Dimensions’ becomes ‘domains’ of both human nature and human learning. These

domains are extended to include aesthetic, social and spiritual-nature affinity domains. The concept of their integration is retained. The thesis adds the concept of their interconnection. The concept of a universe or new world which is a better place, in consequence of changes in human behaviour towards it, is described as 'whole world'.

UNESCO (1972) makes further use of the term 'whole' which Faure says the Report could not pursue (p.xxxviii). Faure (in UNESCO, 1972) refers to the "extrinsic" educational functions of social structures – the "whole range of family, vocational and urban relationships, … social groups and … spiritual communities" which "together make up a whole" and "are inseparable from each other" in human development (pp.xxxviii-xxxix). The thesis does not pursue in detail these informal educational influences. It accepts their inseparability and includes them in the contextual models of whole child and holistic learning offered in Chapters Four and Five. These contextual influences are complementary to psychological, individual models of human wholeness conceived in terms similar to The Commission's "physical, intellectual, emotional, ethical" aspects of human being (p.156).

The UNESCO Commission (1972) refers to lifelong education (pp.142-3) and the learning society (pp.160-5; Faure, p.xxxiii). Faure says lifelong education is the only way to produce the kind of "complete man" he has in mind (p.vi). Each individual will need to learn how to build evolving knowledge through life (p.vi). The thesis considers lifelong learning in Chapter Three, but does not equate it with

“learning to be” or an aspect of it as Faure seems to do here (p.vi). The concept of a learning society is beyond the scope of the thesis (Chapter Three, Introduction).

Other aspects of The Commission’s Report – creativity, the role of the humanities and artistic education, brain research, technology, the natural environment – will be discussed in the course of the thesis (Chapters Two and Five particularly).

0.3 Assumptions and practical perspectives

The argument of the thesis is based on three assumptions.

The first assumption follows the Commission’s declaration that there is an ultimate aim for education conceived in terms of complete human being. Ultimate or fundamental aims for education are distinguished from functional, devolved aims for education provided by each nation according to their contexts (UNESCO,1972, p.145). Ultimate aims for schooling and early childhood education are based on and derive from articulated concepts of children, learning, and the human world. The thesis seeks to offer these concepts.

Gergen (in Steffe & Gale, 2012) sees it as axiomatic that educational practice derives from concepts of human being.

> The practices of education must proceed on the basis of preliminary beliefs about the nature of human beings, their capacities, and their relationship with the world and with each other (p.17).

Gergen also observes however, that no actions of educational practice necessarily

follow from a particular theory (p.30). Axiomatic or not, the thesis research has found that prior articulation of such beliefs is uncommon across educational practice.

The second assumption, also following Faure and the Commission (UNESCO, 1972, p.xxxvi, p.19, p.23; Bokova, in UNESCO, 2015), is that reconception of the aims of schooling and early childhood education is timely and has international relevance. This is so, notwithstanding the differing needs, emphases and ideologies of individual countries, educational authorities and schools. The thesis paradigm for 21st century education offers such a reconception. It demonstrates there is substantial agreement for a holistic concept of education among the diverse voices contributing to educational theory and practice worldwide.

The third assumption, derived from the thesis research, is that holistic concepts and terms - whole child, holistic learning and holistic education - are nonetheless not articulated consistently in educational discourse. The terms are used most frequently in literature from the United States of America – particularly by the ASCD[3] and in the writings of Ron Miller and John Miller since 1988 (Chapter Six). They are also used in some early childhood education documents, and by individual schools. The use of the terms holistic or interconnected to describe the operation of the natural universe is epistemically widespread (Chapter Six). A principle of holistic learning has some recognition in scholarly and professional

[3] ASCD is the name of the organisation. ASCD is no longer an acronym.

discourse, but there is not yet an integrated concept of holistic learning such as that developed in Chapter Five.

Three additional perspectives affect the lens through which the thesis argument is framed: A prevailing distinction between early childhood education and schooling, aims and practices proposed by individual schools, and the use of the term ‘pedagogy’ to refer to concepts and practices of teaching and learning.

Early childhood education - whether from birth to 8 years (or more commonly 3-6 years) is typically provided for internationally by different documents and organisational structures from those which frame the conception and practice of schooling for students aged 6-18 years. The aims for each are conceived differently. The aims and concepts of early childhood education will be presented particularly in the review of aims for education in Chapter One and the concepts of whole child and holistic learning in Chapters Four and Five.

The practice of schooling worldwide, for students of 6-18 years, is commonly structured in Grades or Year groups termed K-12 or similar. Schooling practice is dominantly concerned with a prescribed curriculum, content and skills learning, literacy and numeracy measures, and measures of subject (discipline) based academic achievement, anticipating employment placement and/or tertiary entry. Some education authorities, international pedagogies and individual schools wish, in addition, to encourage students’ development of personal attributes and interests: Sport, the arts, community service, the natural environment. Their public

statements affirm their intent. The thesis is particularly concerned to example the education statements conceived in terms of aims, students' learning and development, and students' place in the world. There are individual schools, both private and public, which articulate their educational vision and mission in this way.

The term pedagogy is commonly used to refer to the mode of teaching and learning and the interaction of teachers and students. The term is also commonly used to refer to specific modes of teaching and learning – Steiner-Waldorf education, Montessori education and the International Baccalaureate (IB). These are discussed particularly in Chapter One, but also inform the holistic paradigm developed in Chapters Four to Six. Both Steiner and Montessori education are based on explicit concepts of children and learning where the deliberate pedagogy is consequential. The IB offers an explicit concept of learning and teaching, but is not based on a developed concept of human nature.

The thesis does not develop a paradigm of pedagogy to accompany its argument. It articulates a holistic principle and conceptual paradigm on which any accompanying or derivative pedagogies may be developed. The thesis hopes to prompt such development. The perspective of the thesis is that the most common pedagogical arrangements occurring in schools will need major review, once the fundamental aim(s) for early childhood education and schooling is (are) newly conceived.

0.4 Theoretical perspectives

The thesis draws on all of the epistemologies commonly informing 21st century educational theory and practice: Philosophy, psychology, sociology, neuroscience, and ecology. It draws on a number of specific theoretical perspectives to inform its methodology and the development of its argument as a contribution to knowledge: Constructivism, holism, and ontology. Theoretical perspectives influencing the thesis methodology are discussed at Section 0.5.

Constructivism

The theory of knowledge and learning consonant with the approach and lens of the thesis, providing an alignment of its ontology, epistemology and methodology, is that which is generally known as constructivist theory or a constructivist approach (von Glasersfeld, 1995a; Phillips, 2000; Utanir, 2012). The thesis presumes that children learn and acquire knowledge and meaning by a constant complex process of building and assimilating new experience from their external worlds. The thesis constructs an argument from multiple sources, many of which offer a constructivist view of school education and human learning. The dominant concepts informing education (Chapters Two and Three) and theories of humanity are constructs: Mind, learning, intelligence, creativity, and spirituality.

Ultanir (2012) avers that constructivism is an epistemology, a learning or meaning making theory offering an explanation of the nature of knowledge and how human beings learn. Phillips (2000) acknowledges that there are many different themes in contemporary constructivism, particularly psychological and sociological

perspectives. He declares *the overwhelming consensus of the twentieth century is that knowledge is constructed* (p.viii) [Italics added]. The knower is a member of a sociocultural group from which he/she draws innumerable resources (p.viii).

von Glasersfeld (1995a)[4] attributes the constructivist theory of knowing to Piaget, and his theory of cognitive development in children (p.6). A constructivist approach constructs conceptual knowledge: Individuals create their own meaning of the world through self-regulation, reflection and abstraction (p.14). Steffe and Gale (2012) include discussions of social constructivism and radical constructivism. They attribute derivative theory of social constructivism to Vygotsky and his emphasis that cognitive development and learning about the world occurs largely in social, cultural contexts. Bada (2015) sees the focus on student-centred learning as the most important contribution of constructivist theory. Each of these nuances of how human beings learn, in social contexts and with self-regulation informs the thesis.

Holism

Chapter Six in particular explores the concept of holism, its origins and broad contemporary epistemic currency. Laura and Cotton (1999, p.149) attribute the modern use of the term 'holism' to Smuts (1926/1973). They say Smuts explains holism and holistic as the underlying dynamic, creative, tendency of nature. "The character of 'wholeness' (sic) … meets us everywhere and points to something

[4] See also von Glasersfeld (1995b).

fundamental in the universe" (p.149). Nature is interested in "whole making" (p.149). Laura and Cotton perceive the interconnectedness of the different (but not separate) human capacities of body and mind in each child and human being, and of each human being and child with all of nature, and of the different bodies of knowledge inviting epistemic holism, as existential principles. Recent developments in the philosophy of science, postulating a (whole) quantum universe, suggest that "participation in nature becomes a pivotal concept for *epistemic holism* and offers a new paradigm of ecological empathy" (p.4). The thesis discusses empathy at Sections 3.2.3 and 5.2.5 particularly.

Ontology

"Ontology as traditionally understood is the science or study of being" (Lawson, 2013, p.1). The UNESCO Report (1972) was conceived in terms of "learning to be". The thesis reflects the researcher's ontology - with respect to the nature of the world of human experience, and human participation in it. Human beings are part of and responsible to the human universe. The holistic principle of the nature of the universe (Chapter Six) expresses an ontological view of human existence.

0.5 Methodology

The methodology of the research was informed by two theoretical approaches to the analysis of concepts and language use: Conceptual analysis and discourse analysis. The research did not identify a common conception nor universally agreed definition of either approach as a research mode. The two theories are best

seen as fluid organising principles for the thesis research method and its process. A brief outline is given below of each theory and its contribution to the research.

Conceptual analysis[5]

Kosteric (2016) refers to the "semantic jungle behind the uses of CA" (conceptual analysis) (p.220). Laurence and Margolis (2003) see conceptual analysis as undergoing a revival in philosophy (Abstract), but it is still divisive in contemporary philosophy (Margolis & Laurence 2019, Section 5). Kipper (2013) defends it as a viable philosophical method (p.9). Horvath (2018) suggests it continues as a guide for philosophical research (Summary).

The discourse of conceptual analysis contains various distinctions. Colorado State University (Writing Guides, 2019) distinguishes between content, conceptual (thematic) and relational analysis and offers these explanations. Content analysis "determines the presence of certain words or concepts within texts or sets of texts" (para. 1). Conceptual analysis chooses particular concepts based on research questions and codes and quantifies their presence (para. 1, citing Carley, 1992).[6] The researcher may also simply wish to examine the presence of words with respect to the research question (para. 3). Relational analysis goes beyond the

[5] Beaney (in Zalta, 2014) sums the philosophic tradition of analysis. He is not persuaded that conceptual analysis is characteristic of analytic philosophy (Conclusion).

[6] Carley (1992, 1993) provides eight steps for the coding and quantification of the presence of concepts in texts.

identification of presence to explore the semantic and other relationships between the concepts identified (para. 3).

Carley (1993) distinguishes content analysis and “map analysis” as procedures for coding and understanding texts (p.75). Map analysis includes both content and relationship analysis (pp.77-9). It “allows the researcher to address textual meaning” (p.77), to focus on “situated concepts” (p.79). Map analysis refers “to a broad class of procedures in which the focus is on networks consisting of connected concepts rather than the counts of concepts” (p.78). The terms map, connected, relationship, and networks are particularly relevant to the conceptual approach of the thesis.

A point of difference of the thesis method to this version of conceptual analysis is that the thesis does not quantify nor code the presence of particular words or groups of terms. The thesis research method identifies the presence of and quotes particular terms or phrases (and synonyms) in multiple diverse documents as a basis for discussion. It is the conceptual terms – the language and voice of the statements - that are of importance to the thesis argument.

Kosteric (2016) distinguishes three methods of conceptual analysis (CA): constructive, detection and reductive. He sees each of them as aimed at “gaining better knowledge of the language” used (p.221). “The aim of conceptual analysis is to examine the place of a concept in the conceptual network of a language or theory” (p. 220, Footnote). Kosteric explains constructive analysis as broadening

conceptual theory by “postulating a new relation … among previously unrelated parts of language” and by introducing new terms or concepts “lacking in the initial explicit conceptual theory” (pp.221-2). Kipper (2013) proposes a two dimensional approach to conceptual analysis: The process or activity of analysing concepts (which is his focus), and an intended result or definition. The two may go together.

The research method implicit in the thesis entails analyses and syntheses of central concepts and terms. It engages in content, relational and conceptual (thematic) analysis to identify and examine particular common concepts in the scholarly and professional language of education. It accepts the principle of conceptual analysis offered by Kipper (2013) of a two dimensional approach of an analytical process with an intended result. It also accepts the principle of conceptual analysis proposed by Kosteric (2016) to gain better knowledge of the language used. It pursues a method close to the constructive method he describes. The thesis pursues a problem. It seeks to create an explicit relationship between concepts and add to conceptual theory. It follows broadly Kosteric’s model of method by specifying the conceptual landscape, formulating the conceptual problem and stating the new conceptual relation. It tests the new paradigm against the conceptual landscape.

Discourse analysis

Wood and Kroger (2000) acknowledge “the multiple versions of discourse analysis” (p.3). Wetherell, Taylor and Yates (2001) see discourse analysis (DA) research as

a “composite of traditions” (p.10). El-Sharkawy (2017) describes DA as a “broad field”, with ‘discourse’ (sic) being “used in several ways” (p.8).

El-Sharkawy (2017) distinguishes two paradigms for the use of the term discourse, namely, structural and functional (p.8). The functionalist paradigm views discourse as language use in contexts. Discourse is both spoken and written (p.9). He refers to a different emphasis by Foucault (1972). He says (citing Hall, 1981, p.291) that ‘discourse’ for Foucault means “a group of statements which provide a language” for talking about or representing the knowledge about a particular topic. Discourse constructs the topic and influences its practice (p.10). He refers to communication between different texts, resources and disciplines (pp.31, 35).

Wood and Kroger (2000) situate discourse analysis in the shift in perspectives of the philosophies of psychology and language to embrace the social sciences in the 1980s. Language was recognised as uniquely human. The biological ground of human nature was explored and the conceptual framework underlying inquiry into human behaviour changed (pp.x, xiv). They offer this concept of DA:

> Discourse analysis is a perspective on social life that contains both methodological and conceptual elements. Discourse analysis involves ways of thinking about discourse (theoretical and metatheoretical elements) and ways of treating discourse as data (methodological elements) (p.3).

DA, as a research method, has been particularly applied to spoken text – to oral language use (Paltridge, 2000). Titscher, Meyer, Wodak and Vetter (2000), and

Wetherell, Taylor and Yates (2001) discuss its application to the data of both spoken and written text. Titscher and his colleagues (2000) say a ‘method’ (sic) normally denotes research pathways from a researcher’s standpoint or from theoretical assumptions or from a point allowing observation and collection of data (p.5). The route is usually a theoretical approach with assumptions expressed in the form of research questions. The strategy may explore and explain a field, or explore it by testing hypotheses (p.7). Investigative processes to do this require heuristic or interpretive procedures with a goal to clarify concepts (p.8).

The thesis adopts the above broad principles. It uses the term ’discourse’ to refer to the broad field of written statements – of language - about education. It treats these as the data for the thesis. It acknowledges contexts of language use. It pursues an interdisciplinary approach.

Critical Discourse Analysis (CDA) (Elsharkawy, 2017, Van Dijk, 2015) was also considered, but its focus and methods are tangential to the research argument. CDA emphasises the social conditions of production and interpretation (El-Sharkawy, 2017, p.10), social inequality (Van Dijk, 2015), and the interrelationship of language, power sources and structures, the ideology and conventions of text (Machin and Mayer (2012, p.4). These perspectives affect the linguistic landscape of the thesis, but are not the concern of the thesis argument and method.

Thesis research method, 'voice' and language style

The practical research method of the thesis was to explore the diverse landscape of educational discourse and identify the dominant concepts contributing to the research proposition: The purposes of schooling, human nature and learning, whole child education, holistic learning, and universal holism. These concepts are explored in multiple writings - hard copy and web derived - from professional and theoretical educational contexts and epistemologies contributing to them. The language in which the concepts are expressed became the data for the thesis argument. By analysis and synthesis of the language, the thesis method became a 'gathering of voices'. The thesis quotes extensively, both to retain some fidelity to the original sources, and to demonstrate their coherence and harmony (Brenchley, 2018).

The phrase 'gathering of voices' featured in the banner for a Conference in Brisbane (2001) on Aboriginal Spirituality: *Gathering of Voices*. The term 'voice' is used in music, in literary criticism, in social activist and in educational contexts. "In education, the term 'voice' refers to the values, opinions, beliefs, perspectives and cultural backgrounds of the people in a district, school, or school community" (*The Glossary of Education Reform*, 2014). The thesis constructs its argument from these varied voices.

The thesis method and style of writing was influenced by one further theoretical perspective. The conventional genre of writing required of academic theses is what James Britton (1970) calls "transactional language" (pp.167, 174). It is a form of

public language, accessible by anyone. It focuses on cognitive, informational processes. It is the language of theory. It invites readers to segment, contextualise, and apply the language to their existing frames of reference. The thesis is written in this way. It intends to be as accessible and readable as possible, leading the reader through the argument, rather than continually requiring a discovery learning approach. The footnotes provide material contingent to the argument.

However, Britton (1970) contrasts the traditional transactional genre of explanatory language with “poetic language”. This is also essential to the thesis and its central argument. Poetic language interweaves the relations within constructs into wholes: Poetic language is the language of being and becoming (pp.174-6). While thesis convention limits its use, it will be found in many of the quotations conceiving education in ideological and ontological human terms. It is suggested in the stories below.

0.6 Stories

These three stories illustrate the thesis conception and intent. The third story, experienced during the thesis research, captures the heart of the thesis.

I sat at the rear of a classroom observing a lesson to Year 6 students conducted by a student teacher. The lesson included physical movement, video and interactive whiteboard, student groups and teacher questioning. One male student had his head down in his hands or seemed to be staring at the ceiling for most of the lesson. The bell rang and students left for a music lesson. Although the school kept

all curriculum in each subject on a database accessible by all teachers, the music teacher had no knowledge of the preceding lesson, its impact on students, and any relation the new music lesson would have to the learning just occurring. “Why do we still do it (schooling, learning) this way?” I asked myself.

Every day, in one particular Steiner school, began with all age groups gathered in the wooden Hall for unaccompanied singing in parts. One particular day, the Kindergarten and Year One class remained in the Hall after singing to dance and move to music and make ‘w’ sound gestures, feeling the letter ‘w’ for wind, waves, wool and other ‘w’ words in their bodies and imaginations, becoming the letters and sounds. The Year Three class in main lesson was studying Elizabethan history. A coloured chalk drawing of the main characters and events was being developed on the blackboard as the story progressed. The teacher played songs on lute and guitar, while students played other songs on recorders and drums. Students wrote and painted in their story development books. At lunch, the school gathered together in the sun to eat soup, bread and fruits prepared from a seasonal harvest of the school gardens. The following day the school went together on a nature walk. Each older student was responsible for a young child.

I visited a school in the USA, seeing both lower and upper school campuses. I had asked to meet and talk with some students from across the school. As I walked along the path between the Dining Hall and the Upper School Buildings, I photographed two signs at the side of the path. The first read: ‘Educating the Whole Child for a Whole World’. The second read: ‘Know Thyself in Order to

Serve'. Over a sandwich lunch with students, teachers and alumnae, I said: "I have one question. What does the first sign on the side of the path 'Educating the Whole Child for the Whole World' mean to you?" Everyone around the table responded. Michael, in Year 11, waited and said near the end: "Here, all our learning is embedded in human history. I am part of that history. My life will contribute to its future".

CHAPTER ONE Aims, purposes and goals of school education

Introduction

The Chapter begins the thesis interrogation of the dictum of the UNESCO Commission (1972) of an 'ultimate aim of education', and the conception of that aim in terms of complete human being (p.vi; p.145, pp.153-7). The Chapter examines the education landscape of statements of aims for schooling and early childhood education proposed by scholars and professional documents.[7]

The research investigated examples of statements from six groups of sources: scholars, national governments and associations, international authorities, international pedagogies, individual schools, and early childhood authorities. The first three groups commonly present educational aims in broad conceptual terms – public, private, national, economic, social diversity and inclusivity. The last three groups commonly offer aims conceived in terms of children and learning, particular worldviews and local contexts. The scope of the research is shown at Table 1.

The method of the Chapter is to present each source separately and quote extensively such that its distinctive language is clearly identified and is faithful to the original documents. The intent is to identify examples of language and concepts that are congruent with the UNESCO (1972) statement and its key

[7] The Commission Report entitles Chapter Six (p.145) "Goals" but discusses 'aims'. It refers to "goals of society" in a footnote which also refers to "purposes". The three terms are all used in the exposition here.

elements identified in the Introduction: Aims, human development and learning, human 'being' in terms of physical, intellectual, emotional and ethical integration, and human participation in the world to make it a better place. The outcome is a mosaic of the diverse conceptions and language for the aims of education. The Chapter is a first step towards developing a unifying narrative for schooling and early childhood education in terms of 'educating for humanity'.

Table 1
The scope of the research of aims and purposes of schooling

Australia	Other countries	International	Scholars
Federal government State/Territory governments Non-government bodies – Catholic, Christian, Islamic, non-sectarian Associations and organisations – parents, teachers Individual schools Early childhood education Special segments – special needs, indigenous groups, remote students, home schooling	New Zealand UK (United Kingdom) – England, Scotland, Wales Republic of Ireland Canada USA (United States of America) South America – Argentina, Brazil Europe – Finland, Denmark, Norway Africa – Botswana, Eritrea, Liberia, Ghana India, Sri Lanka Asia – China, Japan, Korea, Singapore	UNESCO OECD UNICEF Pedagogies – Montessori Steiner Waldorf IB: International Baccalaureate Reggio Emilia Schools Early Childhood Education – Brazil Canada England Finland Ireland New Zealand Norway Rwanda	Apple (2013) Ashton & Laura (2012) Beare & Slaughter (1993) Beare (2001) Caine & Caine (1997) Collins & Cook (2001) Connell & assoc., (1982) Dewey (1916, 1934, 1938) Gardner (2006) Hargreaves, Earl & Ryan (1996) Hattie (2012) Hunter (1994) Keating (2013) Peters (1966) Peterson (2009) Reid (2010) Sadnovik, Cookson, & Semel (2013) Seymour (2004) Shuayb & O'Donnell (2008) Sloan (2012) Whitehead (1929/1967)

The research has found that the epistemic landscape of the education world is conceived with differing ideologies, prerogatives and aspirations. Statements of aims and purposes are not provided by all jurisdictions nor by all individual schools. National and professional statements rarely offer articulated theoretical positions or are linked with scholars' statements.

The research has also found that three terms are used in educational writings to frame responses to the question: What are schools for? The terms are 'aim(s)', 'purpose(s)' and 'goal(s)'. They are all used in the sources informing the Chapter. There is no agreed semantic distinction nor consistent practice of their use. The terms 'aims' and 'purposes' are used more often in the following discussion.

1.1 Aims for schooling: Scholars' views

Scholars' views: External and intrinsic aims, public and private purposes

The epistemology informing the aims and purposes of schools, derived from educators and classic academic disciplines, seems to this research to represent various unresolved ideological positions. The exposition below identifies scholarly positions with respect to each of: Extrinsic and intrinsic aims for education, public and private purposes, conflicts between them, and desire for change.

Three influential scholars commence the discussion. Whitehead (1929/1967), Peters (1966) and Dewey (1916,1934,1938, cited by four of the scholars below) prefer 'aims' to 'purposes' because they see 'aims' for school education referring to internal, intrinsic concerns. For Whitehead and Peters, 'aims' express concern with

individual development. For Dewey,[8] aims arise from what is going on in the situation at hand (Levin, 2004, p.ix, in Seymour), and Sloan (2012).

Whitehead (1929) says one main idea runs through his book.[9] “The students are alive, and the purpose of education is to stimulate and guide that self-development” (p.v). Whitehead sees “the essence of education” as “religious”, “an education which inculcates duty and reverence” (p14), and “ultimate morality of mind” (p.12).

Peters (1966) reviews the criteria and concept of education. He makes a distinction between extrinsic and intrinsic aims for education. For Peters conceiving education as a process instrumental to something worthwhile which is extrinsic to it is inappropriate. An appropriate intrinsic aim is “the development of individual potentialities or the development of intellect and character” (p.27).

Levin (2004, p.ix, in Seymour) discussing Dewey (1916, Chapter 8), says: Dewey believed an aim must derive from existing conditions - from “a consideration of what is already going on”. “Theories about the proper end of our activities – educational and moral theories – often violate this principle. They assume ends lying outside our activities”. The problem becomes to “bring our activities to bear upon the realization of these externally supplied ends”. They become “something

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[8] The American scholar John Dewey is not offered as a primary source. The scholars cited here referring to him indicate his continuing influence through citation.

[9] Whitehead’s book (1929/1967) and Chapter One are entitled “The Aims of Education”, yet his “one main idea” is expressed by the term ‘purpose’, not ‘aim’.

for which we ought to act".

Contemporary discussion in Australia, New Zealand (NZ), Europe and the United States of America (USA), is inclined to refer to the 'purposes' of education and to distinguish them as public and private, democratic, social and individual. The terms 'public' and 'private' are used with differing semantics. 'Public' is used to refer to national or state aims or purposes, provided externally *for* schools to follow by governments and public funding.[10] It is used to refer to schools provided by governments. 'Private' or 'independent' is used in Australia, the USA and internationally to refer to schools which were founded and are largely funded by non-government bodies, and have greater autonomy to frame their aims, and the language in which they are conceived. Typically aims and purposes are those *of* the school.

Hunter (1994) and Keating (2013) explain that public purposes for schools derive from a nation's history. Hunter (1994) sees the "school as we know it", as an amalgam of bureaucratic governance, with its concern for the worldly welfare of citizens, and of "pastoral pedagogy" concerned with "self-examination and its care of individual souls" (pp.vi-vii). Keating (2013) says the "different theories about the reasons for the emergence of school systems" include factory models, competing

[10] 'Public school' is also used in the United Kingdom (UK) and in Australia to refer to some historic schools which were (are still largely) privately funded.

social aspirations, and formation of liberal democracies committed to nation building (p.1).

Reid (2010) is concerned to advance the public (democratic) purposes for school education with particular reference to Australian public primary schools. He says "Educational practice is informed by its purposes," which derive from political processes shaping educational discourses (p.1). He identifies three broad interacting purposes for schools – democratic, economic and individual, of which any one may be dominant according to different contextual conditions. He sees *individual* (sic) purposes as private rather than public. He believes "the central work of schools in a democratic society is the development of the capacities for social practice … citizenship, work, intercultural understanding, community involvement, communication … that build the common good" (p.2).

Reid, Cranston, Keating and Mulford (2011) believe that democratic public purposes for Australian schools have diminished with the advancement of private purposes (including choice of private school education). Democratic public purposes are more important for nation states in a "globalised and complex world" (Executive Summary, p.6 and Reid, 2010, p.2).

A study by Shuayb and O'Donnell (2008) compared the purposes, values and priorities of primary education in England, Scotland, Germany, New Zealand (NZ), Sweden and the Netherlands for the period 1965 to 2006. The authors note that few national policy documents for primary education are limited to explicit

statements of its purposes (pp.1-2). The authors believe that despite much change over the period, primary education has been “shaped by two main influences or theories” (p.2). These are:

- a desire for flexible autonomy in primary education proposed by advocates of child-centred progressive education and
- an emphasis on centralisation and standardisation driven more by a country’s political or socio-economic goals.

The authors do not use the terms public and private but believe a “hybrid” combination of both economic and personalised aims was evident in the six countries they surveyed (p.4).

Shuayb and O’Donnell (2008) explain why humanist, child centred, holistic educational philosophies, prominent in the 1960’s, lapsed. In England, the Plowden Report (1967) “advocated holistic and rounded education, care for children’s diverse needs, and individualisation”, but attempts to implement such a theory and that of a “child-centred philosophy” in Scotland “proved challenging” (p.2). By 1980, “child-centred education philosophies” were criticised as too “difficult to assess and a hindrance to economic growth” (p.2). One outcome however was recognition in policy documents of ethnic minorities and children with special educational needs (p.2).

Educators in the USA offer different perspectives. Adams (2000) and Gow (2013) expect private schools to have a public purpose. Adams (2000) expects schools to have a human, world orientation. He believes “human beings have both the desire

and the capacity to make the world a better place" (para.7). Schools, "as transforming institutions" [should] "measure their success .. by the extent to which their graduates contribute positively to their world" (para. 7). Gow (2013) believes too that private schools "need to add real value, cultural and even moral value, to society" (para. 6). For Gow, the conscious goal for all independent (private) school community members is "Informed citizens who care" (para. 9). Carter (2012) proposes the purpose of all schools "must be preparing children to compete in the global environment" (para. 4). He offers a "whole-child approach" (paras. 9, 10, 11).

Peterson (2009) and Sloan (2012) ask the question: What is the Purpose of Education? Peterson (2009) says the purpose of schooling has two primary opposing views: Schooling is to produce workers or to create citizens. Sloan (2012) acknowledges the diversity of response and the agitation the question prompts among all those affected by education (paras. 1, 2). She says in the USA "the purpose of education has evolved according to the needs of society" (para. 4). She provides a chart of five theoretical positions in the USA from 1934 to 1991.

Sloan (2012) quotes Dewey (1934).

> The purpose of education has always been to everyone, in essence, the same - to give the young the things they need in order to develop in an orderly, sequential way into members of society. … Any education is, in its forms and methods, an outgrowth of the needs of the society in which it

> exists. [It] was the purpose of the education given to a little aboriginal girl in the Australian bush.

Sloan also quotes Foshay (1991), whose conception is in humanist terms, like UNESCO's, rather than social terms.

> The one continuing purpose of education, since ancient times, has been to bring people to as full a realization as possible of what it means to be a human being. … The broader humanistic purpose includes all [other purposes], and goes beyond them … to encompass all the dimensions of human existence.

Complexity, conflict and change – hybrid aims

The discussion above illustrates the scope and complexity of the conceptual issues involved in framing educational aims and purposes historically and in the 21st century – and the conflict between competing views. Three potentially hybrid or alternative aims and purposes for education have been advocated: Societal, individual, and human (world). The discussion below further illustrates the irresolution between these three aims/purposes, but adds a new voice – a desire for change in the way the historic model of schooling education is conceived and practised. The sources referred to are again Australian, North American and British scholars, but include a reflection from Afghanistan.

That the debate over schooling purposes is long term and situated in school communities as well as among scholars is supported by Connell, Ashenden, Kessler, and Dowsett (1982). The authors discuss models for education, remarking

that even in the most harmonious school, neither parents nor teachers are agreed on educational philosophies. Schooling goes on in the context of an unresolved debate about its purposes and methods (p.52).

The Emerald Foundation (2012), an organisation serving Afghanistan, affirms that the purpose of education has been in conflict since early in the 20th century. The article quotes Dewey (1938), where he acknowledges the conflicts in the theory of education, which need “a new order of conceptions leading to new modes of practice” (p.1). “Many of the conflicts surrounding education are the result of multiple points of view as to the purpose of education, the definition of knowledge, and arguments over which knowledge or whose knowledge is of the most worth” (p.1). The article takes “the position that the purpose of education is to enable individuals to reach their full potential as human beings, individually and as members of society” (p.1). It integrates the three aims.

Sadovnik, Cookson and Semel (2013) provide a comprehensive overview of ideas from epistemologies contributing to education (p.1). The authors affirm that “throughout the twentieth century”, all the groups involved in schools “disagreed about the fundamental goals of education and the educational practices occurring within classrooms” (p.1). They too discuss Dewey’s philosophy of education which “made a conscious attempt to balance the social role of the school with its effects on the social, intellectual and personal development of individuals” (p.188). They say this tension between a school’s social role and developing individuals is central to understanding Dewey’s work (p.188). They refer to Dworkin (2009) and quote

Dewey (1959 Article 1) to illustrate. “I believe that all education proceeds by the participation of the individual in the social consciousness of the race” (p.198). “Education must begin with a psychological insight into the child’s capacities, interests and habits” (p.198).

Beare and Slaughter (1993) ascribe the problems in education, and their lack of solution, to the fact that “schools operate out of the framework which has determined their *raison d’etre* for the past two hundred years” (p.1). The “fundamental assumptions about schools, and about educational systems have to be revised” (p.1). Current systems are based “on a world-view from before the Industrial Revolution”, which is “now obsolescent” (p.4). In the 20th century, “the relationship between the human world and the planet that sustains it has undergone a profound change” (p.4). The authors cite Brundtland et al., (1987). Beare and Slaughter want to “re-conceptualise what education for the twenty-first century could be” (p.9). Beare (2001) declares “one of the central purposes of education (schooling) is to equip the learner with the skills to build a belief system” that each learner “can decode and (use to) cope with the emerging world order” (p.106).

Caine and Caine (1997) also believe the ideas and purposes of traditional education still inhibit appropriate change. They want to re-emphasise the human development aspect of education. ”The new paradigm requires a new type of person” – the possible human (p.1). The conceptual problem is so profound, Collins and Cook (2001) believe it is impossible to establish a single model of truth.

The authors say that for the previous 20 years [in the UK] there had been argument about the basic purposes of education (p.14). Their discussion is nonetheless underpinned by one idea for education in a democratic society – it must serve society well. Even so, the central idea to a democratic society is that every individual is important (pp.1-2).

Seymour (2004) wishes to rethink the purposes of education, with internal and external ends, for both children and the future of humanity, but believes a "global transformation to a new way of thinking" can't be made unless there is also "a radical change both in our conception and practice of education" (p.2). "We must not just educate 'better' as we have been trying to do, but educate *differently*" (sic) (p.2). "We must revisit our essential assumptions, values and visions about what education is" (p.2). Seymour says we need "enough people" to "come to an all-encompassing agreement that addresses what is most important for our children and for humanity's future" (p.2). He wants a vision, notwithstanding our "pluralistic and deeply divided society", that will bring "a sustainable, meaningful and just future" (p.2). (Seymour's position is explored further in Chapter Six.)

Additional perspectives: Individualisation, values and personal character, 'wholeness' and the planet

There are additional perspectives and terms to introduce here, relevant to the thesis argument in Chapters Two to Six. These are 'personalised' or 'differentiated' learning, character and 'affective' education, a 'holistic' approach, human 'being',

and a conception of human nature in terms similar to UNESCO's – intellectual, physical, emotional and moral - with the addition of social capacities.

Gardner (2006) also thinks the purposes of education are not agreed. He believes that the "principal purpose of school" – is for students "to acquire facility and fluency in the use of the disciplinary symbol systems" (p.210). Yet Gardner says we need to take children's individually different interests seriously. Children "learn in different kinds of ways, exhibiting different profiles and blends of intelligences, which result in different representations of bodies of knowledge. In all of these senses, education must be personalised" (p.210). Additionally he says that educational institutions have "come to bear a primary responsibility for the intellectual and moral health of the next generation" (p.213). "[E]ducation is fundamentally and primarily a "values undertaking", and educational values are perennially in dispute" (p.213).[11]

Hattie (2012) supports broad intents for schooling, teaching and learning that are much more complex than achievement and content knowledge. In any case, he says, there has to be agreement on what achievement to value (besides test

[11] The term 'values' is not discussed by the thesis. It is not *per se* part of the thesis proposition. UNESCO (1972) refers to an "affective universe composed of sets of values" (p.150). 'Values' is used variously by the thesis sources in Chapters One, Two and Five referring to purposes, goals, mission and vision for education, Implying moral development. Values education is referred to briefly at Section 5.3.2.

results) (p.3). For Hattie, the purposes of education and schooling include “critical evaluation skills”, students’ capacity “to see the world from the viewpoint of others”, to develop “genuine concern for self and others”, and about what is good for each (p.4). Hattie believes that schooling should have major impacts not only on students’ knowing and understanding; but on their character: Their intellectual, moral, civic, and performance character (p.4).

Hargreaves, Earl and Ryan (1996) are concerned about schools’ provision for adolescents. Their analysis is guided by three assumptions. “The main purpose of schooling for young adolescents” is to “help make education a continuous process addressing the personal, social, physical, and intellectual needs of young people at each particular stage of their development” (p.3). Different aspects of schooling should be dealt with as an integrated whole, not as isolated subsystems. The authors observe that development and implementation of any changes should be based upon, and take account of existing theories and understandings of educational change.

Ming (in Ashton & Laura, 2012) says Ashton and Laura (2012) discover “a new perspective of education for our human world today” (p.xvii). Ming declares that “in our culture and education” there has been “too much focus on the development of the intellect at the expense or neglect of the development of the feeling/emotional sensitivity and moral/social intelligence that lies beyond the ordinary reasoning process” (p.xvii). There is therefore “an urgent need to seek an alternate approach

in education, which would embrace the human body-mind and spirit in a more holistic and comprehensive way" (p.xvii).

Apple (2013) also asks "What is education for?" (p.47), but asks another question of importance to the thesis: Can education indeed change society?. Like Laura, Marchant and Smith (2008), Apple wants to challenge what he sees as the relations of dominance, subordination and inequality in society. He asks whether education has a substantive role to challenge the situation and to assist in building a less selfish society, reflecting values that are both "socially and personally emancipatory" (p.1)? He calls them "affective norms" (p.16). Apple doesn't offer " a new overarching argument", nor give one ultimate answer – he thinks there isn't one (p.2). He thinks schools perhaps provide aspects of the causes of social issues (p.4). Even so, education can make a real difference in people's lives (p.4). He tells a poignant refugee story connected to a vision for education "about one's very *being (*sic)" (p.5).

Concluding discussion of scholars' views of educational aims and purposes

The mosaic of scholars' views of the aims and purposes of education (schooling) in democratic countries, demonstrates that, although unresolved, aims for education are necessarily hybrid (Hunter, 1994, pp.vi-vii); Shuayb & O'Donnell, 2008, p.4) with individual and social aims predominating. There are however historic and emergent voices conceiving the aims of education in urgent, 'human' terms, and arguing that education needs to be rethought.

What is also unresolved is the tension between aims that are deemed ‘intrinsic’ or ‘private’, such as the development of individuals, and of societal consciousness, and aims which are ‘extrinsic’ or imposed. The interpretation of UNESCO (1972), adopted by the thesis, is that aims for education conceived in terms of ‘human being’ and ‘humanity’ are ‘intrinsic’, not imposed. They are not ‘private’, but ‘public’, global and ‘ultimate’.

The thesis will carry forward four themes which inform the aims and purposes of education. They are congruent with the UNESCO (1972) vision, but more emphasis is placed on individual differentiation. At this point, a social dimension and social consciousness are added to the original UNESCO group of human dimensions to be integrated.

- The personal development of each individual student, conceived as involving intellectual, social, emotional, physical, and moral aspects of human being.
- The recognition that each student, while possessing common human aspects or characteristics, is an individual with interests and learning and development needs which are to be ‘differentiated’ or ‘personalised’
- The expectation that individuals develop ‘societal consciousness’, awareness of citizenship, and participate in socio-economic improvement - not just pursue their individuality
- The expectation that individual human beings can and will develop a sense of world participation, responsibility for the future of the planet earth, and empathy for other human beings

The research has not identified a scholarly statement of educational aims and purposes including each and all of these elements. They provide a frame of reference for the reviews of professional statements in Sections 1.2 to 1.6.

1.2 Statements of aims, purposes and goals in national policy documents

The thesis research reviewed a range of documents from 60 countries of the world. The selection chosen here from 20 countries as examples are those statements of aims and purposes conceived in terms congruent with the conceptual themes concluding Section 1.1. Because aims are often hybrid, a number of the examples below are also conceived in socioeconomic and national terms. Australian education, familiar to the researcher, is discussed in more detail than that of any other country.

Pacific region: Australia - national, state, sectarian - New Zealand (NZ)

The national platform for Australia's 9400 schools is conceived in terms of 'goals' for Australian schooling (Australian Curriculum Assessment and Reporting Authority (ACARA), 2020). The goals were first conceived in 1989, revised in 1998 and reconceived in 2008 to two goals, which were reviewed again and reaffirmed in 2019. The conceptual language has changed with each revision. Of particular relevance to the thesis discussion to follow is the introduction in the 1999 Declaration of the statement: "Schooling provides a foundation for young Australians' intellectual, physical, social, moral, spiritual and aesthetic development" (Education Council, 2014b). The subsequent goals statements of

2008 and 2019 have retained similar phrasing and included emotional development.[12]

The original 1989 goals for Australian schooling declared that “the schooling of Australia’s children is the foundation on which to build our future as a nation” (Education Council, 2014a). The goals were conceived to include the development of the talents, capacities, and self-view of all young people, their skills and knowledges, physical development and health, participation in creative arts and concern for the environment. The capacities included moral and ethical capacity and capacity to work. The fourth goal was phrased in terms of the economic and social needs of the nation. A national report (MCEETYA, 2005) acknowledged the “capacity of all young people to learn” (p.xi).

The 2008 “goals for young Australians” were two broad goals: The promotion of equity and excellence in Australian schooling, and that young Australians should become “successful learners, confident and creative individuals, and active and informed citizens” (ACARA, 2020, *National Report on Schooling in Australia*, 2011). The goals were supported by a National Education Agreement (2009) which articulated the shared objective “that all Australian school students acquire the

[12] Lovat (2018) discusses spirituality in Australian education, describing it as a “legacy of confusion”. He says spirituality has received little attention in Australian education. Its rediscovery, particularly with respect to religious and moral content, has influenced the re-appraisal of schooling goals for the 21st century (pp.6-7). The thesis proposes a spiritual dimension or domain is included in conceptions of human wholeness and holistic learning.

knowledge and skills to participate effectively in society and employment in a globalized economy" (Council of Australian Governments (COAG), 2008, p.1).

The 2019 'Mpartnwe Declaration' retains the goals with some (small) changes in wording and emphasis. 'Citizens" becomes "members of the community", and "successful learners" becomes "successful lifelong learners" which is preceded by rather than following "confident and creative individuals" (Education Council, 2019, pp.4-5). It places renewed emphasis on the cultural knowledge of Aboriginal and Torres Strait Islander communities and connections and partnerships with them (pp.6,10). Australian Governments wish to provide learners with individualised, high quality learning and personal development (p.7).

The independent statutory authority referred to above, the Australian Curriculum Assessment and Reporting Authority (ACARA) was also established in 2008. A "key dimension of the curriculum" is the "general capabilities" referring to "an integrated and interconnected set" of "knowledge, skills, behaviours and dispositions" that students develop to support them in achieving the second goal as learners, individuals and citizens (ACARA, 2016). The seven capabilities are literacy, numeracy, information and communication technology (ICT), critical and creative thinking, personal and social, ethical and intercultural understanding (ACARA, 2016). These are addressed through each curriculum learning area.

Buchanan and Chapman (2011) critically examine Australia's goals for schooling and their implications. They identify common elements of the successive goals

statements developed 1989-2008, and see these as aligning with the OECD conception of “the kinds of persons required in the new knowledge economy” (citing Rizvi, 2008) (p.3). The goals “are driven by an agenda of producing workers for the global economic workplace” (p.4). Despite the goals’ limitations and inconsistencies, there is a “holistic vision of education” contained within them to “be exploited” (p.3, p.17). The authors refer to the goals statement that “Schools play a vital role in promoting the intellectual, physical, social. emotional, moral, spiritual and aesthetic development and wellbeing of young Australians” (p.17, citing MCEEDYA, 2008, p.4).[13]

Notwithstanding the introduction of the national goals for schooling, national curriculum and national education plans, the eight Australian State and Territory governments continue to develop schooling agendas specific to their social and geographic contexts and administrative structures. Each of these governments provides a focus on student learning. The Tasmanian and Western Australian Strategic Plans are illustrative. The “commitment” of the Tasmanian Plan for 2018-2021 is “to inspire and support all learners to succeed as connected, resilient, creative and curious thinkers”, with goals for engagement and participation in learning, and learners’ wellbeing, such that learners “are able to flourish” (*Strategic Plan*, Department of Education, 2020). The Western Australian Plan 2016-2019

[13] The discussion of whole child and holistic terminology on p.228 refers again to this citation.

wishes to “make a real difference to the lives of our students” and focus improvement on “student learning” (Department of Education, 2015, p.2).

Almost a third of Australian students attend schools founded and administered by non-government authorities. The majority of these are sectarian (religious) authorities. Roman Catholic dioceses play a major role in primary education. A sample of mission, vision, values and purpose statements is provided here. The conceptual language makes more frequent reference to ‘worldviews’.

The Vision for Catholic Education in the Archdiocese of Melbourne (2009), uses the term “sacred landscape” to suggest that “learning centred schools” provide individuals (students, staff, and families) with opportunities to encounter the Creator of the universe through the educational life of the school (Title page, Foreword, p.2). The Vision statement for *The Strategic Plan 2015-2019* wants “An outstanding Catholic education that equips our young people with the knowledge, skills, hope and optimism to live meaningful lives and shape and enrich the world around them” (Catholic Education Melbourne, 2015, p.5).

The vision of The Anglican Schools Corporation (TASC) (2017) is: “*Serving Christ by equipping students for His world*” (sic). It declares in its *Philosophy of Education* (2011) that “Education involves the deliberate development of a learning situation to reach desired goals” (p.3). The Corporation promotes “an imaginative and challenging worldview, shaped by the Bible” (p.3). The challenge “is to *contextualise* (sic) the gospel of Jesus Christ in the culture of the society in which

we live and learn” p.3). The Biblical framework celebrates “every type of achievement … academic, cultural, creative, social, spiritual and technical … education that is Christian is necessarily holistic and culturally relevant” (p.3).

The purpose of Christian Schools Australia (CSA) (2019) is illustrated in a diagram “On behalf of the Kingdom, for the world”. “The purpose of Christian school education is the educational and spiritual development of each individual child.” “Christian schools aim to prepare students to live full, productive and purposeful lives, contributing to the wellbeing of their families, communities, and as global citizens”. The Islamic Schools Association (ISAA) (2020) uses similar language. ““Member schools are committed to the education of Muslim children towards being model Australian citizens who will contribute towards the development and welfare of this great country”. … “ Muslim Australians can have their spiritual and emotional needs better provided for in an Islamic environment” (Home page).

Other contributing voices to the conception of Australian schooling are those of professional educator associations, research bodies and parent organisations. One comment only will suffice. Evans (2013) says the purpose of school education is more than “educating a child to be job-ready”, and “beyond success for each individual student”. The purpose of a school “is equally about securing the future of a nation”, to which every student is “integral”. She asks: “*(H)ow can we be certain that our nation is getting the best out of every young learner?”* (sic).

There are also specific interest groups concerned with home schooling, distance

education, special needs children and indigenous education. These groups are not discussed in the thesis, but relevant language such as ‘personalised learning’ will be discussed in Chapter Three. Special needs children are identified in references to ‘inclusiveness’. An indigenous perspective is referred to in the examples of schools at Section 1.5 and in the discussion of the holistic principle in Chapter Six.

New Zealand (NZ)

The purpose and vision of the Ministry of Education, NZ (2018) is concerned with the country’s unique and diverse society more than economic goals. The Vision is personal and global, where every person in NZ, is “strong in national and cultural identity”, is aspirational, has opportunity to be their personal best, and is a productive participant of society and the world (Our Vision). NZ education statements highlight learners and learning. A unique feature of NZ education is the creation of 180 Communities of Learning (Kahui Ako) across the country (Ministry of Education, NZ, 2017). Groups of providers work together to “help learners achieve their full potential” (para. 1). “Each Community of Learning sets shared goals, or achievement challenges, based on the particular needs of its learners” (para. 2). One “achievement challenge” is for every student to become “connected” - “able to relate well to others”, communicators, “connected to the land and environment, members of communities, international citizens” (Ministry of Education, NZ, 2016, p.8).

The Americas: Canada, The United States of America (USA), Argentina, Brazil

Canada has no integrated national system of education (National Centre on Education and the Economy (NCEE) (2020). A national framework *Learn Canada 2020* was declared by a Council of Ministers of Education (2008) of the provinces and territories. Its vision is quality lifelong learning opportunities for all Canadians (p.1). The framework "recognizes the link between a well-educated population" and a "knowledge-based economy", a sustainable society, and "enhanced personal growth opportunities for all Canadians" (p.1). It offers four pillars of lifelong learning. Hyslop (2011) nonetheless says Canada has no goals for education. She refers to the closure and final report of the Canadian Council on Learning (CCL) (2011). The Council wanted "clear and measurable goals for each stage of learning" (p.6). The Council gave Canadians "an opportunity to set in place a vision, a mission, and a model for continuous learning which could unite Canadians in a common purpose" (p.6).

The United States of America (USA) has a complex educational system of individual state, county and local provisions in over 14000 public school districts. The Mission of the US Department of Education (2020) "is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access" (Mission Statement). The focus is on equity and accountability. The USA has introduced two national programs in the 21st century – the *No Child Left Behind Act* (NCLB) (2001) and the *Every Student Succeeds Act* (ESSA) (2015). A Task Force Report (Council on Foreign Relations, 2012) found "The United States' failure to educate its students leaves them

unprepared to compete and threatens the country's ability to thrive in a global economy" (Overview). The 2010 documentary *Waiting for Superman* had demonstrated reform was desperately needed, describing high schools particularly as "failure factories".

A National Plan of Action of the Argentine Republic (Ministry of Foreign Affairs, n.d. post 2008) lists education as the first of four priority fields of national and international action. Argentina's "educational system was designed with the ultimate purpose of allowing the fullest possible integration of students from diverse origins" (p.8). "*Schools play the role of State 'building' agents"* (sic) (p.8). The Ministry of Education (2008) had set out the challenges of the 21st century (pp.5-7). A National Education Law of 2006 had stipulated the purpose of primary education as guaranteeing all children access to basic learning (p.18). The main purpose of secondary education was to enable young people to exercise citizenship, to work and continue their education (p.20). The Ministry also set out a concept of 'artistic education' (pp.24ff), which sought to develop the "sensitivity and creativity of each person", bearing in mind the cultural diversity of the country's different communities. The goal was to build a national identity in artistic education.

A National Education Plan for Brazil (2001) was conceived in response to UNESCO's *Education for All* initiative, with a new plan promulgated in 2014. The 2001 goals and objectives were those of the Brazilian nation - to fight for inclusion and participation (p.5). A new National Plan 2014-2024 (2014) has twenty goals (Speller, 2014, Slides 30-36); OECD, 2015, p.14). These also include

increased access to quality education and the reduction of inequalities. A Report by the Brazil Ministry of Education (2008) discusses the “goals and objectives of education at the different levels” (p.13). Early childhood education is to include “collaborative mechanisms “ between education and health (p.13). Primary education is aimed at “the development of the capacity to learn” – “with the aim of acquiring knowledge and capabilities and the formation of attitudes and values” (p14). The goals for secondary education provide for continued learning and “the improvement of the pupil as a human being, including ethical formation” (p.16). Three national principles for secondary education are the “Aesthetics of Sensibility”, the “Politics of Equality” and the “Ethics of Identity” (p.26). These last practise “a contemporary humanism”, by recognizing others and the incorporation of “responsibility and reciprocity as orienting values” into individuals’ “professional and personal lives”(p.26).

Europe: United Kingdom (UK): England and Northern Ireland, Scotland, Wales - Republic of Ireland, Finland, Denmark, Norway [14]

Each of the countries of the United Kingdom (UK) has its own education system. England’s national plan *Every Child Matters* (ECM) (2003) sought to reform the delivery of children’s services “to protect children at risk of harm and neglect” (p.5). “Our aim is to ensure that every child has the chance to fulfil their potential by

[14] A search of documents for the period 2014-2019 from Belgium, France, Germany, the Netherlands, Spain and Switzerland, of the European Commission ‘Eurydice’ database of 42 countries, and of OECD Policy Outlook Reports for individual countries did not identify national documents conceived in terms of ‘aims/purposes’, children, or child learning.

reducing levels of educational failure" (p.7). Scotland and Wales each have national Education Plans which have been recently updated. Ireland's most recent Action Plans have been for 2016-2019 and 2019-2021.

Education Scotland (2013) wanted Scotland to thrive by renewing a 'national passion' for education (p.2). It conceived its *Corporate Plan 2013-2016* in terms of "transforming lives through learning" (Title page, p.8). The vision was a 'learner focused vision' for children and adults, placing "the learner at the core of everything" done in schools (p.9). It envisaged "a system in which all learners progress through personalised learner journeys" equipping them with the skills needed to thrive in their careers and in larger society (p.9). The current plan (2019-2022) is still conceived "for Scotland's learners" (of all ages) at its heart, but "with Scotland's educators" in partnership, in collaborative networks to "get it right for every child" (Education Scotland, 2019, pp.1-3, pp.9-10,12). The vision is based on four values: Integrity, respect, excellence, creativity (p.3). The purpose is to create "a more successful country" with opportunities for all "to flourish through increased well-being" and economic growth (p.14).

The national mission of Education Wales (2017) is education reform to raise standards (p.2). A strong education system underwrites "a nation's prosperity, social cohesion and well-being" (pp.2-4). Schools are "learning organisations" (p.12). The government is "committed to the success and well-being of every learner" (p.2). Wales "learners will be resilient, imaginative, compassionate and ambitious" to "achieve their goals" and "make the most of their potential" (p.2).

They will be encouraged to learn for life by a “collaborative and innovative” education community (p.3). Wales’ intention is that learners will become “ethical, informed citizens of Wales and the world” and “healthy, confident individuals” (p.11).

Ireland’s *Action Plan for Education 2016-2019* (2016) links the ambitions of the nation, socially and economically, to education – to excellent and innovative education. The conception of education is that it provides for personal fulfilment, learning and world participation. “Education is the key to giving every child an equal opportunity in life” (p.1), and to providing “skills and knowledge to fulfil their personal goals” (p.2). The Vision – to provide the best education and training system in Europe - wishes to equip “learners of all ages and capacities to participate and succeed in a changing world” (p.1). The mission is “to facilitate individuals through learning, to achieve their full potential and contribute to Ireland’s social, cultural and economic development” (p.8). The second of “five high level goals” is to “improve the progress of learners at risk of educational disadvantage or learners with special educational needs” (p.2, pp.26-30). The aim of the government is to use economic success to build a fair and compassionate society (p.6). The vision for the *Statement of Strategy 2019-2021* is that a quality learning system is “empowering” (‘cumasu’) – unlocking individual potential and the nation’s cultural identity (p.1, p.3). The strategy offers five goals (p.5).

Hancock (2011) asks: “Why are Finland’s schools successful?” (Title page). She tells the story of one individual child and says “Whatever it takes” is the attitude

driving most of the educators in Finland's 3500 schools (para.6). She says the transformation of the education system began 40 years ago as key to the country's economic recovery plan, but it is "the human aspect" (para. 8) and determination to catch every student, particularly weak ones, not the statistics, that matters. Westerberg (2013) provides fifteen traits of the Finnish system, one of which is "the focus on the individual child", whether "behind" or "soaring ahead" (List item 13). The Ministry of Education of Finland (2017) says that "A central objective is to provide all citizens with equal opportunities" (p.2). "The potential of every individual should be maximized" (p.6).

The Danish education system provides three national goals for public schools (the Folkeskole) which are managed by local municipalities: Challenging "all pupils to reach their full potential", reducing the impact of social background on academic achievement, and enhancing trust in schools and pupil well-being (The Ministry of Higher Education and Science, 2016, p.3). The Ministry of Children and Education has "goals for a world-class education system", with the aim that all young people are prepared for lifelong education (2017, para. 1). There are specific goals for all levels of the system. The goals for the Folkeskole are the provision of knowledge and skills as a basis "for actively taking part in a globalised world" (para. 2).

The aim of education in Norway is "to have high-quality schools that equip individuals and society with the tools they need in order to value and to build a prosperous and sustainable future" (Ministry of Education and Research, 2014, Primary and Secondary Education). All students should "experience a sense of

achievement" (ibid). Education "must be organised in a lifelong learning perspective" (Norwegian Ministry of Education and Research, 2007, p.5). *The School of the Future* report (Official Norwegian Reports, 2015) declares education "shall contribute" to developing students' "knowledge and competencies" so they can become active social participants (p.7). Schools must also support students' "personal development" and help develop their "potential as individuals" (p.7). "The goals for pupils' learning must reflect the values underpinning school as expressed in its objects clause, society's needs and research-based knowledge" (sic) (p.8). Pupils need to be able to learn, self-regulate, communicate, interact, participate, explore, create (p.10).

India, Sri Lanka, African countries - Botswana, Eritrea, Ghana

The first statement of aims for education in India was made In 1953 (Dushi, 2012a, para. 2). Dushi (2012a) refers to the Commission statement: "Education which is national in character must develop in its citizens' (sic) habits, attitudes and qualities of character" (para. 2). Dushi claims that "a national system of education is always inspired by the social, political, and economic conditions prevailing in the country," and conforms to "cherished national goals" (para. 1). The aims include the "development of democratic citizenship", "the development of personality" (which includes all the arts), and developing social, moral and spiritual values (pp.2-3). Dushi cites the Kothari Education Commission (1996).

Dushi (2012b) discusses individual development as the aim of education. He cites Nunn (n.d but 1920), and Nunn's belief that individual human beings are

responsible for all the good that enters the human world. Moreover each individual is responsible for his or her own destiny. Education “must cater for the complete development of an individual” (para. 2). “The main purpose of education is to provide conditions under which individuality is most completely developed” (para. 3 (a) (ii)). India’s Twelfth Plan for national development however presents a conception of education in more utilitarian terms (Government of India Planning Commission, 2013). “Education is the single most important instrument for social and economic transformation” (p.47). “Education also acts as an integrative force in society, imparting values that foster social cohesion and national identity” (p.47). The Twelfth Plan needs to address a range of social and educational issues “in an integrated and holistic manner” (p.49).

Education First (2013) carries the current Vision of the Sri Lankan Ministry of Education for future generations of citizens “equipped with competencies to meet the challenges of a changing, globalised, knowledge-driven economy” (p.iv). The competencies include communication, personality development, relating to social and biological environments, preparation for work, ethics, leisure and ‘learning to learn’ (sic) (pp.20-21). The Ministry has a goal to merge two different education traditions: That of the past promoting “religious values and spiritual development” with the need for the development of modern skills (p.vii). The national system of education should assist individuals and groups to achieve national goals that are relevant both to individuals and society (p.19). The goals for individuals include mental and physical well-being based on respect for human values, an “abiding

concern" for others, creativity, responsibility and all "positive elements of a well-integrated" personality, a capacity to cope with change (p.19).

More than 20 African countries provide individual government plans to the UNESCO Portal of National Education Plans and Policies (n.d. 2020). The developing countries of Africa are concerned with universal literacy, equity and inclusivity of access to education, nation building of human capital contributing to economic development, and in particular countries to peace-building, the reduction of violence, and the eradication of absolute poverty. Education goals are linked instrumentally to national development goals.

The Republic of Botswana (2015) refers to Vision 2016 which "articulated long term national goals and values", … "to promote human, social, economic and environmental development" (p.7). The goals included developing "a compassionate and caring nation" (p.16). The goals will also contribute to individuals "by helping learners to maximise their potential" and "succeed in Botswana society" (p.8). The State of Eritrea (2018) says the vision of the National Education Policy (2011) was the aspiration *"to produce all rounded citizens along with a firm commitment to country, people and social justice"* (sic) (p.12, p.25). *This aspiration includes the development of creative and productive individuals"* (sic) capable of contributing to a harmonious country (pp.12-13, p.25).

The vision for education of the Republic of Liberia (2016) "is a system in which every child can go to school, where there is a quality teacher in every classroom,

and where children achieve a good standard of learning" (p.vi, p.3). The Ghana Ministry of Education (n.d. 2018) is ambitious to turn Ghana into a 'learning nation' (sic) where "no child is left out" (p.ii, p.xiii). Its Mission includes equipping "individuals for self-actualisation and peaceful coexistence" (p.14). [15]

Asia: China, Japan, Korea, Singapore – holistic development

China's National Plan for education reform (2010) for the decade 2010-2020, is a comprehensive strategy of goals, themes, and missions. It is conceived in national, political, economic and human development terms, which are consequentially linked. "Education must be enhanced if a nation is to prosper" (p.5). Building a country "rich in human resources" is essential "for economic development" (p.7). "(P)utting the cultivation of people before everything else is the bottom line of education" (p.7). There is an additional explanation. Cultivating "socialist builders and successors" means that they "are well developed morally, intellectually, physically and aesthetically" (p.7).

Japan also wishes the cultivation of its people. The Basic Act on Education (March 1947, revised 2006) sets outs "the aims and principles of education" (Ministry of Education, Japan, Basic Act on Education. n.d. current 2020). The Preamble reads in part: "We, the Japanese people, wishing to further develop the democratic and cultural state we have built … also hope to contribute to world peace and to

[15] The documents from Liberia (2016), Ghana (2018) and Eritrea (2018) provide "evidence-based" support materials. They are relatively rare in doing so among national plans.

improving the welfare of humanity. To realize these ideals, we will implement education that values the dignity of the individual, that endeavors to cultivate a people rich in humanity and creativity who long for truth and justice." Article 1 states: "Education must be provided with the aim of fully developing the individual character " as part of the "endeavor to cultivate a people" who are "sound in mind and body". To realize these aims, education must achieve students cultivating rich sensibility and sense of morality, creativity and autonomy, fostering values of respect, cooperation and caring for nature (Article 2). Lifelong education is encouraged to contribute to continuing personal refinement and fulfilment (Article 3).

Mani and Trines (2018) introduce the education system of S Korea. "By some measures South Korea … is the most educated country in the world" (para. 1). The country puts great emphasis on education as a primary means of economic development and social mobility (paras. 5, 6). Some observers perceive a "devotion to learning" (para. 9). The authors say current government reforms are seeking to create a less competitive system (Second section).

The Ministry of Education of South Korea introduced the revised national curriculum in 2015 with "an aim to nurture a creative and integrative learner" (2020, Major Tasks, para. 2). The "curriculum focuses learning on key competencies" which include self-management, creative thinking skills, aesthetic-emotional competency and civic competency (para. 2). "Korea promotes character education to raise intelligent learners who are able to communicate well with others and have

balanced growth of strength, virtue and wisdom" (sic) (para. 3).[16] The Ministry of Education, 2016) introduced "Happy Education for All". It provides education that "nurtures dreams and talents", "leaves no child left behind" (p.5) and "fosters creative talent" (p.6). Happy education "pursues students' holistic development" (p.10). This includes character education, arts and physical education, history and unification education (p.10). It promotes "global citizenship" (p.26).

The Singapore Ministry of Education (2015) declares its focus on individual children, their learning and a holistic approach, although the system also meets the needs of a competitive global economy (p.7). "The Singapore education system aims to "bring out the best in every child by enabling each student to discover his talents, realise his potential, and develop a passion for learning that lasts throughout … life" (p.3). Recognising "students' diverse aptitudes and interests" (p.2), The Ministry of Education "is committed to giving each child a broad and deep foundation for a lifelong journey of learning, providing additional support for those who need it" (p.5). The concept of "holistic education is about nurturing the whole child", developing in children "an enduring core of skills, dispositions and competencies, steeped in values and character, to enable them to thrive in the future workplace, and more importantly, lead purposeful and meaningful lives" (p.5). Each child learns "in a variety of domains" (p.5). Schools build "a strong

[16] There is a Character Education Promotion Act (2015) and a Character Education 5 Year Comprehensive Plan (2016-2020) (Kim & Eom, 2017, p.6).

foundation of literacy and numeracy", and develop students' "physical, aesthetic, moral, and socio-emotional aspects"(p.5).[17]

The Ministry of Education (2019) has identified 21st century competencies that underpin Singapore's concept of holistic education. There are "core values" at the centre of a circular model (p.1). The social and emotional competencies are: Self-awareness, self-management and responsible decision-making, relationship management and social awareness. These are necessary for children to develop care and concern for others, and handle challenging situations (p.2). Emerging 21st century competencies for the contemporary globalised world are: Civic literacy, global awareness and cross-cultural skills, critical and inventive thinking, communicative, collaborative and information skills (p.2). The student outcomes include self-directed learning, and confident moral persons who are active social contributors and concerned citizens. They appreciate "the beauty of the world", have "a healthy mind and body", and a "zest for life" (p.2).

Interim conclusion

This sample of national statements of educational aims shows that none take up the challenge of UNESCO's ultimate aim for education. Japan alone in the sample situates its aims in a context of global humanity. The concept of and aspiration for individual human individual development is, however, strongly represented. Human

[17] Hogan (2014) had queried whether the model of pedagogy and learning outcomes matched such aims and concepts, and noted the government's concern about this.

development is commonly conceived in terms similar to, but extended beyond UNESCO's original dimensions to include social, aesthetic, and spiritual development. There is not yet an agreed term for these dimensions. Human development is variously referred to in terms of 'capacities', 'capabilities', 'competencies' and 'potential'. It involves 'creativity', 'compassion', 'self-regulation' and participation in the world. Human development and learning are lifelong. For Singapore particularly, education involves the "whole child" and is "holistic" (2015, p.5, above).

1.3 International purposes for education

1.3.1 Humanist and humanitarian aims and purposes

UNESCO's vision for world education is "humanist" (Faure, in UNESCO, 1972, p.xxvi; Bokova, in UNESCO, 2015, p.3). It is conceived in terms of human development for a "better world" (Faure, in UNESCO, 1972, p.xix; Delors, in UNESCO, 1996, p.14).

UNESCO (1972) grounded its concept of "universally valid aims for education" in "scientific humanism; in the development of reason; in creativity; in the spirit of social responsibility; in the search for balance among the various intellectual, emotional and physical components of personality" (p.158). Faure (in UNESCO, 1972), introducing the Commission's Report, says it provided a common conception of scientific humanism. "It is humanistic in that it is mainly concerned with man and his welfare as an end in itself; and it is scientific to the extent that its

humanistic content remains defined … by the continuing new contributions of science to the field of knowledge about man and the world" (p.xxvi).

Faure (in UNESCO, 1972) believed that education at the time – in both industrialized and developing countries (p.xxvii) - was "facing a critical challenge" to be rethought "in its entirety", with international, world cooperation prerequisite (p.xxxvi). "The great changes of our time are imperilling the unity and future of the species, and man's own identity" (p.xxi).

A second UNESCO Commission Report (1996) is also conceived in terms of human development and learning, but does not use the term 'humanism' *per se.* Delors (in UNESCO, 1996) affirms the Commission's belief that "education has a fundamental role to play in personal and social development" (p.13). Education is not a "miracle cure", but it is a "principal means … to foster a deeper and more harmonious form of human development" (p.13). Education is "an expression of affection for children and young people" (p.14). At the turn of the twenty-first century, given world turmoil, "it is essential that all people with a sense of responsibility turn their attention to both the aims and the means of education" (p.14). UNESCO's role is based on "the hope for a world that is a better place to live in" (p.14). Delors identifies tensions to be overcome in pursuing the ambition to create a better world (pp.16-18). One of these is the tension between "the spiritual and the material", the longing for an ideal and values that are moral (p.18).

Delors (in UNESCO, 1996, p.19) says that:

> [Education] is at the heart of both personal and community development: Its mission is to enable each of us … to develop all our talents to the full and to realize our creative potential, including responsibility for our own lives and achievement of our personal aims.

This aim is transcendent in contributing to a better world to live in (p.19). The moral and cultural dimensions of education which enable each person to "grasp the individuality of others" and "the world's erratic progression towards a certain unity" begins with their self-understanding (p.19).

The UNESCO Commission Report (1996), like that of UNESCO (1972), despite these human aims, recognises "the contribution that education must make to economic and social development" (p.20). The Commission focuses on the concept of lifelong education as a key to the twenty-first century (p.22). Each individual needs "to learn how to learn" (p.22). The Commission proposes four pillars of learning: to live together, to know, to do and to be (pp.22-3). "Learning to be" was the dominant theme of the 1972 UNESCO Report (p.23).

Bokova (in UNESCO, 2015), asks: In the spirit of these two Reports, "What education do we need for the 21st century? What is the purpose of education in the current context of societal transformation? How should learning be organized?" (p.3). Education must change for a changing world (p.3).

Bokova (in UNESCO, 2015) contends that the social transformation occurring in the contemporary world means education needs to foster the "competencies", to

move “beyond literacy and numeracy, to focus on learning environments”, on “learning for greater justice, social equity and global solidarity”, on “learning to live on a planet under pressure” (p.3). It must involve “cultural literacy”, respect, dignity and sustainable development (p.3). “This is a humanistic vision of education as an essential common good” (p.3). Education is the most “transformative force” to promote goals of rights, dignity, justice, diversity, and international shared responsibility, “which are fundamental aspects of our common humanity” (p.4).

The Report Bokova introduces (UNESCO, 2015), asks: “How can a plurality of worldviews be reconciled through a humanistic approach to education” (pp.11-12)? Education and learning need to go beyond “utilitarianism and economism to integrate the multiple dimensions of human existence” (p.10). Education and knowledge are *global common goods* (sic) (p.11). The sentence critical to the thesis position is this: “Education alone cannot hope to solve all development challenges, but a humanistic and holistic approach to education” can contribute to “a new development model” (p.10).

Elfert (2015) avers an humanistic approach has long been contested by a market driven approach to learning, but there are indications of (its) revival (p.1). Elfert (2019) revisits both the UNESCO 1972 and 1996 reports from the perspective of lifelong learning (discussed in Chapters Three and Five). She says “UNESCO’s concept of lifelong learning grew out of the organization’s universal and utopian humanism” (p.17). Its vision for lifelong learning embeds a notion of citizenship, which involves “the right and responsibility of the individual to employ education for

the sake of the betterment of society, and the importance of solidarity among all the people of the world" (p.17). Elfert believes "the humanistic vision of lifelong learning has arguably lost out to more powerful economistic interpretations of the concept that dominate education policies today" (p.17). Elfert cites Bagnall (2000).

1.3.2 International, economic development purposes

The Organisation for Economic and Cultural development (OECD) has a different international mandate from that of UNESCO. The OECD's work illustrates the necessary parallel, even competing discourse about the role of education in the world, and by implication, its purposes. The goal of the OECD (2019d) "is to shape policies that foster prosperity, equality, opportunity and well-being for all" – for **better lives** (sic) - "to better prepare the world of tomorrow" (Who we are, para. 1).

The OECD establishes "evidence-based international standards" and seeks "solutions to … social, economic and environmental challenges" (Who we are, para. 2). "The OECD's work on education helps individuals and nations to identify and develop the knowledge and skills that drive better jobs and better lives, generate prosperity and promote social inclusion" (OECD, Education, 2019).[18] The trends shaping education across the world that OECD has identified are of a "global scale" (OECD, Education GPS, 2019, para. 1). They include "migration,

[18] The OECD annual report 'Education at a Glance' provides information on the state of education around the world, reporting on c.50 countries according to a framework of indicators (OECD, Education at a Glance, 2016).

climate change, interdependency of financial markets, urbanisation, changes in family configurations, ageing societies, increasing public spending, and growing inequalities (para. 1). “(S)chools are called to help children develop the types of skills, knowledge and competencies required of a 21st century global labour market” (para. 1). Many of the political, economic and demographic transformations require “global solutions” (para. 1). The future of education for “each education system is a pressing and open-ended question” (para. 1). The OECD Centre for Educational Research and Innovation (CERI) has been conducting a ‘Schooling for Tomorrow’ research project since the 1990’s to develop “futures thinking in education” (2019c, para. 1).

OECD’s position on early childhood and care (ECEC), is that it “can help lay the foundations for future skills development, well-being and learning” (OECD, 2017, Introduction, para. 1). OECD provides information to assist countries to improve ECEC services. OECD has conducted an International Early Learning and Child Well-being Study across three countries of children aged five years (OECD, 2020). “The study focuses on those aspects of development and learning that are predictive of children’s later education outcomes and wider well-being” – emergent literacy and numeracy, self-regulation, and social-emotional skills (Executive Summary, para. 3). The study included contextual information from parents and teachers (Executive Summary, para. 2).

1.3.3 International health, welfare, learning purposes

The third international organisation with an education brief among its broader purposes of health, nutrition, welfare and the rights of every child, is UNICEF (originally United Nations International Children's Emergency Fund). UNICEF (2020) says "All children have a right to survive, thrive and fulfil their potential – to the benefit of a better world" (About UNICEF, UNICEF believes). UNICEF's distinct purpose is "to work with others to overcome the obstacles children face of poverty, violence, disease and discrimination (About UNICEF, para. 3).

The UNICEF education statement (UNICEF, 2020, Education) declares: "Every child has the right to learn" (Header, p.1). A shortage of trained teachers, inadequate learning materials, illness, poor sanitation, hunger, and location affect the basic literacy and numeracy of approximately 60% of the world's children (paras. 1-4). "This learning crisis is the greatest global challenge to preparing children and adolescents for life" (para. 5. However, UNICEF warns: "Schooling does not always lead to learning. Worldwide, there are more non-learners in school than out of school" (Header, p.2).[19]

Interim conclusion

These three international organisations provide the global voice for education. Together they provide the range of purposes education serves internationally and nationally - global, humanist, economic, individual. The emphases are different, but

[19] The UNICEF website was being rebuilt at the time of writing. Pages were being moved.

each organisation perceives the critical role education has in human development. Each in different ways, continues to reconceive that role.

Until more recently when UNESCO has offered specific programs such as 'Education for All' and placed emphasis on sustainable development and literacy, its dominant contribution has been conceptual. Here, UNESCO (2015) adds the concept of 'holistic' to the 1972 humanist vision. OECD emphasises statistics and measurable outcomes, but is concerned with the quality of teaching and learning environments, and with early childhood development. UNICEF is concerned with each child's wellbeing, potential, and access to adequate education to benefit a better world.

1.4 International pedagogies: Montessori, Steiner-Waldorf, International Baccalaureate (IB): Concepts of children and learning, holistic education

There are three pedagogies – practices of teaching and learning – that have been developed and accepted widely internationally during the 20th century: Montessori education, Steiner (Waldorf) education (the two terms are used interchangeably), and the International Baccalaureate (IB). Montessori and Steiner education were conceived by individual practitioners. Each provides a unique model of schooling practice that derives from a singular conception of children and children's learning. The programs of the International Baccalaureate focus on a specific approach to learning and a 'Learner Profile', but not on a concept of child or human nature. Typically these three pedagogies are licensed for practice by individual schools worldwide.

Steiner-Waldorf education also offers a model of practice for all years of schooling worldwide. Montessori education is most commonly practised for primary school years (K-6), with a few countries developing secondary education extensions to Year 8 and above. It is noteworthy that Montessori education began inclusively with children with severe disabilities and Steiner education with children from deprived socio-economic backgrounds. Together these pedagogies operate in over 30000 schools worldwide.

A mode of early childhood education practised in one regional municipality in Italy – known by its locality as 'Reggio Emilia' – attracts world interest and some imitative examples in other countries. It is a unique mode of pedagogy based on a specific conception of children and their learning but it is not *per se* an international pedagogy. Reggio Emilia education will be referred to again in the introduction to early childhood education at Section 1.6, and in Chapter Five.

Again, what is of most interest to the thesis is the language used by each pedagogy to describe their aims, and the concepts of children, learning and world on which the pedagogies are based. The term 'holistic', germane to the thesis argument, was used above in the review of Asian education statements and by UNESCO (2015). It is used by commentators to describe the pedagogies reviewed below.

1.4.1 Montessori education

Dr Montessori opened the first 'Casa dei Bambini' (Children's House) in 1907. The

method of educating primary school aged children she developed during over 50 years of practice was based on her belief that “children have an innate aptitude and desire for acquiring knowledge about their world”: The Montessori approach is to “follow the child” (Greenspring Montessori, Why Montessori, 2019, para. 2).

Greenspring Montessori School in Maryland, USA “promotes self-paced, collaborative learning to ignite the passion and curiosity” of students (Why Montessori, 2019, para. 1). It nurtures children’s “innate desire to learn’, to develop academically, in self-discipline and responsibility (para. 1). Montessori education provides “hands-on materials” in “beautifully ordered”, prepared environments, where “children not only learn, but thrive” (paras. 5, 6). A Montessori guide (teacher) “must intimately understand each child’s interests, motivations, abilities and insecurities” (para. 8). “A Greenspring Montessori student develops confidence and innovation, rising as a responsible, compassionate and empowered leader, learner and advocate” (Head of School’s Welcome, 2019, para. 1).

The American Montessori Society (2020) presents its mission as “empowering humanity to build a better world through Montessori” (About AMS). The Society describes the Montessori Method as a “child-focused approach” to education that “fosters rigorous, self-motivated growth for children and adolescents in all areas of their development – cognitive, emotional, social and physical” (What is Montessori?).

Montessori Australia (2020) says Montessori education supports “the full

development of the human being" (About Montessori, para. 1). It offers a broad vision of education as an 'aid to life' (sic) (para. 1). Montessori provided a further concept – cosmic education - to meet the "fundamental needs of the primary child" (Montessori Australia, 2017, Cosmic Education, para.2). "Cosmic education provides a framework for all studies" (para.5). Montessori wished to offer primary children a "vision of the whole universe", of which "all things are a part, and are connected with each other to form one whole unity" (para.3). The universe operates "to a predetermined design in which all life, including humanity, has a part to play" (para.4). "Cosmic education allows children to develop a sense of awe and gratitude for the universe, their role in humanity" (para.4). The child is "satisfied, having found the universal centre of himself with all things" (para.3)

Blue Gum Montessori School (2020) in Western Australia says their "Montessori curriculum is organised into a spiral of integrated studies" in a "holistic approach" (Our Montessori Curriculum). St Pauls' Episcopal Montessori School (2018) in San Antonio, USA, says Montessori Education "views the child holistically, valuing cognitive, psychological, social and spiritual development" (The Montessori Advantage). St Paul's is described as offering "holistic learning and social diversity" (McNeel, 2013, para.5). The Montessori Institute Australia (2020) offers 'Holistic Education for Educators' (Homepage).

1.4.2 Steiner (Waldorf) education

The Association for Waldorf Schools of North America (2019) provides an overview of the history of Waldorf education, whose roots are "in the spiritual-scientific

research of the Austrian scientist and thinker Rudolf Steiner (1861-1925)" (Rudolf Steiner & The History of Waldorf Education, para. 1). The first Free Waldorf School for workers' children opened in a factory in Stuttgart in 1919 (para. 3). "According to Steiner's philosophy, the human being is a threefold being of spirit, soul, and body whose capacities unfold in three developmental stages" leading to adulthood (para. 1). Steiner developed a particular way of thinking about "what it means to be human" – a path of inner development he called 'anthroposophy' – with practical implications for every aspect of human endeavour – art, agriculture, education, science, medicine, religion (para. 6).

Morrison (2010) says that Waldorf schools are dedicated "to teaching the whole child – head, hands, heart (Waldorf Education: Head, Hands, and Heart, paras. 2, 3). Steiner "believed that education should be holistic" (para. 4). According to Morrison, Waldorf education "operates on a number of essential principles": Anthroposophy, respect for children's processes of development, eurythmy (Steiner's art of movement), and nurturing imagination (paras. 5-11). Eurythmy will be referred to again in Chapters Two and Five.

Morrison (2010) says anthroposophy is "the study of the wisdom of man", "a personal path of inner spiritual work" … "not tied to any particular religious tradition" which allows a new understanding of human being in terms of body and spirit (paras. 6-7). Steiner "believed that each person is capable of tapping the spiritual dimension" which assists "more meaningful learning" (para. 7). Respect for children's development processes, stages, and the "ways they learn", affects when

curriculum topics are introduced (para. 8). Waldorf education teaches “to all of the senses” (para. 15). It is usually possible to find a learning modality for children with special needs (paras. 14-16).[20]

The language used about Steiner schools in other countries echoes that above. In Sweden, Dahlin (2007) entitles an evaluation report: *‘The Waldorf School – Cultivating Humanity?*’ Dahlin notes from a comparative research study of municipal and Waldorf schools that “Waldorf parents tended more than Swedish people in general to have a view of society characterised by fellow feeling, humanism and solidarity with the disadvantaged” (p.20). Part of the research explored “how far Waldorf pupils develop the values and social competence necessary to become active members of a democratic and multi-cultural society” (p.23). One conclusion was that Waldorf pupils felt “responsible for social and moral issues” and “felt a responsibility for the future moral development of society” (p.25). They were “more inclined to refer to love, fellow feeling and civil courage” (p.27). “Waldorf teachers were seen to attach greater importance … to human dignity, equality and the environment” (p.28). There was a focus on the individual human being (p.57).

Grinberg (2013) describes Waldorf education as “a humanistic approach to pedagogy” (para. 4). Teachers aim “to transform education into an art which

[20] Morrison (2010) observes that Waldorf education is largely provided by independent schools. He says two of the less appealing features of Waldorf education to a broader public are the belief in a spiritual aspect of each child and Waldorf ‘humanistic education’.

educates the whole child – heart, hands, head – the essence in every person" (para. 6). "One of the goals is to provide young people the basis on which to develop into free, morally responsible, and integrated individuals, and to help every child fulfil his or her unique destiny" (para. 6).

Wood (2011) says The Steiner Academy in Hereford, UK, offers its "holistic educational model to all" children of all abilities (para. 1). The Academy "is a unique school that aims to be an idyllic place for children to learn" (para. 2). It "aims to provide an unhurried and creative learning environment that nurtures the whole child, giving equal attention to the physical, emotional, intellectual, cultural and spiritual needs of each pupil" (para. 3). Steiner Education Australia (SEA) (2020) says Steiner education "fosters the human spirit in children … allowing them to flourish in a holistic learning environment … oriented towards moral growth, social consciousness and citizenship" (para. 1). "Schools are grounded in working artistically, spiritually, practically and intellectually" (para. 2). "The values underpinning our education are gratitude, responsibility, collaboration, inclusivity, diversity and initiative" (para. 8).

Gidley (2008) asks: Do alternative pedagogies such as Steiner education have anything to offer an emergent global/ising world? Gidley says one of the obstacles to creating learning societies for the future is the model of Western culture and the default model of education promoted by globalisation, whose "primary tools" are economic development, "mass education and communication technologies" (p.242). Contrastingly, Gidley remembers "joyous learning" in her classes (p.249).

She hopes for “a real dialogue of pedagogies” that “might open general education” to processes that are “more integral, artistic, imaginative” (p.252). These may empower students to create wiser and more positive “futures for all” (p.253).

1.4.3 International Baccalaureate

The International Baccalaureate (IB) offers international education to students aged 3-19 years in 150 countries. The IB (2017) “aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect” (IB mission statement, p.1). “The aim of all IB programmes is to develop internationally minded people who recognize their common humanity and shared guardianship of the planet” (p.2). “The programmes emphasize the importance of making connections” between academic subjects and learning about the world (p.5). A learner profile places students “at the centre of an IB education” (p.3). The ten attributes of the profile “reflect the holistic nature of an IB education” (p.3). The attributes provide the foundation for the development of international mindedness (p.3).

The four programmes of the IB (n.d. 2020, Education Programmes) are: The Primary Years Programme (PYP), which “focuses on the development of the whole child”, the Middle Years Programme (MYP), which “encourages students to make practical connections between their studies and the real world”, the IB Diploma which “aims to develop students who have excellent breadth and depth of knowledge – students who flourish physically, intellectually, emotionally and ethically”, and the Career-related Programme (CP) which offers a “framework of

international education” leading to further education or employment. The circular diagrammatic models of the programmes express the concept of interconnected learning .

The IB says that education is really about instilling in students “the knowledge that will make them better learners and better people” (About the IB, n.d. 2020, para. 1). Students of IB programmes are encouraged to drive their own learning (Benefits of the IB for students, n.d. 2020), and to learn how to learn (Why the IB is different, n.d. 2020). The IB learner profile “describes a broad range of human capacities and responsibilities” beyond academic success (The IB learner profile, n.d. 2020).

Hare (2010) provides an interpretation of holistic education for teachers of IB programmes. Hare observes that there is currently no single definition of what holistic education means (p.3). He says it “aims to encompass all aspects of personal learning and growth”. It reflects ‘education of the whole child’, but there is little clarity of what this means either (p.3). Treetops School in Western Australia is both an International Baccalaureate and Montessori School. It offers the IB “because of its student-centred, holistic and international approach” (Treetops, 2018, IB Organisation, para.2).

Interim conclusion

International pedagogies conceive education in terms of human learning and development, and participation in the world. Their individual ideology and ontology

however is different. The IB conceives of better people and a better world through education, with students developing a sense of common humanity and responsibility to the planet. Montessori conceives of ‘cosmic’ education where everything is interconnected, and children develop a sense of this. This concept informs Chapter Six. All three pedagogies conceive, in different ways, of holistic learning which is discussed in Chapter Five. For Steiner educators all learning involves aesthetic and spiritual capacities. Some Steiner and Montessori educators write in terms of ‘whole child’ education which informs Chapter Four. Teaching is an art in Montessori and Steiner education. Teachers play a crucial role in joyous learning and human formation.

1.5 Schools:

A small selection of the variety of international schools providing for expatriate and/or local children, and of Australian local schools is described here. Schools identify unique purposes and concerns: Learning, values, individuals, humanity, and holistic education.

1.5.1 International schools and two UK schools

Sri Aurobindo International Centre of Education is “an integral part of Sri Aurobindo Ashram”, situated in Pondicherry, India (Sri Aurobindo Centre of Education, 2019). The Centre “serves as a field of experiment and research in education” (para. 1). Sri Aurobindo founded the Centre as one way to prepare “future humanity to manifest upon earth a divine consciousness and a divine life” (para. 1). The Centre

is international and “aspires to represent the cultures of different regions of the world in a way that is accessible to all” (para. 3).”

The Centre of Education “strives to evolve a system of integral education in an environment that inspires children to develop the five essential aspects of personality”: Physical, vital, mental, psychic and spiritual (2019, Objectives and Approach, para. 1). “Life has a divine purpose and one of the most important tasks of education is to lead the student to discover … the aim of life and the specific role” he/she “has to play in it” (para. 2). Sri Aurobindo is quoted as saying: “The new aim is to help the child to develop his intellectual, aesthetic, emotional, moral, spiritual being and his communal life and impulses out of his own temperament and being" (para. 2). “A child needs to be helped to develop integrally and harmoniously” (para. 4). "The aim of education", the Mother wrote, "is not to prepare the individual student to succeed in life and society, but to increase his perfectibility to the utmost" (para. 6).

The goal of the United World College of South East Asia (UWCSEA), situated in Singapore “is to educate individuals to embrace challenge and shape a better world” (Guiding statements, n.d. 2020). The mission of the United World Colleges “movement” is to unite people, nations and cultures for peace and a sustainable future” (ibid). The school’s values include compassion and moral responsibility. The mission of Hanahauoli School in Hawaii is to develop children as unique individuals with a “sense of groundedness, demonstrated by a respect and

responsibility to self and others, within a diverse and global society" (Hanahauoli, 2020, Mission, para. 4).

The New Forest Small School (2020) in the UK is not formally an international school, but has a diverse enrolment. It offers a "Framework of Aims", conceived in terms of "Learning for Life". The school's philosophy "is founded on the belief that the full potential of children may only be realized when their sense of well-being and belonging" is optimal. The aims for primary and secondary students include self-awareness and mental well-being, self-confidence, self-motivation, social awareness, physical and academic skills. The secondary aims expand academic skills to specify linguistic and sustainability skills, and mathematical, scientific, artistic and creative thinking. The school works with each child's natural and individual ways of learning.

Drumahoe PS in Northern Ireland (2020) provides a statement of school aims. The school philosophy provides "an overall framework", together with specific aims. The "whole school aims stress" "recognition of the individual", "variety of experiences, skills … and knowledge to fully develop each child's potential" (For Parents, School Aims). The school philosophy is concerned to create a stimulating learning environment, a caring community in partnership with parents, and a caring attitude towards the environment. The school wishes to enhance students' self-esteem, curiosity, social awareness and empathy, creativity, and health, and provide a "differentiated curriculum" (ibid).

1.5.2 Australian schools [21]

The principal of Scotch College, Adelaide, defines what he considers to be a great school. Scotch exists to educate, to transform, to prepare the next generation to have the most positive, enduring impact on society. Education like this "fulfils the individual and benefits the nation and the world. It is a big vision" (Scotch Reports, 2017, pp.4-5). The school is about to build a Well-being Centre in 2020-2021.

The aims of The Cathedral School Townsville include students' "understanding that the spiritual and moral aspects of life are central to humanity". (Our Mission. n.d. 2020). Peter Moyes Anglican Community School in Perth "aims to focus on the needs of the whole person – intellectual, aesthetic, moral, spiritual, emotional, physical and social" – "the focus of school life must be" holistic. [Our School, Vision and Values. n.d. 2020). Rivermount College in Queensland (2015) framed its educational aims to meet the Australian goals of 2008, but in terms of a "Christian worldview" (Our College, Aims). The College "aims to educate the whole person, … to integrate the spiritual, mental, physical and social aspects of training" (ibid).

The Mission of Barker College, Sydney (n.d. 2020) is "An Anglican community inspiring each learner, every experience, every day" (About Barker). The Vision of the school is: "To be a leader in Christian education that is characterized by a global vision that inspires hope". The school seeks to equip young people who,

[21] Searches of over 100 public schools around Australia have identified few statements of aims. None of those searched refer to the current Australian goals of 2008, 2019.

when they leave, will be “equipped and prepared to embrace the challenge of the future”, and have a personal “capacity to make their own positive impact on the world” (About Barker). The Head of school says “it’s a school that … intentionally allows people to thrive in a holistic sense – emotionally, physiologically, … academically” – “those things that form together to make a fully formed human being” (From the Head).

Malek Fahd Islamic School, NSW, is the largest Islamic school in Australia. The Mission statement (n.d. 2020) says the school “is founded to provide opportunities to its students to excel in this life and the Hereafter”. “The school aims to develop each child: Intellectually, physically, emotionally, socially, religiously, morally, … and vocationally so that the children are happy and successful citizens of Australia” (para.2). The School Vision includes encouraging students “to reach their potential and develop human attributes of care and compassion, … responsibility”, and by community participation “understand their own identities in the world” (Our Vision).

The Ngaanyatjarra Lands School (n.d. 2020) comprises eight campuses spread across the Western Desert of Western Australia. The school “has developed specialised programs” to support “children’s social, emotional, physical and cognitive development” and growth (Education programs). The school’s “purpose is to ensure our students are prepared to live a good life on the Lands”, to be future leaders, and to develop the skills and knowledge to” interact meaningfully with the outside world … “if that is what they wish to do” (Our School’s Purpose). The Ngaanyatjarra people “maintain a rich cultural heritage that is based on a close

connection with the land" and the "Dreaming stories (tjukurrpa)" (Our Community, The Ngaanyatjarra People).

1.6 Early childhood education and care (ECEC)

The conception and administration of early childhood education and care (ECEC) - or early childhood education and development (ECED) - varies nationally. Even so, the language of statements about ECEC is typically different from that associated with schooling. The focus is different. ECEC is quite explicitly concerned with children and their development – whether from 0-6 years or 3-6 years. The issues of concern to authorities and professionals concern bodily (including brain) development, health and hygiene, the contexts (thesis underline)[22] (of families, communities, cultures and geography in which children are raised (including the displacement effects of poverty, violence and war), and the impact of all these factors on young children's education in literacy and numeracy and on a country's human capital and economic future.

The thesis will consider ECEC again in Chapters Four and Five when discussing concepts of whole child and holistic learning. This Section prefaces that discussion with a few examples of the conceptual language and 'voice' of national statements about early childhood education.

Early childhood education in Australia is provided by parents, caregivers, childcare

[22] 'Contexts' become important to the thesis discussion of Chapters Four and Five.

centres and preschools, and the urban, regional and remote communities where they live. The education agenda is set out in two reports, provided by Australian Government agencies: *The Early Years Learning Framework* (EYLF) (Council of Australian Governments (COAG), 2009), and the accompanying *Educators' Guide* (Australian Government Department of Education and Training, 2010).

The EYLF offers a 'vision for children's learning' (2009, pp.7-10) and for educators (2010, p.4). "Fundamental to the Framework is a view of children's lives as characterised by *belonging*, *being* and *becoming* (sic)" (2009, p.7). Their earliest development and learning takes place through the relationships of family and community, through which they "construct their own identities and understandings of the world" (p.7). The Framework expects five Learning Outcomes: children have a strong sense of identity; children are connected with and contribute to their world; children have a strong sense of wellbeing; children are confident and involved learners; children are effective communicators" (2009, p.8).[23] Early childhood practice includes 'holistic approaches'[24] (2009, Figure 1. p.10; 2010, p.5).

The Educators' Guide (2010) declares the EYLF Framework "embraces a vision for a new Australia" which is inclusive, respectful, responsible, socially equitable (p.3). It recognizes the "ancestral relatedness of indigenous people" (p.3). It offers "a

[23] Connor (2011) examines the relationship of the general capabilities of the Australian curriculum with the key learning outcomes of the *Early Years Learning Framework.*

[24] This is a rare use of the term 'holistic' in Australian education documents.

clear focus on children's learning and well-being" (p.3). There is a visual image of a child at the centre of the Early Years Planning Cycle and a conception of learning being the process in which children and educators are engaged.

Both Ireland and NZ have specific platforms for early childhood education. These also are conceived in terms of learning and personal development. The National Council for Curriculum and Assessment (NCCA) of Ireland created *Aistear: The Early Childhood Curriculum Framework* (2009), which "celebrates early childhood as a time of being", enjoying and learning (Title page). A contributing research paper by French (2007), responded to the question – "*How should we envision and understand the child as a young learner?"* (sic) *(*p.6). French says: "Any exploration of how children learn and develop is informed by a particular view of the child" (p.9). She wants to "tease out how learning and development takes place" (p.8). She notes parents' interest in "*children's holistic development*" (sic), (cognitive, emotional and social) (p.6). "Children's holistic approach" interweaves their multiple domains of learning – social, emotional, personal, physical (sensory and motor), cognitive, linguistic, creative, aesthetic, moral and spiritual development (p.20).

The NZ report to UNESCO (2015) refers to Te Whariki, the NZ early childhood framework for early learning and development in a sociocultural context. "It emphasises the learning partnership" between teachers, parents and families (p.10). The holistic curriculum has been envisaged as 'a woven mat' (a whariki), where teachers respond to "children's learning and development in the ECE setting and wider context of the child's world" (p.10). The curriculum "reflects the holistic

way children learn and grow" (p.10). At the centre of Te Whariki are four broad principles and from these follow five strands: five essential areas of learning and development.

Each of these conceptions of early childhood education are framed in terms of 'holistic approaches' and 'holistic curriculum'. In Finland also, the "mission of ECEC is to promote children's holistic growth, development and learning" (Finnish National Agency for Education, n.d. 2020). Discussion of 'holistic' approaches, curriculum and learning in early childhood will be resumed in Chapter Five.

Reggio Emilia [25]

Achtner (1994) makes these comments about the Reggio Emilia learning environment.

> A visitor to any one of the so-called asili-nido, literally 'nests' for infant/toddlers, or of the pre-schools or scuole materne, 'maternal' schools for children up to the age of six, will notice immediately that the people inside are enjoying themselves. Each 'nest' has an atelier, a large studio/workshop-like art room, and an atelierista, an art teacher, who works with the children and their teachers. Instead of taking formal art lessons, the children learn to develop various symbolic languages, drawing, painting,

[25] Reggio Emilia early childhood education for children to 6 years of age was initiated in the local villages of one regional city of Italy, north west of Bologna, after World War II by a small group of women and led at their invitation by teacher and psychologist Loris Malaguzzi [Achtner, 1994]. There are now c.40 local centres.

> constructing as a way of learning to understand the world around them and of expressing their own ideas. The children are encouraged to use their imagination to express their view of the world around them (paras. 11-12).

Gibson (2014) asks: What is the Reggio Emilia system? How does it work? (para. 1). She explains that the Reggio Emilia Municipal Infant-Toddler Centres support "children and families who experience poverty and 'children with special rights' (not special needs/disabilities)" (sic) (para. 2). All children "are considered full of potential and possibilities" (para. 2). Challenges are explored such as – "What does it mean to educate? How do children learn? How can we make children's thinking, theorising and learning visible?" (para. 3)[26] "The Reggio Emilia approach promotes a rethinking of childhood" to "value children's possibilities, potential, capabilities and competencies" (para. 4). It values relationships, documentation of observation, project work, active listening. The "many ways children express themselves (are) called the '100 Languages', with a strong emphasis on the visual arts" (para. 4).

The phrase "The Hundred Languages of Children" (derived from a poem by founder Loris Malaguzzi) refers to the children's "endless potentials" and their multiple ways of seeing and being (Reggio Emilia. The 100 Languages). It has become a metaphor for the Reggio Emilia approach. The hundred languages are the languages of all human beings (Reggio Children, 2019, para.1). Babiuk (2006)

[26] 'Visible learning' is discussed at Section 3.2.3.3.

sees the phrase having these keystones. “The community has an image of the child “as … capable, resourceful and powerful with interesting thoughts and strong feelings about their world” (sic) (p.1). “Children have rights rather than needs. They have potentials and gifts that need to be nourished and allowed to unfold” (p.1). “The use of high quality materials, which allow for artistic expression in paint, paper, wire, … natural materials, clay, light, dance, music, creates the opportunity for children to express themselves in “hundreds of languages” (sic)” (p.1). Babiuk is interested in analyzing the approach “in relationship to holistic learning and spirituality in education” (p.2). “Holistic learning can be described by its honoring of … connections” (p.2). This approach will inform Chapter Five.

Houck (1999) describes the Reggio Emilia approach as a highly “successful implementation of a holistic approach to constructivism in action” (para. 1), to “educating the whole child” (para. 4). “Each child is viewed as unique and the protagonist of his/her own growth” (para. 1) “Everything is connected in the child’s world: social, emotional, physical, intellectual and cultural factors” (sic) are all part of educating the child (para. 1). The “aim of education is growth” (para. 1). TNS Beaconhouse (2018), “the first school in Pakistan” to use the Reggio Emilia approach, also describes it as a “holistic approach to teaching and learning”. It is a “philosophy”.

Conclusion

Statements forming the landscape of education and schooling are aspirational in their desire for individual, societal and world development. There is some

commonality of conceptual language, but it is not universal. There appears not to be a common nor unifying narrative. The thesis has not identified an epistemic framework, nor conceptual framework within which education statements are developed and phrased.

These ideas have been raised in the Chapter for development as the thesis evolves.

- The overarching perspective of the thesis is that school aims which focus both on individual human learning and development, and on individual and collective participation in the story of humankind are the 'ultimate' aims for and of education.
- There is "an urgent need to seek an alternate approach in education, which would embrace the human body-mind and spirit in a more holistic and comprehensive way" (Ming, 2012, Preface, p.xvii).
- "Everything is connected in the child's world: Social, emotional, physical, intellectual and cultural factors" are all part of educating the child (Houck, 1999, para.1). To these are added moral, aesthetic and spiritual factors.

Having explored the first element of the UNESCO (1972) statement of the 'aims' of education, the thesis now proposes to examine the second and third elements of the UNESCO statement: Human 'being' and 'human learning'.

CHAPTER TWO Human nature and human being

Introduction

Faure and UNESCO (1972) conceive of an ultimate aim for education in humanist terms (Section 1.3.1). The aim of education is to develop the 'complete man', to "learn to be" [throughout life], "*to enable man to be himself,* to *'become himself'* (sic)" (1972, p.vi, p.xxxi). Chapter One examined concepts of educational aims. This Chapter investigates the second element of the UNESCO proposition: Human nature and human 'being'. Chapter Three will investigate human learning. Chapter Four examines concepts of human completeness. The concept of human 'becoming' informs the second half of the thesis.

There are two semantic senses of human being: One is the sense of existing, of living, the other refers to a concept of the distinctive nature of being human. The thesis' position is that Faure and the UNESCO Commission Report (1972) do not offer a developed concept of 'human being' in either sense,[27] nor a concept of 'self'. The thesis offers a potential approach to these concepts.

Faure and UNESCO (1972) do however offer these ideas provoking the thesis argument. Whatever the nature of 'human being' is, it is capable of completeness and integration (p.vi, p.156). Human integration is conceived in terms of "physical,

[27] The Report says "scientific humanism rejects any preconceived, subjective or abstract idea of man" (p.146).

intellectual, emotional and ethical" human dimensions (pp.155-156). Human beings are capable of development such that they care for other human beings and for the planet on which human beings live (p.xxv). Education is the means to that development (p.150).

The review of aims for schooling and early childhood education in Chapter One sought to identify examples of education aims conceived in terms congruent with those of UNESCO (1972), particularly language referring to human dimensions: Physical, Intellectual, emotional and moral (ethical). Statements from the Ministry of Education in Singapore (Section 1.2), from Steiner education (Section 1.4.2), and from individual schools such as Sri Aurobindo Centre, and Peter Moyes School (Section 1.5) are indicative. Chapter Four considers concepts of complete human being conceived in these and similar terms.

However, while language such as "physical, intellectual, emotional and ethical" (or moral) is commonly used in educational parlance, it should not be assumed at this point in the thesis as normative. The thesis research has found that language like this is not used consistently internationally to suggest human nature or human completeness. There are other terms used by scholars and professional writings in Chapter One, including the UNESCO report (1972), to represent assumptions and constructs about human nature and being in the context of education and schooling. This Chapter explores those terms.

The other terms used commonly in educational writings to refer to attributes of human beings are: ‘Mind’, ‘body’, ‘spirit’, ‘self’, ‘intelligence’, and ‘creativity’. There are also other terms for the ‘attributes’ which human beings possess or demonstrate: ‘Capacities’, ‘capabilities’, ‘qualities’, ‘competencies’, and ‘potential(s). Some of these attributes may be ‘innate’. Even so, whatever their deemed common attributes, human beings are individually different in their persons, development, and ways of ‘being’ (Section 2.6).

The research has been unable to identify agreed concepts of these other terms in educational discourse. Moreover, the research has not identified a concept of human nature, and its completeness and integration, using language of mind, body, spirit, intelligence, capacities and innate attributes. Faure and UNESCO (1972) do refer to self and creativity.

The terms are however so pervasive in educational epistemology, that the thesis presumes an obligation to tease out a concept of human nature and its potential integration, in these terms, before developing a model of human wholeness and integration in the language of dimensions used by UNESCO (1972). At this point, the thesis does not wish to treat the selected terms as alternative or apposite ideas to “physical, intellectual, emotional and moral” (UNESCO, 1972, p.156). Rather, they are part of the shared conceptual landscape.

This Chapter explores human nature and being, through the lens of scholarly theory and of six conceptual groups:

- Mind, body, brain and sense(s)
- Self – 'self-phenomena'
- Intelligence(s), creativity
- Capacities, capabilities, and potentials
- Innate qualities of human nature
- Individual focus and individual differences

The concepts are conventionally spoken of as discrete entities but they are not *per se* independent of each other. The Chapter concludes with a suggested linking model.

2.1 Human nature

Trigg (1999), Stevenson (1987), and Stevenson and Haberman (2004) provide historic overviews of scholarly concepts of human nature from various epistemic traditions: Philosophy, theology, biology, psychoanalysis and social science. Wolff (1989) provides a perspective with respect to childhood, and the development of personality. Stenmark (2012) discusses a philosophic concept of human nature from the perspective of both evolutionary science and Christian faith. Marshak (1997) reviews the teachings of Steiner, Sri Aurobindo and Inayat Khan and introduces a holistic perspective.

Trigg (1999) avers there is "no single, simple definition of human nature in the history of philosophy" (p.1). The largest philosophical assumption is that there is such a thing as human nature (p.3). Thinking about the nature of humanity and its place in the world involves thinking about the meaning of life (p.2). Trigg believes a

concept of human nature has become more complex over the last century as the impact on individuals of genes, society, and particular experiences has been explored. Notwithstanding, he sees “the character of humanity and the nature of the individual person” as linked (p.1). He declares The “important part of being human is being a distinctive and unique individual” (p.29). ”Being *me* (sic) and being human cannot be separated” (p.29). Trigg identifies *(inter alia)* these concepts in philosophic tradition: Mind, intellect, linkage of soul and body, morality, responsibility, self-concept, religious belief and care of others.

Stevenson (1987) says much of the meaning and purpose of life depends on our view of human nature (pp.3-4). Different views lead to different ‘ought’ (sic) to do conclusions (ibid., Stevenson and Haberman, 2004, p.3). Different conceptions of the “essential nature of the human being” and of the universe provide different diagnoses of “what’s wrong” and the “future visions” of any means of resolution (pp.6-9). Stevenson (1987) says an “ideology is based on a theory of human nature” (p.9). However, both Christian and Marxist ideologies ask: Is an individual really free and responsible for his/her actions? (p.13). Stevenson and Haberman (2004) ask: Is there an “innate nature” of human being (p.2)?

Wolff (1989) assumes that most human beings have “Innate abilities to imagine how others feel and to respond to them as they would like” (p.1). She wants educators to have empathy with children and respond to their perceptions of themselves and how they think about the world. Wolff writes in terms of child capacities (for thought and action in social settings), emotions and self-esteem,

intelligence (which defies definition (p.20), developmental processes, temperament, personality, individual differences, of innate and acquired abilities (Chapters One and Two), of an inner and subjective self (Chapter Seven).

Stenmark (2012a) asks “Is there a human nature? He reviews contemporary philosophical argument. He argues both evolutionary theory and Christian faith can accept the claim there is a ‘human nature’ (Abstract). However, what the “content” of that is needs further exploration (p.901). Stenmark discusses a concept of human nature in terms of properties (pp.893-8). He believes it is “plausible to think that human nature is constituted” by both intrinsic and relational properties (p.899). He says Intrinsic properties are capacity-oriented and include self-consciousness whereas relational properties, such as ‘being a father’, are extrinsic. These latter presuppose “abilities or capacities” such as the ability to love, and to relate to God (pp.899-900).

Marshak (1997) sees Steiner, Sri Aurobindo and Inayat Khan as offering a common vision of human nature, human becoming, the universe, and the place of human beings in it (p.3, p.6). Their common vision of human nature is that human beings “are complex systems of energy” (p.7). Human potential and growth is “holistic and Integrative in character, describing the body, emotions, mind and spirit, and the system of interactions among them” (p.3, pp.6-7). Marshak says each of these thinkers saw human development as “an unfoldment of human potentials” (p.10). Each child is an “organismic whole” with his/her own “inner teacher” (p.10).

These few selections indicate the thesis' view that there is no accepted view of human nature nor of 'being' undergirding school education. However, the review shows the common use of each of the terms to be discussed below: Mind, self, intelligence, capacities, individual differences and innate qualities. Together these provide either a conceptual alternative or congruent framework to Faure's proposition. The thesis will attempt some reconciliation of the two approaches and pursue Marshak's language of "holistic and integrative" in Chapter Four.

What is also of importance to the thesis argument in the selections above is the linkage of views of human nature to the purpose and meaning of life, to a sense of what ought to be done to resolve what's wrong, to ways of behaving and feeling empathically, to an individual human capacity for relational agency. Even so, and even If these concepts of human nature are assumed, they prompt further questions. How are they to be developed? How do they contribute to educating for humanity? The argument in Chapters Four to Six offers a response.

2.2.1 Mind, body, brain and senses

Mind, body, brain

The concept of human mind, of a child's mind (Cohen, 2002; Eliot, 1999; Ryle,1949; Trigg, 1999; White 2002), is foundational among all the attributes accorded to the human species by philosophic and psychological epistemic traditions, by Christian theology and by educational scholarship. Together with 'self', and 'soul', 'mind' is one of the most difficult concepts to explain. It is abstract. It is an inferred, dominant aspect of human nature. 'Mind' refers to something that

is not the brain, not intelligence, and not apparently a physical nor describable human attribute. Yet it refers to some aspect of human beings that thinks, possibly feels, acquires and processes language and knowledge, makes judgements, reflects and remembers, is both conscious and unconscious, and is perhaps responsible for what 'I' do. The possession and exercise of 'mind' is somehow critical to human 'being'. Early childhood education and schooling nurture the development of 'mind.'

In Chapter One, the term 'mind' was used by Whitehead (1929, p.12) – "morality of mind", and Ming (2012, p.xvii) – "body-mind and spirit" (Section 1.1), by the Japanese Ministry of Education – "sound in mind and body" and the Singapore Ministry of Education – "healthy mind and body" (Section 1.2), by Montessori Australia "curiosity of mind" (Section 1.4.1), by the IB – "internationally minded people" (Section 1.4.3), the Sri Aurobindo Centre – "life-energy and mind", and Marshak (1997) – "mind and spirit" (Section 1.5.1). UNESCO (1972) refers to a "scientific frame of mind" (p.91) and training "scientific minds" (p.148). Goleman (1995) (discussed below at Section 2.2.3) says that "in a very real sense we have two minds, one that thinks and one that feels" (p.8).

The phrasing in three of the above sources suggests a mind-body nexus. A critical question pursued by historic scholarship until the present has been: What is the relationship of mind and body? How do they affect each other? The dominant

philosophic position, until Ryle (1949),[28] was that they were somehow two different things. Henriques (2011), Robinson (2016, p.2), and Tanney (2009, p.xii) below refer to the "mind-body problem" which they say still influences scholarly thought and remains unresolved.

Tanney (2009) sees Ryle (1949)[29] as offering a cautious theory of mind, challenging the traditional dualistic distinction between mind and body. Tanney describes it as the philosophical conundrum of the *mind-body problem* (sic), that the mind and body are somehow different or distinct but interact (p.xii). Henriques (2011) says the mind-body problem also remains unresolved in psychology (para. 1). He suggests the problem is rather a consciousness-mind-brain-body problem (para. 3). Robinson (2016) says "there is a mind-body problem" because "consciousness and thought … seem very different from anything physical and there is no convincing consensus on how to build a satisfactorily unified picture" (1.1, p.2).

These examples suggest a principle influential in the design and practice of schooling during the twentieth century. 'Mind' and 'body' were conceived as separate aspects of human being, to be developed separately. 'Mind' was to be developed in a cognitive curriculum dependent on thinking, memory, words and

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[28] Commentaries on Ryle's work include Dolby (2014), O'Sullivan (2017), and Tanney (2009, 2015). The relevance of the citation here is that Ryle is recognised for the phrase and title 'Concept of Mind' (1949), and for challenging 'mind-body' dualism.

[29] Bowen and Hobson (1974/1987, p.13) say Dewey rejected body/mind dualism.

reflection. Bodily activity could almost entirely be contained by sitting at desks, talking, listening, and writing. ‘Body’ was, if at all, the province of physical education curriculum and sports.

Ming (2012) alone in the above examples refers to “body-mind” implying they are linked (p.xvii). A linked perspective is illustrated further in the discussion below, but is not yet conclusive in the way schooling curriculum is conceived and learning conducted. The relation of mind and body, their difference of privacy and sensory access, and how each contributes to or functions with respect to the other, needs further conceptual and practical development. Voices from neuroscience (Chapter Five) are more confident of the principle of their interconnection.

White (2002) offers one concept of linkage of mind and feelings. “A child’s mind”, he says, contains “two radically different kinds of phenomena”, and there are consequences for how education relates to a child’s mind (p.24). Thinking, recalling, seeing, require “intentional objects” (p.24, p.58). Pains and sensations don’t (p.24). White uses ‘mind’ to mean “concept-involving mind”, but children’s concepts, he says, include not only those of perceptions, beliefs, intelligence, but imagination, desire, emotion (p.32). There are different aspects of a child’s mental life, but they are interconnected in some way in a “whole child”, as a “holistic unit”[30]

[30] Cohen (2002) says it is problematic to explain how a neurophysiological system operates as a whole. This is a “key challenge for the twenty-first century in explaining what causes or drives cognitive development” (p.30).

(p.178). White also reflects on growth and development of children's minds. He has found that a biological theory of growth implies some kind of ceiling to children's mental growth (p.77). He wants education rather to recognise that children have different individual minds. He cites Gardner's similar perception (1993, p.71).

Jensen (2000) says the notion of an integrated human ecosystem encompassing mind and body is at the heart of his work (p.ix). The mind cannot be educated without the participation of the body. The body "frames" the learning context for the mind (p.15). There are multiple states of mind affected by circulation, movement, physical activity, and by the body's chemical messengers (pp.27-9). A change of mind can be achieved by a change of body (p.38).

Previously Jensen (1998) explored the emerging biology (and chemistry) of how the human brain works and the relationship of brain and mind. He believed at the time that there wasn't yet an inclusive coherent model of how the brain works. He treats mind as equivalent to the process of the brain (p.15). Darling-Kuria (2010) cites Jensen (1998, 2005) (p.1). She sees human beings as "wired to be works in progress" (p.1). Educators need to learn to teach with the "brain in mind" (p.5). "Brain compatible learning requires taking a holistic approach to helping a child to learn to develop his whole brain" (p.1).

Suarez-Orozco and Sattin-Bajaj (2010) consider the "new science of engagement" of mind, brain and education (Part II). Damasio and Damasio (2010) affirm that education is about "enriching and shaping human minds" (p.61). Brain science will

contribute to how teachers teach and students learn, and to changing current views of humanity (p.61). The knowledge of the human mind gained from neuroscience tells us about the "workings of the *mind-making brain*" (sic) (p.61). Damasio and Damasio (2010) say that in simple terms, minds are sequences of images of different sensory types, including words and feelings (p.61). The human brain is "the indispensable substrate for the human mind" (p.62). Mind does not mean consciousness. The larger part of its operations is not conscious. The conscious mind is associated with the emergence of 'self'[31] (pp.62-3). However again the mind relates to the body and interacts continuously with it (p.64). Koizumi (2010) extends the discussion and introduces (from his consideration of the Ross School model) the notions of '*scientific mind'* and '*artistic mind'* (sic) (pp.88-9).

Ramachandran (2002, p.xxxv) declares that "the functions of the human brain are the last major challenge to science". He asks: How do they give rise to the broad spectrum of human abilities called consciousness, mind, human nature? There is need for a "standard reference source" for the brain and central nervous system, which will include dreams, memory, facial recognition, cognition, language, left-handedness. He is certain however that the brain's neural networks comprise highly interconnected processing units, or nodes (p.239).

The discussion above claims that mind, body and brain, feelings and senses are physically linked and interact. Marshak (1997) in reviewing the teachings of

[31] The concept of 'self' is considered below at 2.2.

Steiner, Sri Aurobindo and Inayat Khan, sees them as offering a common vision of human nature conceived in this way: Of human becoming and the universe, of human potential, wholeness and growth, which is "holistic and Integrative in character, describing the body, emotions, mind and spirit, and the system of interactions among them" (p.3).[32]

Hampton (2014), observing there is no single agreed definition of 'mind' (para. 2), asks "What's the difference between the mind and the brain?" She refers to Siegel (2010) who proposes the concept of 'mindsight' which integrates the different parts of the nervous system to cultivate well-being (para. 9). Siegel (2010) proposes a human "triangle of well-being"[33] where the three interconnected points are the brain and nervous system (receiving sensory information), the mind (which monitors information and energy flow), and relationships (where attachments impact on brain structure). The model has gained some interest but not widespread adoption.

There are other fundamental questions to be resolved epistemically for educational practice besides What is mind? and What is the relationship of mind to the human body – brain and senses? These questions include: What is the relation of mind

[32] The term 'spirit' has been referred to in the discussion of Steiner education in 1.4. It is revisited in 2.3 'Intelligences', and in Chapters Five and Six..

[33] Stevenson (1987, p76) refers to Freud's view that individual well-being depends on a harmonious relationship between various parts of the mind.

and language?[34] What is the relationship of mind and feelings? Does the mind exercise a moral, choice, and/or willing function? Does it relate to personality or temperament, to intelligence, to memory? Can it be developed, improved? How? Is the mind conscious only, or also subconscious, even unconscious? Is the child's mind the same as an adult's and capable of the same or similar functions? Is the content of each human mind privy to each individual, or is there a 'meeting of minds' in some way? Each of these questions concerns school educators. The thesis has no answers but suggests that a first step is recognition of the principle of the interconnection of mind and body (including the brain and senses).

The word 'mind' is also used to mean group opinion or decision as in 'common mind'. A relatively new term in contemporary parlance is the term 'mindfulness'[35] which refers to paying attention subjectively to personal thoughts and feelings, and accepting them without judgement of being right or wrong. It is also used to represent the practice of breathing or meditation referred to in Chapter Six.

Senses and sense

Two other terms are relevant here. The words 'senses' and 'sense' (as both nouns and verbs) are used to refer to capacities or activities of body and mind. The

[34] Chomsky (in Arnove, 2007, p.248, p.291) sees language as a special faculty of the human mind.

[35] The values of Ross School, NY (Chapter Six) include 'mindfulness'.

traditional view of the body's senses are those of sight, hearing, smell, touch and taste.

Montessori and Steiner education propose a focus on the child's senses[36] because it is through these, and only through the involvement of these that a child learns naturally and more wholly. Both pedagogies believe it is unnatural to teach cognitively (focused on knowledge and words) without recognising and understanding the necessary part played simultaneously by movement and touch particularly. Steiner emphasised also the sensory experience of nature, of the seasons. In some conventional schooling settings, there are window plants or outdoor gardens, small animal pens and nature walks, but Steiner and Montessori want more than this. Their sensory approach applies all day, every day, throughout formative schooling, not just in early childhood contexts.

Steiner's concept of eurythmy (Morrison 2010, pp.161-6)[37] believes that as children learn to read, they learn and become word letters, by feeling and experiencing the letters and sounds as they move and dance to music. 'W' becomes 'wind and wave and walk', "S' becomes, in some sense actually *is* [Thesis italics], 'slide and slither and smooth and silence'. In a Steiner school, all children learn to work with wood. For Montessori, children's touch is as primary as sight and sound. Children learn

[36] Cleverley and Phillips (1986, p.20) attribute the emphasis on 'senses', carried forward in Montessori's work, to John Locke (1689).

[37] Morrison (2009) also says that because Waldorf education "teaches to all the senses", it can find a learning modality for children with disabilities and differing ways of learning.

from and through sensory-motor materials and activities. The wooden soft materials of a Montessori classroom are essential to a child's understanding of number, quantity, shape and size. Children also move quietly throughout the learning space – the thoughtfully prepared environment – as they respond to their "inner directives" (Standing, 1984, p.xix). A child constructs "a sense of self through movement" (Standing, 1984, p.230).

Chapter One has illustrated the expectations of Montessori and Steiner pedagogies, of specific schools and some education authorities, that school education concerns itself (equally) with all these deemed aspects of human nature – body, spirit, senses, feelings, social being - whether they reside in the human mind or are linked to it in some ways educators may not yet understand.

The term 'sense' is used differently in the thesis sources to refer to other concepts of deemed (assumed) human capacities (Abbott and Nutbrown, 2001; Archer, 2000; Emmons, 2000; Estep, 2003; Gardner, 2006; Gertraud, 2011; Klemme, 1999; Marshak, 1997; Standing, 1984; Zohar, 2010). These other concepts of 'sense' are a long list: Sense of (separate) self, identity, esteem, personal needs, satisfaction, belonging, mastery, dignity, well-being, inferiority, community, morality, social responsibility, the world, harmony, reverence, the sacred, place, wonder, expectation, purpose, meaning, trust, truth, and time. There is 'common sense'. There is 'making sense'. These senses are thought to reside in or be properties of the human mind and nervous system. They are all somehow aspects of learning to be human. The critical question is: How are they to be identified and

developed, and developed in ways that express not only self-interest, but altruism? The thesis offers a way forward, in principle.

2.2.2 Human 'self'

The concept (construct) of 'self', of 'a' self which is somehow 'I', "me",[38] which I can sense,[39] feel, refer to in thought and speech reflexively, but not describe nor show in explicit material form to others, has also concerned western[40] philosophy from Aquinas to Wittgenstein (Trigg, 1999). There is no current single conceptual definition. 'Self' is perhaps a 'soul', but it is not my mind,[41] body nor brain. The "nature of the self" is "at the heart of psychology, driving many of its most urgent and profound questions" (Strohminger, Knobe & Newman, 2016, p.1). Again the "literature is so vast, the self is conceptualized in many different ways" (ibid. p.1).

'Self' has also entered the field of contemporary biology in the search for the areas or activities of the human brain associated with a sense of self.[42] Individuals vary in their sense of self. Heatherton, Krendl, Macrae and Kelley (2007) say the question

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[38] Gecas (1982) and Woolfe (2013) credit James (1890) with the distinction of knower ('I') and known ('me')

[39] Woolfe (2013) cites Hood (2012) who argues that 'sense of self' is all there is. There is no 'self' beyond this. 'Self' is an illusion. The brain invents 'narratives'.

[40] An Indian eastern tradition of the divine and human self may be found in Ram-Prasad (2013). Refer also Stevenson and Haberman (2004, pp.32-5).

[41] Deen (2012, p.73) says Descartes and Berkeley identified 'mind' with 'self'.

[42] A research team at the University of Iowa [Riehl, IOWA*Now,* 2018] exploring the roots of human 'self-awareness', believe their study points to a complex, diffuse patchwork of brain pathways involved in its function and development.

for psychologists of “how activity in the brain gives rise to the unitary and coherent sense of self that exists across time and place” remains unanswered (Chapter One, first page). Thagard (2014) proposes that the self is a complex system of four interacting levels of social, psychological, neural and molecular mechanisms. The self is “a theoretical entity hypothesized to explain a huge array of psychological phenomena” (para. 5). It exists, “but as a highly complex, multilevel system of interacting mechanisms” (para. 5).

The key ideas of ‘self’ from the philosophic and psychological traditions, including psychoanalysis (Bowen & Hobson, 1987, pp.306-9) are that ‘self’ is associated reflexively (self-) with ‘consciousness’ (Smith, 2020), with ‘awareness’ (Elias & Arnold, 2006, pp.76-82; Estep, 2003, p.1; Goleman, 1995, pp.46ff; Pound, 2013, p.81), with ‘knowledge of self’ (Sellars, 2008; White, 2002, Chapter 8) and with self-view, particularly self-esteem (Bruce, 2011, p.201). ‘Self’ and/or a sense of it (in ‘myself’) may or not exist before language[43] facility is achieved, but the formation of a sense of self, of ‘selfhood’, which has agency[44] to choose and to do, to which I have a right and for which I am responsible, is a key part of human nature and its potential development.

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[43] Berk and Winsler (1995) discuss Vygotsky’s theory of the function of language in the developmental relationship between external (other) oriented cognitive activity and internal (self-directed) activity (pp.22-24).

[44] The concept and function of agency, of self-generated actions, is referred to elsewhere in this Chapter (creativity, individual focus, Conclusion), and in Chapters Three and Five.

Gecas (1982) distinguishes ‘self’ and ‘self-concept’ (p.2). In his thinking, ‘self’ refers to the “process of reflexivity” emanating from “the dialectic between I and me” whereas ‘self-concept’ is a product of this process (p.3). It is the concept an individual has of self as a physical, social, moral, or spiritual being (p.3). Schroeder (2014) reports an address by Baumeister (2013),[45] who sees the human self not as “part of the human anatomy”, but as “a powerful interface between our animal bodies and the complex cultural systems in which we live” (para. 2). Schroeder says Baumeister defines the human self in three ways: “by its ability to turn inward and engage in self-reflection”, “by its identity as an interpersonal being, partner and group member”, and “by its executive function as an agent that makes choices, exerts control and engages in self-regulation” (para. 3).

Schooling education statements refer to various “self-phenomena” (Gecas, 1982, p.1) as well as the development of self *per se,* as being among the objects and intents of school education for individual student development. These phenomena include: self-concept, self-consciousness, self-awareness, self-discovery, self-knowledge, self-esteem, self-satisfaction and self-expression. Self-phenomena of particular relevance to the thesis are: Self-regulation (discipline), self-control

[45] McLeod (2008) cites and quotes the definition of self-concept of Baumeister (1999): "The individual's belief about himself or herself, including the person's attributes and who and what the self is" (para. 2). McLeod says: “The self-concept is a general term used to refer to how someone thinks about, evaluates, or perceives themselves” (para. 1).

(direction), self-motivation, self-reflection, and responsibility for self, (others, the world).[46]

Two further emphases are directly pertinent to the thesis argument. White (2002) situates his consideration of the self in his discussion of whole child (pp.179-183). For White, the biological organism of a human being capable of various forms of consciousness, with self-awareness expressed linguistically, is quite sufficient to offer a "wholly unmysterious notion of the self" (p.182). From birth, children learn to become persons. The place of the self, of self-understanding, of the whole child, of children's development is central to education (pp.184-7,192-4).

Gardner (1993a) discusses the intrapersonal self (p.xxii), and the sense of self (pp.67, 238, 296). In subsequent work, he links education, the world of self and self-view, and human intelligences,[47] with human survival. "Education in our time should provide the basis for enhanced understanding of our several worlds – the physical world, the biological world, the world of human beings, the world of human artefacts, the world of self" (1999b, p.158). Nurturing all of the varied human intelligences and allying them to an ethical sense, will offer a "better chance of dealing with problems in the world" (Gardner, 2006, pp.52-3). Students possessing a "better self-view," feeling more competent, engaged, and working for the broader

[46] The work of Maslow on 'self-actualisation' is referred to in Section 2.2.3 - creativity.

[47] The term 'intelligence' is considered next at 2.2.3.

good, will ‘increase the likelihood of our survival on this planet” (p.53). It may even “allow us to thrive” (ibid).

2.2.3 Intelligence(s) and creativity

The two terms ‘intelligence’ and ‘creativity’ are well established in educational discourse. They offer concepts or constructs to identify deemed, possibly unique, human abilities, attributes or ‘capacities’ (Section 2.2.4) which in turn involve other concepts of Intellect, cognition, reasoning, problem-solving, communication, innovation and artistry. However, the two terms ‘intelligence’ and ‘creativity’ have different connotations, and are commonly regarded as different concepts. The discussion here follows this convention, although Robinson (2001) sees creativity as an expression of intelligence (p.12).

Intelligence(s)

Cherry (2018) says the term ‘intelligence quotient’ (IQ) entered psychological theory first in the work of Stern in Germany and then through the work of the French psychologist Binet in 1904 when he was asked to identify which students were likely to experience difficulty at school (p.3). Binet, with Simon, developed a test “focusing on areas not explicitly taught in schools” (p.3). Cherry says that Binet did not believe his test measured a single inborn intelligence, but that ‘intelligence’ was influenced by a number of factors and changed over time (pp.4-5). Notwithstanding, the test prompted the concept of mental age. Subsequently the standardised Stanford-Binet test was developed in the USA (p.5). The term ‘intelligence’ came to denote a single general human characteristic, which was

quantitatively measurable, and which indicated the relative mental ages of children and their potential to succeed at school.

Subsequent theories of human intelligence[48] have pursued further the notion of a single general measurable intelligence, which may or not be endowed for life, be variable by situation or task, and be corrigible by intervention. Latterly the relationship of intelligence to the physiological operation of the human brain has intrigued researchers (Colom, Karama, Jung, & Haier, 2010; Goriounova & Mansvelder, 2019). The theories of most relevance to the thesis are those arising late in the 20th century: Gardner's theory of multiple intelligences (MI's), Goleman's theory of emotional intelligence (EQ), and concepts of spiritual and/or naturalist intelligence.

Gardner's theory of multiple human intelligences (1983, 1993a) posited seven distinguishable kinds of intelligence, each of which had eight signs or requisite criteria[49] (1993a, pp.62-3; 1999a, pp.35-41; 1999b, pp.71-2). The seven

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[48] These have come dominantly from cognitive psychology, psychometric theory and more recently from neurobiology. Overviews are provided by Fogarty (1999); Gardner, M. (2011); Pal, Pal, and Tourani, (2004). Sternberg (1990, p.xi) says that definitions of intelligence are ideas existing in the minds of those who create them. The thesis does not discuss artificial intelligence. Refer to such as: Estep (2003); Turck (2018).

[49] The criteria include: Representation in particular parts of the brain, the existence of exceptional individuals possessing the intelligence, a distinctive developmental history, an identifiable core or set of operations, the plausibility of an evolutionary history, a susceptibility to encoding in a symbolic system.

intelligences are: Linguistic, musical, logical-mathematical, spatial, bodily-kinaesthetic, and two personal intelligences – inter and intra personal intelligence. Subsequently Gardner (1999a, pp.48-52) revised his paradigm to include an eighth intelligence, naturalist intelligence. He was more comfortable with this than existential (1999a, pp.60-64) or spiritual intelligence (1999a, pp.53-60 and pp.64-66; 2000), but considered both. He expressed uncertainty about an identifiable moral intelligence (1999a, pp.67-77).

Gardner (1993b) says his theory developed to describe the "topography of the human mind", but "not as a program for developing a certain kind of mind or nurturing a certain kind of human being" (p.66).[50] The "genesis" of his idea was the "exploration of human potentials" (1993, p.ix). "The human mind is better thought of as a series of relatively separate faculties" with only loose relationship to each other (1999a, p.32). Yet the theory is also "an account of human cognition in its fullness" (1999a, p.44). Each human being is equipped with "intellectual proclivities" which we can individually connect according to our personal and cultural preferences (ibid. p.44).

Notwithstanding his demur above about the origin and intent of his theory, Gardner links the development of intelligences and morality, to creating "a world in which a

[50] Gardner says when he considers human nature, he thinks of individual mind, the contributions of biology to thinking, and social, cultural influences (2006, p.1). Thirteen or more of his books have 'mind' in the title.

great variety of people will want to live (1999a, p.4). “Education in our time should provide the basis for enhanced understanding of our several worlds”, including “the world of human beings” and “the world of self” (1999a, p.158). He does not propose “one universal ideal form of education” (1999b, p.6). Yet, “education has to do with fashioning certain kinds of individuals … who understand the world and want to alter it for the better” (1999b, p.20).

Gardner (1999a) also introduces the concept of human “capacities” (p.4) (Section 2.2.4).[51] The human brain is a “highly differentiated organ” where specific capacities “are linked to specific neural networks” (p.20). The human brain has “an indefinite number of intellectual capacities whose relationship to one another needs to be clarified” (p.20). People have a wide range of capacities (2006, p.10). Those involved in teaching and learning include: thought, language, creativity, perception and intuition, personality and motivation (2006, p.10). He accepts that a claim for universal innate music capacities is supported by research (2006, p.201). Gardner also “accepts the possibility that a proclivity for pondering ultimate cosmic or existential concerns constitutes a distinctive human intellectual capacity” (1999a, p.68).

[51] Gardner (2006, pp.84-5) discusses the “three faces of intelligence, one of which is: “A general characterization of human (or non-human) capacities”.

Gardner's work, despite its seeming conceptual dispersion[52], is highly relevant to the thesis in these ways: His concepts of the nature of each intelligence and their sum in representing the human mind, the concept of capacities, and identification of particular capacities, and his belief in the role of education in developing individuals with a world sense. Gardner's work has particularly prompted an awareness of, and focus on children's individual differences (Section 2.5) (1999a, pp.91-2, pp.150-5; 1999b, p.72, p.240; 2006, p.67). His initial research included working with children with relative disabilities. He has a particular interest in the arts (1990, 1994, 2006, Part Three), creativity (1999a, pp.122-4;1999b, p.93); 2006, pp.30-4, pp.69-73), and Reggio Emilia (1999b, pp.86-7; 2006, pp.1-2, p.20).

Goleman (1995) developed the concept of emotional intelligence. His work was written when there was "an unparalleled burst of scientific studies of emotion" and glimpses of the human brain working (p.xi). The "workings of the amygdala and its interplay with the neocortex are at the heart of emotional intelligence" (p.16). Goleman says "the emotional lessons we learn as children at home and school shape the emotional circuits" of the brain and affect our subsequent aptitudes for living (pp.xii-xiv).

[52] Gardner's terminology seems to this research to present inconsistencies over time. His later work shifts emphasis to focus on education in disciplines, which he acknowledges (2006, p.3). The key ideas or themes identified above are consistently asserted.

Goleman's work also challenges a narrow view of intelligence – that it is largely or entirely cognitive,[53] and is presumed to be immutable. Goleman (1995) offers the particular concept that the human "intellect cannot work at its best without emotional intelligence" (p.28). There is a need to harmonise head and heart (p.29). Emotions[54] can get in the way of our ability to think, or enhance it. They define the limits of our capacity to use "innate mental abilities" (p.80). Emotional intelligence is a master aptitude, a capacity affecting all other abilities (p.80). Emotional intelligence adds "more of the qualities that make us more fully human" (p.45). Goleman believes that "psychology has begun to recognise the essential role of feeling in thinking" (p.41).

There is some agreement among scholars with respect to the existence of a spiritual intelligence. Vaughan (2002) accepts that spiritual intelligence is "one of several types of intelligence" and "can be developed relatively independently" (p.16). "Spiritual intelligence calls for multiple ways of knowing and for the integration of the inner life of mind and spirit with the outer life of work in the world" (p.16). It can be cultivated.

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[53] Goleman (1995) is familiar with Gardner's work (pp.37-9). He believes Gardner and his colleagues have not pursued in detail the role of *feeling* in their theory of intelligences, focusing more on cognitions about *feeling* (sic). This leaves open the sense in which there is intelligence in emotions, and which intelligence is brought to emotions (p.40).

[54] Emotions are critical ingredients for optional information processing, social and written communication, motivation, attention, concentration, memory, critical thinking, creativity and physical health (Elias and Arnold (2006, p.15). Social-emotional learning will be considered in Chapters Three and Five.

A critical distinction Vaughan makes is that “spiritual intelligence is necessary for discernment in making spiritual choices that contribute to psychological wellbeing and overall healthy human development” (p.16). Vaughan (2002) also uses the term ‘spirituality’. Spirituality exists in human beings everywhere, but it is not necessarily healthy and beneficial (p.16). It is possible for spirituality to allow practices “detrimental to well-being” (p.16). “Spiritual maturity on the other hand, is expressed through wisdom and compassionate action in the world” (p.16).

Emmons (2000) explores spirituality as a form of intelligence.[55] He identifies five aspects of spiritual intelligence in terms of capacities and abilities enabling people to solve problems and attain goals (Abstract). These are: A capacity for transcendence, an ability to enter “heightened spiritual states of consciousness”, an ability to invest daily activities with a “sense of the sacred”, an ability to use spiritual resources to solve problems of human living, a capacity to show forgiveness, compassion, and gratitude (Abstract).

Zohar (2010) explores spiritual intelligence and ‘spiritual capital’. He sees spiritual intelligence emerging from a primary need of human beings for experience of deep meaning, and essential purpose and from values affecting the way we live (p.2). It is about asking “fundamental questions” (p.5. Its use builds “spiritual capital” which

[55] The issue of *The International Journal for the Psychology of Religion* (2000) which provides Emmons article, also provides articles on spiritual intelligence by J. D. Mayer, S. Kwilecki and H. Gardner and Emmons’ response to these articles.

is the power and influence gained by living from a deep sense of meaning and purpose, best expressed through a life of service (p.3). It is not necessarily connected to religious affiliation (p.4). Zohar thinks the purpose of education (largely lost) “is fully to develop human beings who are good people” (p.4). Zohar observes that brain research suggests there may be some neurological basis for human spirituality (Refer also to Ramachandran and Blakeslee (1998, p.175); Thagard, (2010, p.xii).

Wigglesworth (2012), offers the concept of four human intelligences: mental, emotional, bodily and spiritual (SQ). Like Vaughan (2002), Wigglesworth (2012) believes spirituality is innate, but it needs development (para. 8). It is the means of access to our “noblest self”, allowing it “to drive our lives” (para. 2). Spiritual intelligence is “an essential component of both personal and professional development” (para. 2). There is an undeniable connection “between the inner life of the self” and external behaviour (para. 3). Human beings need to develop “deep inner self-awareness”, and “compassion for the world around us” (para. 4). its consequence is “putting in the effort to make a difference” in that world (para.5). Wigglesworth’s definition of ‘spiritual intelligence’ is “the ability to behave with wisdom and compassion, while maintaining inner and outer peace, regardless of the situation” (para.7). She conceives 21 skills to practice. These include learning ‘quietness’, and observing one’s own bodily and mental agitation.

Reference has been made above to Gardner (1999a) introducing “naturalist intelligence” to his original theory (pp.48-52). The concept and terminology of

naturalist intelligence is not widespread. One example is offered by Mertins (2019). Naturalist intelligence is “about using the human brain to engage sensory awareness and observe patterns in living systems” (para. 3). The concepts of patterns in nature and of a fundamental human connection with nature has wide scholarly support, and will be pursued in Chapters Five and Six.

Naturalist intelligence, not conceived in these terms but as human empathy with the natural world, is vividly expressed in the “biophilia hypothesis” (Wilson (1984), cited in Kellert and Wilson (1993, p.42)). Human relationship with the natural world is an inherent human need or tendency.

Kellert (in Kellert and Wilson, 1993) says the biophilia hypothesis “asserts the existence of a biologically based, inherent need to affiliate with life and lifelike processes” (p.42). The “proposition suggests that human identity and human fulfilment somehow depend on our relationship to nature” (p.42). This human need is linked to “the influence of the natural world on our emotional, cognitive, aesthetic, and even spiritual development” (p.42). Much of the human search for “a coherent and fulfilling existence” depends on the relationship to nature (p.43). Conversely, the authors say, “the degradation of this human dependence on nature” increases the likelihood of a diminished existence in varied cognitive and

affective ways (pp.42-3).[56] Kellert describes “the naturalistic tendency”… “as the satisfaction derived from direct contact with nature” (p.45).

Louv (2011) conceives human relationship with nature as a principle. “This principle holds that a reconnection to the natural world is fundamental to human health, well-being, spirit and survival” (p.3). Louv’s perspective is not of a human intelligence for nature, but of nature’s impact on human intelligence - and senses, physical, psychological and spiritual health, and bonds with other human beings (p.3). Louv believes there is a growing body of research describing “the restorative power of nature” (p.3). He wants to see “human restoration and the end of nature-deficit disorder” (Title page). In “the twenty-first century, our survival, – or thrival – will require a transformative framework for that relationship, a reunion of humans with the rest of nature” (p.3). The thesis hopes to contribute to this.

Creativity

One of the terms in which UNESCO (1972) grounded its concept of “universally valid aims for education” was ‘creativity’ (p.158). ‘Creative’ and ‘creativity’ are terms commonly used in Chapter One to describe educational and schooling aspirations. Examples included goals for Australian schooling, and national plans for Argentina, Scotland, Sri Lanka, Botswana, Japan, and Korea. Creativity is a critical conception of Montessori, Steiner and Reggio Emilia education. Reggio

[56] Kellert (1993) has developed a typology of “nine hypothesized dimensions of the biophilia tendency” (p.44). Each has contributed to evolutionary survival and to personal fulfilment (p.44).

Emilia education is based on the premise that creativity is a characteristic way of thinking and knowing, nurtured through exploration (Gariboldi, Pugnahi, & Mussini, 2018).

The term 'creativity' is used in general parlance in two different ways to describe human abilities or attributes. It describes artistic capabilities of individuals in particular fields or domains in the performing arts.[57] It also describes a deemed intellectual capacity to think of a novel idea or solution to a problem. This capacity has expression in the arts, but also in thinking and invention in science, technology, engineering, and mathematics.[58]

Again there is no single definition nor context of use of human creativity.[59] Creativity is an aspect of human intelligence and is not limited to the creative arts (Robinson, 2001). It is a separate human capacity of individuals, perhaps of groups

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[57] Saip and Vitainyi (1987) believe the ability to generate music spontaneously is a human endowment supporting the idea of a basic and general form of creativity in people. This idea is explored in Chapter 5. They say an ability to do this is different from the constructive creativity of artists and composers, encouraged by training and development.

[58] A 21st century schooling initiative is a focus on STEM interdisciplinary curricula and activities in schools, to foster participation in science and mathematical subjects and encourage innovation (Hom, 2014). STEAM education is a development of the model, incorporating the arts, educating to take risks, problem-solve, inquire, collaborate, and work through creative process (STEAM Education, 2015).

[59] Robinson (2001) offers three steps towards a definition of creativity. (1) It involves doing something imaginative with public outcomes. (2) These outcomes need to be original to the individual and to humanity. (3) They are "valuable" (pp.114-5).

(Gardner, 2006). It may be an essential component of giftedness (Kaufman & Sternberg, 2006). It has an essential role in human love (Sternberg, 2012). It is susceptible to testing or measurement of some kind (Batey, 2012; Epstein, Schmidt & Warfel, 2008; Plucker & Runco, 1998). Freyer (2009) says creativity is a "complex, multi-dimensional concept" (p.327).

There are two ideas in the selection of scholarly statements that follows of particular relevance to the thesis, although they do not stand out clearly in the language. The first is that 'creativity' (creative thinking, artistic expression, behaviour) is in some sense natural to children, to all human beings, although it is a specific talent or faculty of some individuals. In either case it can be developed by social context and by schooling education. The second idea is that the encouragement and cultivation of creativity in individuals and society, even the world at large, should be actively pursued. It is assumed there is an essential connection between the development of individual and social creative capacity and solutions to social issues and human survival. Robinson (2001, p.11) and Krueger (2013) refer to creativity and individual wholeness.

Robinson (2001) is perhaps the strongest contemporary voice linking creativity and schooling education. He discusses both creativity and intelligence. He says there is an intelligence of creativity, with individual profiles (p.9, p.107). Different people have different creative strengths according to the pattern of their intelligences (p.10). Creativity is "not a single aspect of intelligence that only emerges in particular activities", such as the arts (p.12). Human intelligence is uniquely and

essentially creative (p.16, p.112). The “distinctive feature of human intelligence is imagination and the power of symbolic thought” (p.111). We need languages of feeling – one of the functions of the arts particularly, which help “unlock creative capacities” and “engage the whole person” (p.11).

Robinson believes “everyone has creative capacities”, whether or not they know it (p.2). He wants to change schools and education and the way we think about them and intelligence, “to meet the extraordinary challenges of living and working in the 21st century” (p.2). To do this, we need to understand the real nature of creativity (p.3, p.111). Robinson proposes three characteristics of intelligence as fundamental to this understanding: Intelligence is multi-faceted, interactive and dynamic, and individual in profile (p.94, p.102). Creativity is complex, varied and “possible in all areas of human activity” (p.138).

Bottichio and Vialle (2009) cite Csikszentmihalyi (1996)[60] exploring the creative process, and asking “Where is” rather than “What is” creativity? Csikszentmihalyi (1996) concluded that while individual people are creative in novel and original ways of experiencing the world, creativity arises in the interaction between a person’s thoughts and a sociocultural context rather than as an individual

[60] Csikszentmihalyi (1996) interviewed 91 creative people across a range of fields and domains to explore the creative process. He wished to pursue the link between creativity and his ‘flow theory’ (1990) of concentration and engagement.

subjective phenomenon (p. 23).[61]. He is less sure of the personality traits a person must have to create a valuable novelty (p.51). He thinks that what distinguishes creative people is “their ability to adapt to almost any situation and to make do with whatever is at hand to reach their goals” (p.51).

Pound (2013) is concerned with cognition in early childhood, and considers creativity in this context. She believes Csikszentmihalyi has insufficient knowledge of the cognition of young children, but highlights creative factors relevant to young children: Joy and involvement. The key is that creativity is a developmental process (p.108). Pound cites Lucas (2001, p.38) that “creativity is a state of mind” where “all our intelligences are working together” in the creative arts, and any school subject (p.81). Butler-Bowdon (2018), identifies Csikszentmihalyi’s beliefs that creativity is “a central source of meaning” in human life (p.3). When we are being creative, we are happy because “we lose our sense of self and get the feeling we are part of something greater” (p.3). We are “actually programmed to get satisfaction from … creativity”, because it leads to “our survival as a species” (p.3).

[61] Csikszentmihalyi (1996) says: “Creativity results from the interaction of a system composed of three elements: a culture that contains symbolic rules, a person who brings novelty into the symbolic domain, and a field of experts who recognize and validate the innovation” (p. 6). Refer also to Csikszentmihalyi (1999).

Krueger (2013)[62] offers Maslow's perspective on the relation of creativity and personal well-being. He says Maslow (1968) sees creativeness as an aspect of self-actualisation, a concept central to his psychological theory of human motivation (paras. 2-3). Krueger notes Maslow's observation that there is no correlation between psychological health and productive achievement, but a correlation between psychological health and ordinary creativity. For Maslow, creative people are "like happy secure children" with "cheerfulness and openness to new experience" (para. 3). According to Maslow, society inhibits such behaviour but creative individuals overcome it. Krueger observes more in Maslow's thinking. Ultimately, creativity is constructive, unifying, and integrative of the person, "an epiphenomenon of the greater wholeness and integration" implied by self-acceptance (para. 5).

Sternberg and Lubart (1995) believe creativity, even in a culture of conformity, can be cultivated. Creativity, like intelligence, is something everyone possesses in some amount (p.vii). Creativity is different from intelligence (p.14), but "creative styles" which can be taught, are "proclivities" and "relatively independent of intelligence" (p.178, p.196). The essential attributes of a highly creative person like an artist, involve risk-taking and persistence (p.2, citing Sternberg 1985b). The worst examples of undervaluing creativity are found in schools (p.20). The authors offer ten steps to foster the "creative spirit" (pp.285-8).

[62] Krueger (2013) thinks Maslow's theory of creativity contradicts his theory of motivation because creative people don't necessarily need approval.

Kaufman and Sternberg (2006) review creativity around the world (Summary, pp.4-9). 'Creativity' has different meanings in different cultures. Some of the international ideas arising about the nature of creativity, of relevance here, are: In Israel, creativity involves real-world problem-solving, self-actualisation, personality traits and art. In African countries, it involves personal agency and social impact. In India, creativity is seen as a "natural desire of human beings" representing "their search for an extension of the self" (p.9).

Simonton (2006) reviews research[63] into creativity - its general nature and the qualities a person or product should possess to be called 'creative'. He groups creativity research into four psychological categories: Cognitive (underlying mental operations, and whether these are unique to creativity in diverse domains or are domain specific), developmental (genetic, early family and later adult life), differential (individual variation, personality variables, psychopathology, gender and ethnic differences), and social (the socio-cultural environments favouring creative activity). He asserts that because most research is applied, theory[64] about creativity has played a "relatively minor role" (p.493).

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[63] Runco (2007) says creativity research tends to look at the creative process; applied research looks to environments and experiences that support or inhibit creative potentials and expression. Creativity is both an individual and cultural phenomenon. Tan (2007, Parts One and Two) discusses biological and classroom research and explores the nature of creativity – habit, social-psychological, multi-cultural perspective, high ability, cultivable.

[64] Kozbelt, Beghetto, & Runco (2006) divide theories of creativity into ten categories. They discuss developmental theories (pp.26-9) which are practical, emphasising the "roots of

2.2.4 Capacities

In Chapter One, and so far in this Chapter, a variety of terms has been used in the literature to refer to collective or multiple aspects of human nature and being requiring recognition and development. Human beings possess and can evince capacities, (cap)abilities, competencies, aptitudes, attributes, potential(s), and proclivities.[65] The thesis will not attempt to disentangle these multiple terms, but use 'capacities' as the guiding concept.

The term 'capacities' in this Section is used to refer in particular to human intellectual, physical, emotional, artistic, social, moral, spiritual and naturalist capacities. It will be used to refer collectively to human capacities for language, symbol use, learning, cognition, creativity, compassion, judgement and choice. The singular term 'capacity' will be used to refer to one only of these aspects of the nature of human being, such as a 'capacity' for learning.

The term 'capacity' nonetheless carries some semantic ambiguity. It is used in general parlance to mean total volume, ability to produce something and ability to do something. Transposed to the context here, to fulfil their potential(s), human beings can be both 'filled up' and 'poured out'. As Section 2.2.5 will illustrate, there

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creativity" in individual backgrounds and environments supporting the fulfilment of children's creative potentials.

[65] There are terms with a different intonation used in schooling practice but rarely in formal education documents: Personality, temperament, character, disposition. The thesis makes some small reference to character education only (Sections 1.2, 3.2.3.1, 4.2.2).

is an ongoing theoretical dilemma over what is *in* human beings to start with when they are conceived and born, and what is *put in* by life experience from that start.. Partly because the term ‘capacities’ provides for this ambiguity, and because it is the most versatile term used in educational discourse, it is the term chosen here. The Section begins with an overview of the usage of the term to this point in the thesis, then provides scholarly reference to indicate how the concept contributes diversely to an understanding of human nature and being.

The term ‘capacities’ of human beings is used by scholars in Chapter One with respect to social practice (Reid, 2010), and to education needing insight into a child’s capacities (Sadnovik, Cookson and Semel, 2013). It is used in national plans by Australia and Ireland, with respect to moral and ethical capacities, the capacity to work, and capacity to participate in the world. Steiner education refers to the capacities of spirit, soul and body unfolding with development (Association for Waldorf Schools, 2019). These unique capacities are “intellectual, emotional, physical and spiritual” (ibid). The IB Learner Profile “describes a broad range of human capacities” (IB, 2019).

Scholars offer varied perspectives on human capacities. Capacities include creativity, intelligence(s), cognition, language, symbol use, emotion, music, spirituality, morality - goodness, empathy, love – learning. Freyer (2009) says “The capacity to be creative is an intensely human capacity” (p.331). Robinson (2001) asserts “Everyone has creative capacities” (pp.1-2). Armstrong (2000) cites

Gardner: “An intelligence is a capacity, with its component processes … geared to specific content” (p.10).

The title of Gardner’s book “Frames of Mind” (1993a) represents “the concept of human capacities” (p.x). “The capacities of human beings” and the extent of their “potential development and education” is the key issue of his book (p.36). At the core of each of the human intelligences is a “computational capacity or information processing device” (p.280). Gardner refers to the “loss of cognitive capacity” through brain damage (p.x). Gardner (1999a) says “human beings possess a range of capacities and potentials” (p.4, p.31). (Refer also Gardner, 2006, p.5, p.10, p.44, p.217). Specific capacities are “linked to specific neural networks” (p.20). The brain has “an indefinite number of intellectual capacities, whose relationship to one another needs to be clarified” (p.20). It has been noted above (Section 2.2.3] that Gardner thinks it is possible “that a proclivity for pondering ultimate cosmic or existential concerns constitutes a distinctive human intellectual capacity” (p.68).

Gardner (2006) reflects on Bruner’s consideration of the “full range of human capacities ”involved in teaching and learning”, [including] “symbol systems” (p.20). He develops “the probable position” that human beings have available a range of symbol-using capacities” (p.44). These lack “the precision and unambiguity” of language and logic conventions” but are “capacities to create and transmit powerful and otherwise inexpressible meanings” (p. 197). Gardner believes the “claim for universal and innate capacities for musical symbolization is supported by research”

(p.201). Gardner links the different symbol systems with education subject disciplines (p.210).

Tomasello (1999) argues that the roots of the human capacity for a symbol based culture and the kind of psychological development that occurs within it are based in a cluster of uniquely human cognitive capacities that emerge early in human development. These include capacities for sharing attention with others, and for understanding others' intentions. These capacities have developed over evolutionary time (Chapter One).

Trigg (1999) avers that the central role of human experience is making knowledge itself depend on the capacities given us by our universal human nature (p.79). There is a capacity for goodness in human nature and the possibility of continuous improvement (p.105). She refers to Wittgenstein's position that in human development, instinct comes first followed by reasoning based on language capacity (p.180). White (2002) discusses the human capacity for abstract thought (p.11). It is an intellectual capacity ("an innate general cognition ability") closely connected with our powers of theoretical reasoning (pp.78-9). White offers an historical trichotomy of related ideas. Human beings have an innate capacity to acquire specific intelligent abilities or capacities; to acquire a learned capacity in a specific area; to apply the specific capacity successfully. Each is an "ethically neutral" capacity (p.86). Normally "human beings do not differ in innate capacity" (p.89).

Chomsky (1988, in Arnove, 2007) says that “capacities that are part of our common human endowment”, such as the special capacity for language, “can flourish or … be restricted, depending on the conditions provided for their growth” (p.233, p.248). Berk and Winsler (1995) discuss sociocultural theory and the contribution of Vygotsky to our understanding of the “vital connection between” a child’s social psychological and social “worlds”, and of the role of discourse with others necessary to the child and human “capacity to use language to regulate thought and action” (p.vii). They add that sociocultural theory emphasises “the wide variation in cognitive capacities among human beings” (p.10).

Cleverley and Phillips (1986) discussing childhood, cite Spock. “A baby is born to be a reasonably friendly human being” with a “natural capacity for self-assertion and exploration” (p.93). Gertraud (2011) also discussing early childhood, remarks on the “capacity to empathise”, and its situation “in the right brain lobe” (p.129). A baby “develops the capacity to think”, and the ability to develop emotional relationships, through interaction with the mother (figure) (p.216, p.298). Wolff (1989) declares “At every stage, a child is not only himself now, with particular capacities in a social setting. He or she already contains residual influences from the past and potentialities for the future” (p.3). Wolff says “the concept of intelligence defies definition”, but “an individual’s capacity for thought and action and a child’s rate of development compared with other children are notions which in practice we cannot do without” (p.20).

Goleman (1995) believes the “emotional lessons we learn as children” at home and school “shape the emotional circuits” of the brain which are the “basics of emotional intelligence” (pp.xii-xiv). “To the degree that our emotions get in the way of or enhance our ability to think and plan, they define the limits of our capacity to use our innate mental abilities” (p.80). “Emotional intelligence is a master aptitude, a capacity that profoundly affects all other abilities (p.80). Sellars (2008) says the core capacity of Gardner’s concept of interpersonal intelligence, is to access one’s feeling life and to discriminate among feelings, eventually labelling them “as a means of understanding and guiding one’s own behaviour” (pp.8-9).

Bennett (2007) suggests that a historical review of the concept of the human mind shows the human being has a “range of psychological capacities” (p.943). It is the role of psychiatry to identify changes in general bodily management when “these psychological capacities go awry” (ibid). Ashton and Laura (2012, p.xx) aver that “with appropriate health education, the individual can learn to maximise their own capacities of body and mind to prevent and recover from disease”. Bodrova and Leong (2007) describe “the problem-solving extensions of natural capacities” as “tools of mind” (p.4).

Emmons (2000) (referred to in Section 2.2.3) discusses the evidence for spirituality as a set of capacities and abilities enabling people to solve problems. These include the capacity for transcendence and the capacity to engage in virtuous behaviour (forgiveness, gratitude, humility). Muckerjee (1964) says that the human mind has a unique self-actualizing “transcendent impulse and capacity” (p.10).

Stenmark (2012b) discusses capacity oriented and relational views of human nature, which he says for some theologians are in tension. He believes both views presuppose human beings have certain capacities, such as the capacity to love, the ability to think and reason, the capacity to relate to others, and to God.

Bowen and Hobson (1987) discuss the ancient Greek theories influencing western educational thought, and the notion of education enabling 'transcendence' of human physical limitations of time and space. They assert that mankind (humankind), "conceived generically has the capacity to make this transcendence through a properly organised set of experiences", including sensitivity to and facility with language (p.4).

For Gergen (2012), (referred to in the thesis Introduction), the practices of education must proceed on the basis of preliminary beliefs about the nature of human beings, their capacities, their relationship with the world and with each other (p.17). For Elias and Arnold (2006), from the perspective of multiple intelligences theory, the goals of schooling should include helping students develop an appropriate and effective mix of capacities building on their intellectual strengths (p.38).

2.2.5 Human innate abilities: Nature and nurture

Introduction

The scholarly discussion of human nature has been equivocal about whether there are innate human characteristics instincts, and/or capacities (referred to above by

Gardner, 2006; Goleman, 1995; White, 2002), and if so, what are they? What is it that human beings are born with – to be drawn out, to be educated? The corollary is then: What is it that is learned, needs to be learned, and how?

There are more questions to do with contexts, individuality and specific capacities. How does the interaction of human nature and its nurture or neglect influence child and human development in the often separate contexts of family, community, and schooling? How does nurture allow for both common and individual development, whether in sequence and/or spasmodically? How does the interaction of nature and nurture affect the development of specific human capacities (potentials, instincts), such as language, number, movement, music, art, emotion, social participation and autonomy?

The discussion here first considers general innate human qualities or dispositions such as learning and feeling, then specific innate abilities such as language, number and music. It concludes with an evocation of the principle of both nature and nurture in human development.

Innate human capacities, abilities, potential(s), dispositions

Professional documents are forthright in their belief in children's innate capacities or abilities. Bodrova and Leong (2007) say Maria Montessori saw child development as the "natural unfolding of innate abilities" (p.34). Winter (2010) in Australia declares that "early experiences either enhance or diminish innate potential", laying a "platform of brain development on which all further development

and learning of the person", body and mind is built (p.10). "The inclination to become attached is innate and universal" (p.17). The International Grammar School, Sydney refers to a child's "innate gifts" (Principal's Welcome, 2020). The River School Queensland seeks to cultivate children's "Innate capacity for love and compassion" (The River School. What is Neohumanism? 2018). The Alice Springs Steiner School (2019) wishes to "educate the whole person … so as to develop each student's innate self-discipline and strength of body and will" (Welcome). Scholars' statements claim human beings have (or may have) innate mental abilities, intuitions, cognitive brain structures, operations and ways to structure experience and produce ideas, even innate deficiencies of these. Chomsky (2002, in Arnove, 2007) refers to human "innate dispositions" (or instincts) to learn (p.362). Jarvis and Parker (2005) believe some things are "learned intuitively", implying (innate) cognitive brain structures (p.20). Formal education will make up for "innate deficiencies" (p.20). Caine, Caine and Crowell (1996) says a child's "search for meaning" is innate (p.91). White (2002) is however not sure there is "an innate cognition ability" (pp.78-9). He believes nonetheless that human beings "do not differ in innate capacity" (p.89).

Pound (2013, p.105) cites Trevarthen (2008, p.24) saying that the "innate intuitive powers of mind in the brain moving thousands of muscles" in the human body, with sensitive awareness of what will happen, are not properly understood by a psychology accepting a model of consciousness, intelligence, and personality focusing only on the cognitive processing of information. Rather, according to Trevarthen, every human being has "some intuitive capacity" to share intentions,

feelings and make friends (ibid.). Pound (2013) notes that Burman (1994, p.36) challenged the idea that children “have an innate predisposition to be social” (p.105). Wolff (1989) on the other hand, believes people have “innate abilities to imagine how others feel” (p.1). Goleman (1995) thinks our emotions “define the limits of our capacity to use our innate mental abilities” (p.80). Jarvis (2005, p.182) cites Goleman, and agrees.

Scholars’ ideas of innateness extend to more than cognition and feeling. Chomsky (1988, in Arnove, 2007) says the moral and ethical system acquired by a child is based in “some innate human faculty” (p.245). Wigglesworth (2012) refers to the possibility that “spirituality is innate in each person”, and to the need to “tap the innate drive” to nobility. Stevenson (1987) sees human aggression as an “innate tendency,” an ‘Instinctual behaviour” (pp.119-120; pp.135-143). Contemporary ethology looks at the interaction of genetic (innate) features and human experience (Horton and Turnage, 1976, p.21). Nevertheless “It is not possible to determine what is genetically innate” and what is due to specific environments (Jarvis and Parker, 2005, p.38).

Innate capacities for language, number, music

Scholars offer contrary contentions with respect to distinctive human capacities for language (speech and language dependent thought and memory), number, and music. Other animal species have capacities for sound, song, and even primitive quantity. The human species seems to have these capacities in relatively complex ways from birth, and the ability to respond i*n utero* in some way to speech, sound,

music, mood, simple number. What is innate and what is learned, what is an 'instinct', continues to provoke debate.

The assumption of an innate human capacity for each of language, music, and perhaps number, is introduced here for pursuit in Chapter Five, where a concept of holistic learning will be discussed. The critical point, for development there, is this. If it can be demonstrated, from neuroscientific research particularly, that the human brain and body have an inbuilt propensity or capacity for learning a particular skill or mode of expression, then its development will contribute to human 'completeness'. Conversely, its lack of development will contribute to potential 'incompleteness'. Each outcome will have individual and social human consequences of some kind. The introductory exposition here considers theoretical scholarly positions.

Theories of an innate human capacity to acquire and produce language and instinctively recognise its structural rules are attributed to Chomsky (1957) by Lyons (1970, pp.9-15) and to Pinker (1994). Pinker (1994) writes in terms of a language 'instinct': It is part of human brain biology (pp.17-18). The physiological basis for language innateness is argued by Lenneberg (1967, p.393). Such theories are part of a vexed landscape (Behme and Deacon, 2008; Goldberg, 2016); Sampson, 2005; Tomasello, 1999).

Chomsky (1970, in Arnove, 2007) contends that language is natural to human beings, but only in a specific way (p.82). Chomsky (1988, in Arnove, 2007) says

language is a special faculty that is a central faculty of the human mind (p.248). Even so, he asks, if we explain language and other human capacities such as the apparent faculty for number, in terms of innate biological endowment, how do they develop (pp.253-5)? Lyons (1970) thinks that Chomsky's theory of innate disposition for language allows for and requires definite environmental conditions for language maturation (pp.113-4). Lyons believes that a more general faculty is innate: A knowledge of formal principles, which, given the environment, will produce competent language (p.113).

Bruce (2011, p.5) and Cohen (2002, p.47) appear to accept Chomsky's theory, or at least its seeming relevance to early childhood and children. Crossley (1996, pp.49-50) cites other scholars – Buber, Merleau-Ponty, Mead – as believing that infants have "an innate predisposition" to communicate. Gardner (1985, p.83) refers to children being born with innate language. Winter (2010) cites an OECD report (2007) saying that the brain is biologically primed to acquire language (p.24).

Williamson (2014a) also affirms that humans possess a general language capacity allowing them to speak particular world languages. He says "an innate ability for language acquisition" makes the claim that "humans are genetically pre-programmed to learn language (2014b, para. 1). The "structure of human speech organs", "speed of acquisition", the "presence of "linguistic universals" and that language is "unique to humans" are all used to support this view (2014b, para.1). Gabrielli, Christodoulou, O'Loughlin and Eddy (2010) assert that learning to speak is "an innate ability" supported by specialized areas of the brain (p.112).

Scholars are less certain about an innate human capacity for number, but there are a number of congruent voices. Dehaene (1997) asks whether humans possess a "number sense" with numbers "engraved in the … architecture of our brains" (p.ix)? Marmasse, Bletsas and Marti (2000) ask: How much is the sense of numbers innate and how much is learned? The authors think there is an innate mechanism for number but are not sure what it means. Mathematical reasoning is probably both innate and learned. Sousa (2001) says that infants are born with an innate sense of number and logic (p.143). Chomsky (1988, in Arnove, 2007) assumes a "number faculty", although he is not sure how it developed (p.255). Winter (2010) says children are born ready to learn and use mathematics (p.4).

Sylwester (1998) believes humans have an "innate desire to go beyond the mundane" with "innate music networks" to be understood and enhanced (p.33). Their development in schooling curriculum should be as natural and essential as language capability (p.33). Gardner (1993b) says the claim for universal and innate capacities for musical symbolization is supported by research. He believes that "musical intelligence is largely autonomous" (p.201). Pearce (in Campbell, 2000), introducing Campbell's concept of music intelligence, refers to each of Montessori, Piaget and Steiner as seeing music as an innate intelligence ready to unfold in early childhood (pp.xii-xiv).

McDermott and Hauser (2005) review research in multiple epistemologies focusing on a hypothesis that music perception is constrained by innate principles and processes, which are possibly specific to human beings and to music. They are

unsure, but conclude that some basic features of music such as pitch, intervals and tonality are “partly determined by innate constraints” (Abstract). Livingstone and Thompson (2006) see the “rigours of establishing innateness and domain specificity” present “challenges to adaptionist models of music evolution” (p.89). They discuss a “view of music as a multimodal system of engaging with affect, enabled by capacities of symbolism and a theory of mind” (p.89).

Trainor (2006) provides a careful commentary to an evolutionary perspective of the origins of musical behaviour, such as that provided by McDermott and Hauser (2005) and Justus and Hutsler (2005). Trainor’s perspective is different. She accepts the evidence for innate constraints, and that music is encoded in specific brain networks. She wishes to explore further the nature of music innateness and the relationship to human learning in the development of the brain. She notes that early childhood developmental research data does not yet allow definite conclusions whether and which aspects of music are innate or learned. (Trainor’s research work is discussed in Chapter Five.)

Again there is a critical unresolved perspective here. It is one stance to see music as a natural human capacity requiring development for human completeness. It is another to deny its primitive or instinctive nature, but argue nonetheless for its value in contributing to human learning and development in multiple ways – movement and coordination, emotion, social participation and group cohesion, acuity of sound perception, and awareness of rhythm, beat, and counting. It is another stance again, to argue for the essential neurological and/or philosophical

interconnectedness of innate (instinctive) human musicality –- with other human capacities for language, number, movement, emotion, and the development of 'humanity'. Chapter Five will inquire further into this dilemma.

Further areas to be explored in theory and research include whether sound and rhythm are what is innate, and whether music and word language are different but cognate expressions of a single or joint underlying human capacity.[66] Even then, how are sound, rhythm, language, music related to human movement – to dance, to drumming – perhaps in the way Steiner conceived 'eurythmy'? What impact on human learning and development do different musical structures and instruments have – and in different cultures? What is the relationship of music and movement to human feelings? Sylwester (1998) sees mobility, language and music as having distinct innate neural systems requiring stimulation and development. These provide biological support for arts programs in schools. He wants to see sensory-motor development grow beyond what he calls innate survival level needs.

Nature and nurture

"A key debate of the twentieth century was about the relative contributions of 'nature' and 'nurture' to each child's physical and cognitive development" (Laura

[66] A documentary by Mannes (2009), *The Music Instinct*, inquires whether music is a separate innate function, or built from other functions. Are music and language two sides of the same functional coin or different events?

and Tucker, 2012, p.8).[67] As remarked above, a profound cause was and still is the conceptual uncertainty about what is *in* human nature to be drawn out and developed. What is not in doubt is the principle of the nexus between human nature, as best we can understand it, and its nurture in all its contextual environments.

These questions are still current requiring further research and conceptual argument. What occurs spontaneously, naturally, for any child, in neurological response of brain/body (and presumed 'mind'), to a specific instance of environmental stimulus? What is learned – by brain and body (by 'mind') - from each responsive instance and stored neurologically, cognitively, emotionally, for future reference and further learning? What is learned and nurtured in each child by instances of accidental and/or deliberate provocation? What happens if particular stimuli do not occur throughout child development and at particular points in that development?

The contemporary source of answers to such questions is neuroscientific (neurological) research of the human brain. Neuroscientific brain research observes the activity of separate but possibly linked parts of the brain for language, number, movement, sound, visual perception of different kinds (movement, light,

[67] Loughran (2010) refers to the nature/nurture debate with respect to intelligence (pp.22-4). Bruce (2011) does not write in these terms, but provides an overview of the theoretical landscape of scholars' different views of the nature of a child and how these have influenced the creation of learning environments in early childhood education.

colour), touch, feelings and social attachment. Educators looking to such research to provide a biological basis for a concept of a child's innate abilities to be explored in educational environments include Blakemore and Frith, (2005), Darling-Kuria (2010), Jensen (1998), Winter (2010), and Zull, (2011). Laboratory research of this kind then needs exploration of child raising practices in different social and familial environments and cultures, and of educational practices in early childhood and school learning environments to explore how the nexus between nature and nurture works.

The position adopted by the thesis is that what is 'innate' to human beings is not agreed amongst scholars. What is agreed is that human learning and development of whatever capacities are innate, and whatever capacities can be acquired through pre- and post-natal learning as knowledge, skills, understanding, and behaviour, derives from a complex, constant interaction between the physiological capacities and processes of the individual human nervous system and the sensory, social, emotional, and cultural environments each individual experiences.

2.2.6 A focus on individuals, and individual differences

The Chapter has been examining concepts of attributes of human nature postulated as inherent in all human beings. Human beings are nonetheless individually different in the ways they possess, develop and express each of these attributes of their human nature: Mind, body, senses, sense of self, intelligence(s), creativity, capacities (abilities) and innateness. They are also individually different in the home, community, school and cultural contexts influencing their

development. They are individually different in the ways they interpret and participate in the human world.

UNESCO (1972) believed the “machinery and even the spirit of most educational systems prevent consideration of individuals as differentiated persons” (p.157). Since that time, awareness of the differences of individual students has been permeating educational discourse and practice, prompted in part by Gardner’s theory of multiple intelligences and those who have explored the theory in school and early childhood situations (Section 2.2.3). The term ‘differentiation’ has become current in educational parlance, particularly with respect to the need to change uniform approaches to human learning (Gardner, 1999a, p.91; Williams. 2002, pp.23-4), modes of teacher instruction (Hinton and Fischer, 2010, p.71; Stuckart and Glanz, 2010, pp.14-18), brain function (Ormrod, 2012, pp.22-3), and gifted education (Robinson and Campbell, 2010, p.46). A parallel term ‘personalised’, used particularly with respect to learning, will be pursued in Chapter Three.

A second emphasis on individuals has been introduced in Chapter One. It is the ideological concept that whatever else schooling and education generally is about, it focuses on the development of individual human beings. The discussion here explores each of the two emphases. The thesis wishes both to be included in the conception and practice of schooling.

Focus on individuals – in human society

Diverse epistemologies in western scholarship[68] - philosophy, theology, politics, economics, anthropology, psychology, psychiatry, biology – particularly since the Protestant Reformation of the 16th century, have focused on Individual human beings, their agency and their importance to themselves. Key ideas are the worth, capacities, interests, rights, freedom, autonomy, responsibility, development, uniqueness, productivity, happiness, and consciousness of individual human beings (Albrecht, 2012; Bowen & Hobson, 1987; Renaut, 1999; Shanahan, 1991; Watt, 1996).

The conceptual and ideological change to emphasise the independence and individuality of human beings is taken as given here. The thesis is less certain that such a change has been accompanied by a parallel emphasis on individuals still being part of a human collective and responsible in various ways for it. Both emphases are central to the thesis argument.

Faure and UNESCO (1972) do not specifically articulate their agenda from this perspective, but it is present in their thinking. The second assumption of the Commission's report is "belief in democracy, conceived of as implying each man's (person's) right to realize his own potential and to share in the building of his own future" (p.vi). Nevertheless, the "new man must be capable of understanding the

[68] For a discussion of the concept in Chinese thought, refer to Brindley (n.d. c. 2009).

global consequences of individual behaviour … and shouldering his share of the joint responsibility involved in the destiny of the human race" (p.xxv).

The idea that schooling education should provide explicitly, even primarily, for individual children was presented, with examples, in Chapter One. The discussion of aims for education began with Whitehead (1929/1967) and Peters (1966) who both see aims for education as expressing a concern for individual development. For Peters (1966) "the development of individual potentialities or the development of intellect and character" is an 'intrinsic' aim (p.27).

Chapter One also provided examples of statements from national authorities, education organisations and particular schools asserting an explicit emphasis on the development of individual children, their potential, character, confidence, and creativity. National education statements from Finland (Hancock, 2011) and Singapore (2015) refer to a "focus on the individual child" and "individual children". The OECD (2019d) helps individuals and nations. Sri Aurobindo Centre for Education (2019) refers to "the perfectability" of the individual student.

Other scholars since Peters (1966) also urge an individual focus. Chomsky (1970, in Arnove, 2007) says "Education … must provide the opportunities for (individual) self-fulfilment" (p.84). Carlgren (1976) says "The most important task of the educator is to encourage the talents and learning of the individual child" p.13). Edmunds (1992) says Steiner offers a new appreciation of the meaning of individuality. The "richer the force of this hidden individuality in each child", quality

of life abounds (p.12). Robinson (2001) believes we need to “unlock the creative abilities in each individual” (p.12).

A focus on individuals implies that each child requires attention to his/her personal development – that each child matters and is unique. It does not *per se* imply that this focus occurs in isolation from or preference to other children and adults. Part of the purpose of individual attention is to encourage both individual and collective growth, awareness that individual and group learning are interdependent, motivation that individual gifts are used in service to others, and that individuals become members of society.

Berk and Winsler (1995) cite Vygotsky’s “generic law” (1960/1981) (p.163): To understand individual development, “it is necessary to understand the social relations of which the individual is a part” (p.12). Robinson (2001) says that creativity arises from interactions with others (p.11). The Emerald Foundation (2012) proposes “the purpose of education is to enable individuals to reach their full potential as human beings, and as members of society” (p.2).

Durkheim (1956, in Cosin, Dale, Esland & Swift, 1971, p.91) grapples with what he sees as the tension between a sociological view of education and pedagogy as “eminently social” in origin and function, and a psychological view that “education is eminently an individual thing”. He sees the latter view as believing “the object of education” is “to realize in each individual”, to the “highest possible points of perfection”, “the attributes distinctive of the human species in general”. He believes

however that such a view carries with it the (mis)conception that “there is one education” exclusively “suitable for all” indiscriminately, irrespective of the “historical and social conditions on which they depend”. He asserts further that such a view assumes “there is *one* (sic) human nature” with “forms and properties” which can be determined “once and for all”. Durkheim says education does not have “the individual and his interests” as its “unique and principal object”. Rather education is “the means by which society perpetually recreates the conditions of its very existence”.

The thesis proposes both individual and social objects for education as its “unique and principal” objects: The realisation in each individual, to the highest point possible, of the general attributes of the human species, (explored in this Chapter), together with social and universal objects of maintaining and recreating the conditions of human existence. These are the twin aspects of Faure’s and UNESCO’s aspiration for education (1972), cited above.

The thesis does not accept that in the 21st century this means there is one education for all, nor that there is one fixed human nature. There are general attributes of human nature, common to all persons, even if it is difficult to define and explain them, and there are individual differences of human being, which are to be discovered, and particularly nurtured, such that both individual and universal objects for school education may be pursued and fulfilled. The thesis accepts that individuals develop in shared social contexts, which are also different, and provide differences of access and developmental opportunity.

Individual differences

That schooling education can and should provide for individual differences of intellect, cognition and learning, interests, physical, emotional and social development, personal eccentric mixes of intelligences and capacities, differences in brain functioning, and in social and cultural background and opportunity, has been illustrated from the thesis sources. However, any imprimatur to do so is not currently expressed by every country, school authority, individual school and classroom.

What was axiomatic to Steiner, Montessori, Malaguzzi, to Rousseau and AS Neill (Founder of Summerhill School in the UK) has not been, and is not, a premise of how most schools have been conceived, structured and practised. Rather Durkheim's fear above of one education suitable for all, has largely prevailed. A 'factory' model of schooling (Beare & Slaughter, 1993, pp.35-6; Emerald Foundation, 2012, para. 2; Hargreaves, Earl & Ryan, 1996, p.2) has occupied most of the twentieth century and continues in the twenty first century. The dominant conceptions and models of schooling have inhibited recognition of and provision for individualising learning and schooling in all schools.

Gardner (1993a, p.xix) asks: What does it mean to take individual profiles of intelligence seriously in an educational setting? He proposes an "individual centred school",[69] where each child's profile is assessed and aligned with the curriculum

[69] Vialle & Perry (1995, Chapter 2) use similar phrasing.

(ibid.; 2006, p.50). Both individual and cultural differences should be provided for (1990, p.4; 1993a, p.239, p.325; 1999a, p.93, p.104). He sees the design for the ideal school of the future as being based on this assumption and that individual students can't learn everything (1993b, p.10). Now that educators know about individual differences, the 21st century challenge is how to make these central to teaching and learning (1999a, p.92). Any "uniform approach to education" will only serve a few children: Optimally students "need differentiation and personalisation" (1999a, p.91).[70]

Armstrong (1987, p.v) worked initially in special education for children with physical and learning difficulties. He made a conceptual shift. He no longer believes in "learning disabilities" and has turned to the concept of "learning differences" (1987, p.ix). Each child has a unique way of learning. Armstrong believes (2000), p.v) that the idea of individual differences, of each child having a personal eccentric mix of multiple intelligences, requiring differentiation in the practices of teaching and learning in schools, is "the essence" of Gardner's intelligences theory. Recently Armstrong (2018) has sought to retain Gardner's concept of multiple human capacities or intelligences, but to change the term 'intelligence' and the connotations it carries. Armstrong is arguing for 'word-smart', 'number smart', 'music smart' as more idiomatic, colloquial language to indicate children's abilities and personal differences.

[70] Refer also Bass & Walker, 2015, p.8; Galloway, 2009, p.147);

Sellars (2008, p.6), Shearer (2009, p.98), Teele (2000, pp.12-3) and White (2002, p.92) also pay tribute to Gardner's focus on individual differences. Sellars sees Multiple Intelligences Theory as a "way of thinking" (p.6). "It is an attitude about people" that allows for similarities and differences, for inclusion and enrichment (p.6). Sellars cites Beckman (2002, p.4). Shearer (2009), provides an essay by Meier (Chapter 10) and says she "describes how an entire school can be formed around a philosophy respecting and responding to the "unique intellectual characteristics of each individual student" (p.2).

Teele (2000) says "Children's developmental progressions of ability differ individually and depend on the unique combinations of ways they process information" according to the different tasks they are given (p.8). Children (and adults) learn in highly personal individual ways (p.14). Neurological research is providing new insights into how this occurs (pp.51-2). White (2002) believes Gardner's work has contributed to educators in the UK seeing disadvantaged children in a different way. He cites Gardner (1993a, p.71) as saying that pupils have different minds from each other, and education should be sculpted to be responsive to these differences (p.92).

Kaufman and Sternberg (2006) found gender[71] and ethnic group differences in the way creativity was expressed (p.22). They believe cognitive psychology supports

[71] See also Elias & Arnold, 2006, p.31.

cognitive and developmental individual differences (pp.492-3).[72] Wolff (1989) focuses on facts and theories which contribute to understanding individual differences and disturbed children (p.5). She believes the “maintenance of individual differences” is “biologically adaptive”; that different processes and experiences preserve individual differences (p.17). She says that the concept of intelligence “defies definition”, but “an individual’s capacity for thought and action, and” [an individual] “child’s rate of development compared with other children” are indispensable notions for educational practice (p.20).

Bass and Walker (2015) ground their paradigm of child development and learning in each child’s “unique genetic transcript” (p.24, p.30), which is then influenced by the child’s environments. Bass and Walker are adamant that not all children are “born equal” (p.24). Educators provide equity by understanding children’s diversity and difference (p.25).

Conclusion

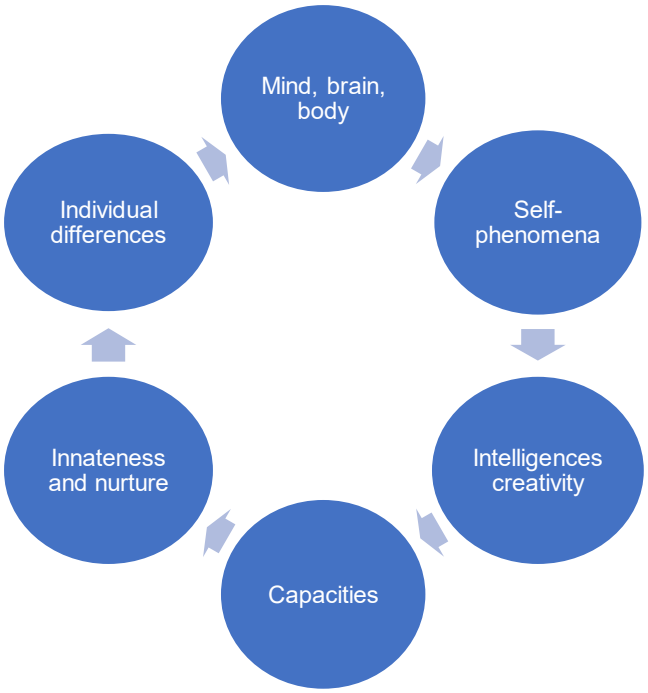
Faure and UNESCO (1972) declared that the ultimate aim for education was the development of a complete human being. The thesis research has not identified such a concept in common use in the theory and practice of schooling and early childhood education, other than that offered by Steiner education. This Chapter has explored the most common and influential concepts of human nature and being informing the international educational landscape.

[72] See also Sternberg, 1990, pp.42-3.

The thesis offers three provisional suggestions at this point.

- That the selected six concept groups of Section 2.2 provide the elements for a working model of human nature to which educational theory and practice can refer for a time. A conceptual model is shown at Figure 3.
- That the elements of the model are viewed as connected, as mutually interactive and contributory. The elements may be referred to as single concepts but are not therefore to be regarded as discrete entities.
- That although educators cannot yet securely postulate how the proposed interconnection works, educators can, on the basis of current knowledge, postulate a principle of the concepts' interconnection. The principle then invites conceptual and practical investigation into the development of human completeness.

Figure 3 A concept of human nature and being



These further ideas from the Chapter are seminal to the thesis, and will be pursued in the evolving argument.

- The human body and its senses and capacity for emotion are inextricably linked with what scholars term human 'mind' – the deemed central agency of human being. This is a conceptual principle and is not currently demonstrable.
- A postulate of a human 'self' with associated senses and referent phenomena – self-concept, self-reflection, self-esteem, self-regulation and 'agency' - is a philosophic and psychological concept, used to understand and describe an attribute of human nature and being. This self (sense of self) needs to be developed as an essential part of human being and moral participation in the human universe, even though educators are presently uncertain how to do this.
- Both imputed common human capacities and individual differences need to be taken into account in educational enterprise.
- Scholars and educators are still not sure what is 'innate' in human nature and what is (to be) developed in various human contexts, and how this development occurs collectively and individually.

To this point, the thesis has identified two sets of terms used to describe human nature and being. There are the terms similar to UNESCO's, but expanded to comprise physical, intellectual, social, emotional, moral, spiritual, and naturalist 'capacities'. A concept of integration in similar terms will be pursued in Chapter Four. There are also the terms associated with the attributes explored in this

Chapter: Mind, body, brain, self, intelligences, creativity, capacities, innateness and individual differences. In either case a concept of their integration, of human completeness, or ‘wholeness’ requires further development. This is the business of the second half of the thesis.

CHAPTER THREE Human Learning

Introduction

The third element of The Commission's dictum (UNESCO, 1972) for the world of education is human learning – 'learning to be'. The Report offers one statement using the phrase. "We should … learn how to build up a continually evolving body of knowledge all through life – 'learn to be'" (Faure, in UNESCO, 1972, p.vi). The statement is made in relation to the fourth assumption of the Commission's report "that only an over-all, lifelong education can produce the kind of complete man" [needed in the contemporary world] (p.vi). Faure (in UNESCO) says the Commission stressed "two fundamental ideas: Lifelong education and the learning society" (p.xxxiii).[73]

The vision of the UNESCO Commission (1972) for a reconception of education in terms of 'complete man' therefore extends beyond schools and early childhood to the whole of human life. Schooling and early childhood education commence what is intended as a lifelong process. The concept of lifelong learning is explored at Section 3.2.1 below, but a full examination of adult education and a learning society is beyond the scope of the thesis. However, the language of scholars and professional documents describing lifelong learning is highly relevant to the thesis argument and to the holistic paradigm it proposes.

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[73] The two concepts are linked in the 1972 report: Lifelong education (pp.142-3) is "the keystone of the learning society" (pp.181-2; pp.160-5). It is a "master concept" (p.182). UNESCO (1998) pursues both concepts (Section 3.2.1).

There is a second interpretation of ‘learning to be’ implicit in the UNESCO (1972) argument. The ‘complete man’ who discovers and preserves his own personal “authentic identity” and feels that he belongs “to the entire species” (Faure, in UNESCO, p.xxxix) is ‘learning to be’. It is this sense of human learning the thesis is exploring. For UNESCO, this is the ultimate aim of all education.

Human learning

The UNESCO (1972) report offers other cues to its vision for human learning through education. It wants education systems to promote conceptions of learning such that children and adults learn to live, learn to learn, learn “to think freely and critically”, learn “to love the world and make it more human”, and learn to “develop in and through creative work” (p.69). Looking to the “futures” (p.85), and “towards a learning society” (p.167), education needs to take into account new findings from brain research about the learning process and human behaviour (p.106), and from psychology with respect to children’s “harmonious emotional development” (p.118). Technology and new innovative practices are contributing to “individualized teaching” (p.134). The Commission believed that education “is no longer focused on the learner, nor anyone … It must necessarily proceed *from* (sic) the learner” (p.161). Teaching “should adapt itself to the learner” (p.220). “All learners … should be able to play a responsible part not only in their own education but in the entire educational enterprise” (p.222).

There are at least three approaches to human learning through education in these remarks. First, there is the aspirational vision of the UNESCO Commission (1972)

in terms of human development - learning to live, learn, and love the world. Second, there is an ideological stance of what might be called 'learners first': Education "must proceed *from* the learner" (p.161). Third, there is prescient recognition of the early 21st century influences on learning in schools – brain research and children's emotional development, technology and more individualised learning. Even so, two of these approaches to human learning – the 'visionary' and 'learners first' elements – are different from what is still the most common approach to student learning in schools, namely cognitive learning focusing on the acquisition of knowledge and skills.

This Chapter explores each of these approaches to human learning. The intent is to identify some principles of learning (OECD, 2010) to carry forward in the thesis argument.

The Chapter again explores the scholarly and professional landscape informing early childhood and school education. It first reviews learning in terms of cognition and behaviour, and then learning with respect to each of the themes identified by UNESCO (1972) above:

- Lifelong learning and 'learning to be'
- Brain research
- Social-emotional learning
- Technology and individualised learning
- A focus on learners and learning first.

The exposition treats each of the themes or topics discretely, but suggests some linkage between them. Linkage and interconnection of learning will be pursued in Chapter Five.

The theoretical complexity of scholarly documents about human learning reveals the uncertainty about what human learning is, and how it is to be described. “There is no generally accepted definition of the concept” (Illeris, 2009, p.1). The research found only some professional documents of authorities and schools setting out their concept of education in terms of learners and learning. (Examples are given below at Section 3.2.5.) Few provide conceptual frameworks for learning, or provide references to the traditional epistemologies – philosophy, psychology, and the sociological sciences - from which, until recently, such frameworks are drawn. Some documents now refer to neuroscientific theory and research of the human brain as contributing to understanding how learning occurs (Bass & Walker, 2015).

3.1 Human learning, learning in schools: Cognition and behaviour

‘Cognitive learning’ is broadly understood to mean a human capacity for receiving and processing information by the human brain, mind and body. It involves internal, mental processes called thinking, knowing, understanding, reasoning, interpretation, reflection, memory, and recall. The outcomes of these processes are typically some form of human communication (language, creative arts) and/or bodily behaviour and skills. The exposition below introduces cognitive learning theories, and the concepts most relevant to the thesis: That human mental learning

is mind/body learning, involves emotion, influences behaviour, contributes to a capacity for self-regulation, and occurs in contexts.

Tennant (in Jarvis & Parker, 2005) writing about cognition, offers a statement critical to the contribution of learning theory to education. He cites Howes (1990, p.25) saying that the common element of the many disparate positions on human learning is “the belief that elements inside the head are causal in directing human behaviour” (p.101). Tennant contrasts contemporary examples of two traditions of viewing cognition: As information processing (like a computer) (pp.102-106), and as “cognitive-structuralism” together with “socially situated cognition” (pp.106-113). Tennant doesn’t say explicitly but cognitive structuralist theory is attributed to a cognitive development tradition commencing with Piaget (Hardiman & Zernich, 1980)[74] whereas socially situated cognition[75] is more recent and involves learning by doing and where the mind and body are regarded as interdependent. Tennant observes there is now a concern, common to both traditions, to take complexities of context into account (p.101). This concern will be taken up in the concepts of ‘whole child’ and ‘holistic learning’ in Chapters Four and Five.

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[74] Gholson (1981, pp.xi-xii) says that Piaget’s structural theory, and information-processing theory dominated mainstream developmental learning from the 1970’s. Information processing models offer no structural nor operative base for ‘executive functions’.

[75] The concept is claimed by such as Semin & Smith (2013). In their paradigm (2004), cognition involves the body and sensori-motor systems, is situated in environmental interaction, and is distributed across other minds and tools. Ormrod (2012, p.314) treats ‘tools’ as ‘cognitive entities’: Concepts, theories, strategies.

Ormrod (2012)[76] reviews a range of cognitive theories: Cognitivism, cognitive developmental perspectives and metacognition, social cognitive theory, socio-cultural theory and contextual perspectives. Her position is that no single theory explains what research has discovered about human learning (p.9). An integration of theoretical perspectives provides a summative, more complete understanding (p.7, p.327).

Ormrod (2012) affirms however that cognitivism or cognitive psychology has been the predominant perspective within which learning research and learning theories have evolved (p.141). The three general approaches of cognitive theorists to conceptualising learning are: Information processing, constructivism and a contextual approach (p.156). Theories of cognitive development focus on how thinking processes change with age and experience, with children playing an active role in their own development, and thinking gradually becoming more abstract and systematic (p.289). Meta-cognition and self-regulated, intentional, effective learning involve awareness of the nature of thinking and learning, and development of 'epistemic beliefs' about knowledge, and truth (pp.373-80).

[76] Ormrod (2012 says her training is "rooted in cognitive traditions" but she believes in diverse perspectives (p.10). She believes a dependable understanding of human learning can only be achieved by objective systematic research (p.12). Ormrod's contribution to the brain and learning and to human behaviour are discussed below and at Section 3.2.2. She also considers cognitive factors in motivation, memory, and critical thinking.

With respect to human learning, Ormrod (2012) observes that human beings seem to inherit a unique ability to think and learn (p.3). Learning is the means through which human beings acquire not only skills and knowledge, but values, attitudes, and emotional reactions (p.3). Human learning involves a long term change in "mental representations", (with a presumed basis in the brain), which occurs through experience (p.4).

Ormrod (2012, pp.112-3) identifies some general principles of social cognitive theory for human beings, including the theory of personal agency where people can largely control their actions and environments. Ormrod cites Bandura (2006).[77] Ormrod says the cognitive factors in social learning include 'cognitive processes', such as attention, rehearsing, memory, expectations, and beliefs (pp.116-8). She notes that the non-occurrence of expected consequences is an influential consequence in itself (p.118). She discusses ideas of self that are necessary to learning and engaged behaviour: Efficacy, capacity, and regulation (pp.127-136). Sociocultural theory and other contextual perspectives examine the part played in human learning and thinking by immediate environments (p.350), and the role of language in learning and development (p.319).[78]

[77] Lefrancois (2006, Chapter 11, pp.359-379) also discusses Bandura's theory. The idea of personal agency is referred to further in Chapter Five.

[78] Ormrod compares Piaget's and Vygotsky's theories of development (pp.313-351).

Jarvis (2012) discusses cognitive theories (Chapter 9, pp.157-176). Jarvis (2012) cites Winch (1998, p.63) who says that “cognitivism” is a set of theories about how people learn and think (p.157). Jarvis presents Winch as describing cognitivism as both a solitary and a social theory of learning, focusing on individual brains receiving external input (Winch 1998, p.46), but Jarvis thinks this view is too limited (p.157). So too, Jarvis says, is the view of “early philosophers of learning”, who restricted thinking about learning to cognitive learning, and did not provide for the nature of person and the place of body in learning (p.157). Jarvis uses ‘cognitive’ to refer to the “whole domain” of learning, where thought plays a significant part in the processes of learning (pp.157-8), and so does emotion (p.177). Jarvis suggests that no learning theorist has researched emotional learning (p.177). He would like to rely on Goleman and show that emotion relates to all stages of learning, even to non-learning (p.177).

Winch (2002) reviews learning as it applies to early childhood and schooling, from a philosophic perspective (p.1). He examines the epistemic traditions contributing to contemporary understanding of human learning, and sees inadequacies in all of them – philosophy (from Descartes and Locke), which emphasises human mental processes over bodily processes (p.4), psychology, which does not attend enough to religion, the arts, social, contextual and affective dimensions of learning (p.2), behaviourism, whose bodily approach is inadequate (p.4), developmentalism (from Rousseau and Piaget), which emphasises qualitative differences in learning capacity (p.5), and modern scientific cognitivism and its “physicalist view” where mind and brain are explicable in terms of neural structures and processes (p.5).

Winch (2002) queries both the presuppositions and “the scientific enterprise” of learning theory (pp.3-4). He concludes that no one theory about how human learning occurs has appeared, and there is little indication one is close (p.183). Winch wants to emphasise the social, affective and practical nature of learning (p.2, p.183), the love of what is to be learned, the cultural diversity and individuality of interests and abilities of human beings, for which education must account (pp.183-5). Learning is at the heart of all human experience (p.1).

Lefrancois (2006) reviews theories of human learning – from psychology and science - with particular consideration of behaviourist, cognitivist and cognitive theories. He begins with some propositions about psychology,[79] philosophy,[80] learning and theory itself. For Lefrancois, learning is more complex than the acquisition of information and any resulting change in behaviour (p.5). Behavioural change may not come from learning (p.5). Learning may involve changes in capacity and inclination (p.6). Principles of learning[81] describe specific factors that affect learning and remembering (p.8).

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[79] Psychology is a science that studies human behaviour and thinking. It tries to explain why people think, act and feel as they do (p.3).

[80] The questions What do we learn? What do we know? What is knowledge? define the branch of philosophy known as epistemology, which asks how we know the world, and whether what we think is real, actually is (p.3).

[81] Theories are systematic statements of principles that explain natural phenomena (p.7). Principles are statements that relate to some predictability in nature or in behaviour (p.8). The Chapter and thesis exposition use the term ‘principles’ in this way.

Lefrancois (2006) discusses the “transition to modern cognitivism” (Chapter 6, pp.173-213). Cognitive psychology is concerned with human perception, concept formation, memory, language, thinking, and problem solving (p.217). Its aim is to make plausible and useful inferences about mental processes that are meaning-making (p.217). Its main metaphor is information processing (p.218).[82] Lefrancois identifies a “big psychological issue” – the mind-body relationship. He asks: How does the physical experience produce the mental aspects of learning and knowledge of the world (p.4)?[83]

Lefrancois (2006) discusses three influential cognitive theories – those of Bruner, Piaget and Vygotsky (Chapter 7, pp.214-266). He sees Bruner as making a key contribution to cognitive psychology, by putting meaning as a central psychological concept (p.233). He sums Bruner’s discussion of the evolution of human mind, of mental representation (p.221),[84] of categorisation (pp.223-5) and concept formation (pp.226-230).[85] Humans can anticipate, plan for the future, remember the past, be consciously aware and reflect (p.221). He notes Bruner’s observation that

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[82] Tennant (2005) and Ormrod (2012) above both offer the same metaphor.

[83] Horton and Turnage (1976, p.5) ask: How do sensory, perceptual and cognitive systems operate and interact? How do they develop naturally? How can they be modified by experience?

[84] Bruner’s paralleling of child development with human evolution and the history of human invention (p.222) provides one of the theoretical underpinnings of the uniquely devised epochal curriculum at the Ross School, NY (Chapter Six).

[85] Lefrancois (2006) says Bruner’s description of the categories and processes involved in concept formation continues to influence cognitive research (p.231). Gholson (1981, p.11) believes Bruner offered descriptive material but no real theory of concept learning.

children's representational systems develop from senses and motor capacities before progression to mental images and symbolic representational systems, of which language is the most important and essential to systematic reasoning (pp.222-3). Abstraction is among the highest of thought processes (p.232). The human mind, made possible by the brain and nervous system, is distinct from all other animals (p.221). Even so, the human mind can only reach its full potential through participation in a culture (pp.223).

Lefrancois (2006) views Piaget's work as an account of human cognitive development and mental representation, of the processes by which children progressively achieve more advanced understanding of themselves and their environments (p.236).[86] He says Piaget's theory as a theory of learning is primarily a theory of human development (p.254), but it has three learning elements: The acquisition of knowledge is a gradual developmental process, the sophistication of a child's representation of the world is a function of development defined by the thought structures possessed, and learning is shaped by maturation, experience, equilibration, and social interaction (p.254). Lefrancois concludes that cognitive development is far more complex than Piaget thought, and perhaps than contemporary theorists think (pp.258-9).

[86] Lefrancois (2006) sees Piaget's approach as also biological and evolutionary. He considers criticisms of Piaget's theory, which he believes nonetheless stands, with variations to the model of developmental stages (pp.258-9).

Lefrancois (2006) presents Vygotsky's theory as being also about meaning making, but it emphasises how culture and interaction with others influence the development of human consciousness (pp. 259-260). Vygotsky's key idea is that "social interaction is fundamentally involved in the development of cognition" (p.261). Human cultures specify what the successful outcomes of development are, and what has to be learned. They shape human mental functions twice in a child's development: Social learning, and individual inner learning (p.261). Vygotsky emphasises the role of language in higher mental functions. Cognitive development is mainly a function of largely verbal interaction (p.261).

Martinez (2010) relates learning and cognition to "the design of the mind" (Book title), including intelligence, emotion and volition, and the organisation of the human brain. The perspective he brings is that all the powers of the human mind are needed to "defeat the vicious problems confronting humanity" (p.xix). There is a need to foster creativity in both the arts and sciences (p.xix). Education in its diversity has been devised by human cultures to promote the mind's rational and creative abilities (p.xix). There is a need for greater understanding of the nature and operation of the human mind to produce more capable learners (p.xix). Cognitive information processing theory putting mental activity as the focus of interest is powerful, but it doesn't do justice to the way the mind is structured and operates (pp.1-2). The mind is very mysterious (p.1).

Martinez (2010) says scholars from diverse disciplines have tried for over 100 years to discover the nature of learning, reasoning, problem-solving and

intelligence (p.xix). He observes a shift towards the end of the 20th century in education research to a focus on the individual learner (p.4). He believes this is a consequence of a paradigm shift in psychology towards a more cognitive understanding of human beings (p.4).

Martinez (2010) gives an account of the brain's cognitive architecture from an information processing perspective (Chapter Three). Basic cognitive processes involve information flow within the memory system: Sensation, perception, attention, learning, remembering, and knowing (p.50, p.75). The cognitive system is selective, interpretive, and distortive (p.75). Complex cognition is not mere learning, but the incorporation of information into long term memory and the ability to apprehend and test complex ideas: Metacognition involves the monitoring and control of thought (pp.150-1). Cognitive development occurs throughout life (p.191).

Learning and behaviour – behaviourism

The brief discussion here is concerned with the relationship of learning and behaviour generally. A distinction needs first to be made between the notional principle that learning can and does influence behaviour, albeit not always explicitly, and 'behaviourism', which is a theoretical paradigm of learning. Behaviourism or a behaviourist approach to human learning is discussed by scholars such as Jarvis (2012, Chapter 8), Ormrod (2012, Chapters 3-5), Martinez (2010, Chapter 2), and Lefrancois (2006, Chapter 6). Behaviourism is one of four

main approaches to analysing human learning (Jarvis, 2012, p.145), and one of four main paradigms illustrating the mind's workings (Martinez, 2010, p.1).[87]

Ormrod (2012, Chapters Three to Five) shows how concepts of classical and operant conditioning influenced the development of behaviourist theory. These concepts still assist understanding of the learning of involuntary responses (p.36), of behaviour which brings desirable consequences or avoids undesirable ones (p.48), and contribute to aspects of classroom management such as reinforcement, repetition and establishing instructional objectives (p.78, p.99, p.109).

Ormrod (2012, pp.32-3) says that behaviourists have not always agreed on the specific processes that account for human learning, but there may be some common basic assumptions. Among these are that principles of learning should apply equally to different behaviours; that learning processes are studied most objectively when the focus is on stimulus and response; that learning is largely the result of environmental events; that learning involves behaviour change.[88] The critical difference between behaviourist and subsequent cognitive theories of

[87] Martinez (2010, p.1) also includes behaviourism and cognitive theory, but discusses classical and operant conditioning (Chapter 2), neuroscience and psychometric theory (Chapters 8, 9), whereas Jarvis chooses emotional and experiential theories.

[88] Jarvis (2012, p.150) says that a behavioural definition of learning describes learning as a relatively permanent change in behaviour as a result of experience, but he does not accept that this is logically possible.

learning is that behaviourist approaches to human learning largely exclude “internal processes” from scientific study.[89]

The reciprocal relationship of learning and behaviour, of presumed mind, brain and body, is more multi-faceted than a behaviourist concept. There is learning to do things (behaviours), and learning by and from doing things, individually and with others. There is learning from others’ behaviour. There is learning that is practical involving actions and skills, including aspects of social interaction, learning that involves cognitive content that in turn can be recalled, explained and demonstrated to others, learning that involves conduct toward others and whatever mental and emotional processes accompany that. There is learning that is intended to produce specific behaviours that are culturally and/or morally laden, but which may not produce that behaviour, and there is behaviour that occurs for which there has not been specific prior learning that is apparent to immediate others.

The critical conceptual and practical issues for child raising in communities, for schooling and for lifelong education are: What behaviour(s) are desired from children, adolescents and adults as human beings participating in communities, and which are not? How are all (each) of these to be learned and/or unlearned,

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[89] Jarvis (2012, pp.146-151) and Horton and Turnage (1976, p.11) make similar observations. Tennant (2005, p.101) says the re-emergence of cognitive psychology in the 1960’s occurred because behaviourism could not translate mental constructs into behaviourist terms. Lefrancois (2006, Chapter 6) describes the range and development of behaviourist theories and the historical shift to modern cognitivism.

particularly where they are harmful to others? How may the learning of any desired behaviour be reconciled (in western societies at least) with ideological emphases of individual autonomy, freedom and rights? By what process(es) do children learn to participate empathically in the world?

The research has not found a comprehensive theory, nor collection of theories addressing such questions, at least in the context of human education and schooling. Scholars chosen for the research make relevant observations. Jarvis (2012, p.50) wants acceptance that learning must not be reduced to either behaviour or cognition. Both are required. “The inexplicable mystery of learning” transcends biological bodies and involves becoming selves (p.50), however difficult this is to describe (p.49). Lefrancois (2006) says that a theory that tries to explain how humans learn through experience should prompt suggestions for arranging experiences so that behaviour will change in desired ways (p.9). Changes in behaviour are evidence that learning has occurred (p.6). Ormrod (2012) says regardless of how learning is defined, we only know that learning has occurred when we see it reflected in behaviour (p.4).

In discussing social cognitive theory however, Ormrod (2012) notes that one of its principles is that learning can occur without a change in behaviour (p.112).[90] Such a view holds that learning involves mental rather than behavioural change, such as when learning occurs by observation rather than performance (p.116). Learning

[90] Ormrod (2012) also makes this point in discussing contemporary cognitivism (pp.152-7).

often occurs simply by observation (p.137). One cognitive factor in socially acquired learning is that learners form beliefs about their ability to perform various behaviours (p.117). They engage in behaviours when they believe in their self-capacity to execute particular behaviours well (p.127). Ormrod says 'self-regulation' is now thought of as having cognitive processes (p.136). Self-regulating techniques improve student behaviour (p.139).

Lefrancois (2006) considers the contribution of evolutionary psychology, and its pre-cursor, sociobiology, to explaining human learning and behaviour.[91] The single important assumption of social biology is that humans are biologically predisposed to engage in certain social behaviours rather than others (p.154). It suggests that a range of human behaviour, including aggression, sexual mores, gregariousness may have a biological basis (p.156). Evolutionary psychology searches for the biological basis of social behaviour such as altruism (p.157). There are biological constraints which are inborn dispositions making certain learning probable, easy

[91] Lefrancois' discussion also informs ideas of human nature offered in Chapter Two of the thesis. He says that evolutionary psychology continues to fight the 20th century idea that biology doesn't matter, mind and environment matter, that there is no such thing as a genetically determined human nature common to all humans (p.149). Lefrancois sees the "overwhelming similarities" to be found in all the world's cultures of feelings that are understood everywhere – status, love, fear, guilt, justice, envy, greed, male/female complementarity – as providing the evidence that there is (p.149).

and difficult (p.153). There are behaviours that are difficult to condition by learning, whereas others are easy (p.157).[92]

Interim conclusion

Three provisional 'principles of learning' can be drawn from the discussion so far.

- Human learning is a process that occurs internally to individuals, but it is also situated, occurring in contexts of experience, even if the direct influence of the contexts is not discernible to the learner or observer.
- The internal process of what has traditionally been known as cognitive learning involves more than information and knowledge acquisition – it is a bodily and emotional process.
- There is a complex relationship – requiring ongoing research - between learning and behaviour, the learning of desired behaviour(s) and a human capacity for self-regulation.

[92] There is emerging recognition in Australia that besides socioeconomic relative disadvantage, a major hindrance to student learning and well-being is student "challenging behaviour" in classrooms and school environments (Victoria State Government, 2020).

3.2 UNESCO themes: Lifelong learning - 'learning to be', brain research, technology and personalisation, social-emotional learning, learners first

3.2.1 Lifelong learning - 'learning to be'

Scholars concepts

Faure's statement of human development and being occurring through lifelong learning in a learning society (in UNESCO, 1972, p.xxxiii) was reaffirmed by the second UNESCO Commission Report (1996) on human learning: *Learning: The Treasure Within.* Delors, the Chairman, says: The concept of "learning throughout life" is "one of the keys to the twenty-first century" (p.22). Lifelong education constitutes "a continuous process of forming whole human beings" (p.21). There is a "need to advance towards a 'learning society'", although nothing can nor should "replace the formal education system" (p.21). The school of the future will need to impart "the desire for and pleasure in learning" and "the ability to learn how to learn" throughout life (p.21).

The vision of UNESCO (1972, pp.160-5) is more radical. The Commission sees the concept of a learning society necessarily developing because the concept and practice of contemporary schooling is too limiting systemically to provide for the diverse needs of individuals, conceived in their entirety, who need to learn how to educate themselves. Predetermined schemes of educational structures are simply inadequate to cope with and provide for both individual and societal needs for all citizens. Somehow the function of education must be broadened to society as a whole (p.162). "Tomorrow's education must form a co-ordinated totality in which all sectors of society are structurally integrated" (p.163). It will be "individualized and

self-directed" (p.163). The report offers a roadmap towards its "utopian vision" (Chapters 7-9).

Jarvis (2012, pp.xi-xiii) cites Faure and UNESCO (1972).[93] He quotes the UNESCO proposition (1972, p.157) that contemporary science shows that 'man' is "biologically unfinished": Human existence is "an unending process of completion and learning". Mankind "is obliged to learn unceasingly in order to survive and evolve". Jarvis accepts the UNESCO principle that every individual needs to be able to keep learning throughout life; that the lifelong concept covers all aspects of education (p.181).

Jarvis (2012) provides a selection of recent scholarship on lifelong learning and compares it with his own approach (pp.139-142). He acknowledges there is another sense of lifelong education referring to vocational education and retraining. He attributes the derivation of lifelong learning to the USA in 1979, and to the European Commission in 1995 and OECD in 1996 (p.140). He offers a definition by Longworth and Davies (1996, p.22) in terms of the development of human potential stimulating individuals to acquire and apply knowledge, values, skills, understanding throughout life "with confidence, creativity and enjoyment" all the time (p.140).

[93] Jarvis has explored the concepts of 'lifelong learning' and the 'learning society' (Illeris, 2009, p.21). Illeris is Professor of Lifelong Learning at the Danish University of Education.

Jarvis (2012) offers a philosophical perspective on human learning (pp.3-31). His underlying position (principle) is that learning is existential, lifelong, very complex to understand, and the study of it should be interdisciplinary (pp.3-4). Learning "lies at the heart of humanity itself – of personhood" (p.4). "Learning is an essential element of Being (sic)" – theories of learning "must embrace a holistic and existentialist perspective" (p.4). "Learning is the driving force that combines with our bodily drives to make us what we are" – learned beings (p.xi). Jarvis believes we should have a comprehensive framework for human learning lifelong, but he believes we don't know enough to produce such, and maybe never will (p.xi).

Nonetheless, Jarvis (2012) begins "to formulate a theory of lifelong learning" (Chapter 7, pp.133-142). "Life is about being: human being (sic) is about learning" (p.133). "Learning … is intrinsic to living … It is about the changing person – it is about becoming. 'Lifelong learning' is about being and becoming' (p.134). Jarvis offers a definition of lifelong learning in these terms (Italics sic) (p.134): It is

> *The combination of processes throughout a lifetime whereby the whole person – body (genetic, physical and biological) and mind (knowledge, skills, attitudes, values, emotions, beliefs and senses) – experiences social situations, the perceived content of which is then transformed cognitively, emotionally or practically (or through any combination) and integrated into the individual person's biography resulting in a continually changing (or more experienced person).*

The outcomes of learning are the way an individual grows and develops and becomes a person in relationship to others (p.134). Only in relationship “can we reach towards the fullness of our humanity” and beyond this to ‘infinity’ (p.135).

There are key concepts offered in Jarvis’ and UNESCO’s statements about human beings, lifelong learning and human ‘becoming’ which the thesis wishes to highlight here, in preparation for the argument of Chapters Four to Six. The concepts and terms in which they are conceived are:

- ‘Whole person’ (body and mind) and ‘whole human being’, ‘fullness’ of humanity, a ‘holistic’ perspective
- Human learning is (needs to be developed to be) individual and self-directed but occurs in relationship.
- Human experiential learning involves transformation (cognitively and/or emotionally and practically), and integration into individual biographies.
- Human learning is existential.

Three of these concepts and terms are introduced a little further here in the context of lifelong learning: Individual biographies, self-regulation (determination), and transformational learning involving personal change.

Alheit (in Illeris, 2009) believes lifelong learning needs to be interpreted in relation to the biography of the learner (p.116). He cites and quotes the European Communities Commission (2003, p.3): “[L]ifelong learning is no longer just one aspect of education and training: it (sic) must become the guiding principle for provision and participation across the full continuum of learning contexts” (pp.116).

Alheit says the key educational question is no longer how can certain material be taught as successfully as possible, but which learning environments can best stimulate self-determined learning – how learning itself can be learned (p.120)?

London (2012) reviews the broad conceptual landscape of lifelong learning conceived in other than existential terms. He cites Jarvis' "detailed definition" (2005, p.134) and offers others (pp.4-5). He makes this statement:

> Lifelong learning is a dynamic process that varies depending on individual skills and motivation for self-regulated, generative learning and on life events that impose challenges that sometimes demand incremental/adaptive change and other times require frame-breaking change and transformational learning (p.2, Abstract).

Mezirow (in Illeris, 2009, p.92) offers a definition of transformational learning as:

> The process by which we transform problematic frames of reference (mindsets, habits of mind, meaning perspectives) - sets of assumption and expectation – to make them more inclusive, discriminating, open, reflective and emotionally able to change.

Mezirow then discusses the concept of transformational learning in the context of 'cosmology' (p.98). He offers an expanded definition to include environmental, spiritual and self-concept issues. He cites and quotes O'Sullivan, Morrell and O'Connor (2002, p.11).

> Transformational learning involves experiencing a deep structural shift in the basic premises of thought, feeling and action. It is a shift of

> consciousness that dramatically and permanently alters our being in the world. Such a shift involves our understanding of ourselves and our self-locations; our relations with other humans and the natural world; our understanding of the relations of power in interlocking structures of class, race and gender; our body awareness; our visions of alternative approaches to living; and our sense of the possibilities for social justice, and peace and personal joy (p.98).

Kegan (in Illeris, 2009) says he has taken up Mezirow's concept (p.35). He refers to 'transformational learning as a "lifelong phenomenon" where educators need to understand learners' history (pp.45-6). Kegan asks: What sort of transformation needs to occur in a person to develop new capabilities (p.40)? He sees transformational learning as not just any kind of change, but change having "landscape-altering potential" (p.41). It is "epistemological change", where an individual's *meaning forming* (sic) or *frame of reference* (sic), with potentially emotional or moral 'colouring', changes (p.44). Educators seeking change like this are asking people "to change the whole way they understand themselves, their world and the relationship between them" – to develop "self-authoring" and "self-transforming" minds (pp.50-1).

Professional documents

In Chapter One (Section 1.2), professional documents from national education authorities - Canada, Norway, Japan and Singapore - referred to a commitment to lifelong education, but not in the specific terms discussed above. A desire for

lifelong education is referred to in national education statements from Finland (Ministry of Education and Culture, 2017, p.9), Denmark (Danish Education System, 2016), Sweden (OECD, 2015b, p.7, p.14), China (National Plan, 2010, pp. 9, 21, 25, 47), South Korea (OECD, 2016a), and New Zealand (Ministry of Education, 2015). It is also a goal of the OECD (2006), and the Australian state of Tasmania (Education Report 2015/6) (sic). Organisations of International pedagogies refer to the importance of a lifelong quest and love for learning (Association of Waldorf Schools of North America, 2020; Montessori Australia, 2020, IB 2017, Mission Statement).

One document conceived in terms of “belonging, being and becoming”, but not in terms of lifelong learning, is ‘The Early Years Learning Framework for Australia (COAG, 2009, rev. 2019, referred to in Section 1.6). The words “belonging, being and becoming”, are “fundamental to the Framework” (p.7). They characterise “children’s lives” and their connection to “family, community, culture and place” (p.7). The Framework draws on “conclusive international evidence that early childhood is a vital period In children’s learning and development” (p.5). It offers “a vision for children’s learning” (p.5).

The Framework conceives ‘*belonging’* (sic) as “central to *being* and *becoming*” (sic). “*Being* recognises the significance of the here and now in children’s lives”, including their self-knowledge, and relationships with others (p.7). *Becoming* reflects the process of rapid change that occurs and children “learning to participate fully and actively in society” (p.7). In outcome children “have a strong

sense of identity”(pp.21-7), and are connected with and contribute to their world” (pp.28-32). They have a strong sense of wellbeing (pp. 33-35), and are confident, involved learners (pp.36-40), and effective communicators (pp.41-7).

Professional statements indicate an emphasis and sense of responsibility of governments and school authorities, commencing from early childhood education, to the formation in each human individual, of adaptive learning skills, particular attitudes, and joy in learning to learn, which will continue throughout adult life. Such statements typically beg the question of how these desired ends are to be achieved. They assume consequential benefits in the formation of learning communities and societies in support of children, in economic development and in individual and collective human development.

3.2.2 Research of the human brain and nervous system - neuroscience

Research into the operation of human and animal brains, under laboratory conditions, has been facilitated, since the 1990’s, by such techniques as functional magnetic resource imaging (fMRI), and near-infrared spectroscopy. These techniques observe and measure blood flow and brain activity. Research has focused particularly on the brain’s physical structures, and the apparent functions of those structures relative to each other and to the physiology of the human body and its nervous system.

Neuroscientific research of the human brain explores the functional relationships of the brain and body that seem common to most human beings, and human

differences of brain functioning by gender, age, culture, health conditions, injury, disability, left and right handedness. Research has offered insight into the brain's 'plasticity' – its ability to recover or reassign certain functions lost through injury, or genetic disability (Jarvis & Parker, 2005, p.38; Nelson, Kendall & Shields, 2014, Introduction, Pathways of Development).

The research of particular interest to the conception and practice of early childhood and school education is research linkage of cognitive and emotional functions of the brain, and brain research with respect to nutrition and primary carer relationships, memory, language, number sense, music, visual perception and movement. Research has shown the importance of the first two years of life in nutrition and environmental experience. It has prompted "brain-based" approaches to teaching and learning (Caine, Caine & Crowell, 1996; Caine & Caine, 1997; Howard-Jones, n.d. 2007; Jossey-Bass, 2008; Darling-Kuria, 2010). It has revealed the brain's structural and functional 'interconnectedness'.

The exposition here considers aspects of brain and human learning research of most relevance to the thesis: General principles of mind and body, cognition and emotion, brain and health, and the interconnectedness of brain functions.
This last prepares for the holistic learning principle of Chapter Five.

Principles of linkage and interconnection

The theoretical perspective that the human mind, brain, body, and senses are linked, conceptually and functionally, was presented at Section 2.1. Brain research

does not currently resolve the conceptual and functional relationship, but supports it. It does not explain how what is conceived as the human 'mind', is embedded within the neurological mechanism of the brain, nor how meaning, presumed to be thought and felt in the mind, and stored in memory, develops from sensations (Jarvis, 2012, p.7, pp.19-21, p.46). Neuroscience is however demonstrating, perhaps irrevocably, that human learning, human living, is a bodily phenomenon. Learning engages the entire physiology (Caine, Caine & Crowell, 1996, pp.17-27). This bodily principle has been insufficiently recognised by learning theorists (Jarvis, 2012, p.33, p.38).

The second principle, also now clearly established, is the linkage of thought and emotion in brain structures and processes. Again, it is not clear how the linkage works, but feeling and thinking, perhaps remembering, certainly attention (Sousa, 2001, p. 46, p.180) occur together in physiological processes.[94] This principle prompts recognition of the importance of emotion in facilitating students' learning. Emotion guides cognitive learning, both conscious and unconscious, and learning is impaired without it (Immordino-Yang & Faeth, in Sousa, 2010).

School learning should engage and motivate learners, such that children love learning and are resilient (Walker & Bass, 2011, p.3). Conversely where children

[94] Willis (in Sousa, 2010, Chapter 3) warns that teaching strategies derived from neuroimaging research are at best compatible with current research about how the brain seems to deal with emotions, environmental influences and sensory input (p.46).

are disengaged, reluctant, afraid, angry, it is very difficult for any form of intended learning to occur. Students must feel physically safe and emotionally secure before they can focus and learn (Sousa, 2001, pp.182-3). Damasio and Damasio (in Suarez-Orozco & Sattin-Bajaj, 2010) identify *engagement and attention* (sic) as two leading consequences of emotion necessary for education to proceed (p.66). They say that emotion is also critical to creativity and moral behaviour (pp.66-8).

The third principle is the linkage of the brain with bodily health.[95] Damasio and Damasio (in Suarez-Orozco & Sattin-Bajaj, 2010) say brains need physical health – nutrition, and preferably the absence of disease, anxiety and distraction (p.66). Jensen (1998) notes that health and diet provide energy, efficiency, and oxygen for learning (p.10). Jensen (2000) refers to outdoor play and learning, to getting outside into the light and sun (pp.68-9). Boyd and Bee (2012) note the importance of health and wellness to the physical development of the brain and nervous system (p.102). Brierley (1994) refers to the effects of poor nutrition on the development of the young brain (p.35). The converse of the principle is the benefits given by active learning to mental and physical health (Jarvis, 2012, p.131).

The fourth and final principle – of the interconnectedness of the brain's structures and functions - is perhaps the most evident and significant principle arising from neurobiological research.

[95] Bodily health will be further considered in the paradigm of whole child in Chapter Four.

Pollard et al. (2008) consider how new knowledge of body, mind and brain behaviour is affecting understanding of human and children's development and learning (Chapter 7, pp.185-6). They offer a distinction of the brain as the biological organ, the mind as the processor of the personal meanings, influenced by culture, which become embodied, and behaviour which is action based on thoughts and feelings (p.186).

The authors say the human brain has three biological elements – the reptilian system to do with survival monitoring, the limbic system to do with emotions and long term memory, and the two hemispheres comprising the neocortex for mental functioning. Parts of the left hemisphere of the brain are associated with analytic capacities such as language, logic, pattern recognition and reflective thought, whereas much of the right hemisphere is associated with more intuitive and representational capacities such as visualization, imagination, rhyme, rhythm and expression. The authors warn that this knowledge (of partial hemispheric association) should not oversimplify a complex interacting cognitive system. There are trillions of interconnected neural cells within the brain and the number and complexity of these affect the brain's capacity to act and learn. Posner (in Sousa, 2010) also observes that several neural areas must "be orchestrated" to carry out any one task (p.32). With practice, the connectivity between brain areas is strengthened (p.40).

Ormrod (2012) presents a similar view. She describes the physiological interconnectedness of the brain, and observes that while some kinds of processing

of experience seem to occur in particular regions of the cortex, other areas seem to function by association, integrating information from various parts of the brain (pp.18-21). This interconnectedness shows in observation of the apparent function of attention, learning, memory, and motor skills where input appears to be handled in multiple places and the brain's "messages go everywhere" – even a single word tends to be distributed across many parts of the brain (p.21).[96] Such observation does not explain whether or to what extent the brain is "hardwired with certain knowledge" or with predispositions to acquire it (p.27).

Lefrancois (2006) describes the brain's anatomy in some detail (pp.164-7). The brain is the most complex structure of the universe (p.162). He says connectionist or neural network models now dominate the study of cognitive processes, providing new insight into understanding both general and atypical human development, and individual differences (pp.286-8). Neural network models provide a functional analogy for the notion that experience alters the brain's wiring (pp.286-8). He says we do not yet know where 'connectionism' leads (p.269). There may be changes in neural receptors and transmissions, but we still don't know exactly what happens when people learn and remember and forget (p.318). We need to find for example the connections between thought processes, brain structures, reading skills and any innate capacity for numerosity (Martinez (2010, p.2, p.270). Jensen (1998) believes the evidence is persuasive that the brain may be designed

[96] Ormrod cites Bressler (2002), Posner & Rothbart (2007) Rayner, Foorman with others (2001), Thelen & Smith (1998).

for music – music engages both sides of the brain (pp.36-7). Eliot (1999, p.5), Jensen (2000, Chapter Two) and Sousa (2006, Chapter 6) are interested in the implications for movement. These ideas will be pursued further in Chapter Five.

3.2.3 Social and emotional learning, empathy, and visible learning

3.2.3.1 Social and emotional learning

The seven principles of learning of the OECD (2010) include ”the social nature of learning” and “emotions are integral to learning” (p.6). “Emotions are the primary *gatekeeper* (sic) to learning” (p.4). “Learning results from the dynamic interplay of emotion, motivation, and cognition, and these are inextricably intertwined” (p.6). The Ministry of Education Singapore (2018) framework of *21st Century Competencies* has three concentric rings, the middle of which “signifies the Social and Emotional Competencies – skills necessary for children to recognise and manage their emotions, develop care and concern for others, make responsible decisions, establish positive relationships.”

Social learning, which is associated with contexts of learning, and emotional learning are treated as two discrete concepts in educational discourse, but are also taken together, as the examples above illustrate. Gardner’s theory of intelligences (1993a) (Section 2.2.3) grouped them together as one intelligence - inter-personal and intra-personal intelligence. In contemporary educational parlance, there is an acronym (discussed below) ‘SEL’, which is used to refer to both ‘social-emotional’ and social and emotional learning. What is of importance here is explicit

recognition of the principle of both emotion and social interaction involved in and influencing all human learning.

The theoretical and professional research perspective with respect to social and emotional learning (SEL), is accumulating. Views of the significance of social and emotional learning for students in the USA are provided by Denham and Weissberg (2004) for early childhood, by Payton et al. (2008) for Kindergarten to Year 8, by Chung and McBride (2015) for middle school and by Brackett (2006) and Steinberg (2015) for high school adolescents.

Other studies consider the relationship of the development of SEL skills with self-regulated behaviour and social interaction (McKown, Gumbiner, Russo & Lipton, 2009), academic success (Benningfield, Potter, & Bostic, 2015; Durlak, Weissberg, Dymnicki, Taylor & Schellinger, 2011; Elias, 2003, 2006; Zins, Bloodworth, Weissberg & Walberg, 2007), learning disabilities (Elias, 2004) and with mental health (Nelson, Kendall, & Shields, 2014).[97]

There are implications for teaching and learning from the findings of neuroscience showing the connection between emotion, social functioning, and decision-making (Blakemore & Frith, 2005; Hohnen & Murphy, 2016; Immordino-Yang & Damasio, 2007; Nelson, Kendall, & Shields, 2014).[98] There are recent studies of the

[97] The authors aver that children have “innate and inherited characteristics” directing the course of their biological, psychological and social development (Introduction).
[98] Section 5.2 will provide some discussion of SEL brain research.

economic value of social and emotional learning (Belfield, Bowden, Klapp, Levin, Shand, & Zander, 2015; Committee for Children, 2015; Klapp, Belfield, Bowden, Levin, Shand & Zander, 2017) and an argument for social and emotional learning as a public health approach to education (Greenberg, Domitrovitch, Weissberg & Durlak, 2017).

CASEL (Collaborative for Academic, Social, and Emotional Learning) is an American organisation formed in 1994 to promote social and emotional learning in schools particularly, but with parents and communities at the same time. CASEL (2020) has identified five interrelated sets of cognitive, affective and behavioural competencies for social and emotional learning. For students, they are (in a circular pie-chart model): Self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.

CASEL (2020) says that social and emotional learning is a process of acquisition and application of the knowledge, skills and attitudes involved in understanding and managing emotions, feeling and showing empathy, achieving positive relationships, positive goal setting and achievement, and responsible decision making. SEL programming in schools conceives that the best learning in schools occurs where there are supportive relationships and learning is engaging, challenging, and meaningful. The work and conception of CASEL is discussed, with examples, in Elias (2006), Elias, et al. (1997), Elias and Weissberg (2000), and Elias, Zins, Graczyk and Weissberg (2003).

From this landscape, these principles contribute to the thesis discussion. Zins, Bloodworth, Weissberg and Walberg (2004)[99] explore the scientific base linking social and emotional learning to success in schools (Chapter 1). “Schools will be most successful in their academic mission when they integrate efforts to promote children’s academic, social and emotional learning” (p.3). They note that SEL also affects non-academic outcomes and lifelong learning (p.3). Effective learning practices include a ‘person-centred’ focus, encouraging both self-awareness and social cognizance (p.6). Elias (2003) provides a rationale and framework for combining academic and social-emotional learning into educational policy (Abstract). Social-emotional learning includes aspects of education referred to as character education, service and citizenship learning and emotional intelligence (p.6).[100] Elias says the combination of academic and social-emotional learning provides the balance needed to encourage all children to learn, work and contribute to their fullest potential – a balance challenging educators in a complex and fragmented world (p.6).

Immordino-Yang and Damasio (2007, p.3) draw on the findings of neuroscience to make these assertions. The “connections between emotion, social functioning and decision making have the potential to revolutionize the understanding of the role of affect in education”. In particular, the aspects of education on which schools focus

[99] Goleman, D. provides a Foreword (pp.vii-viii). He says the book specifically focuses on interventions enhancing student learning.

[100] Elias says these aspects are part of what some call ‘whole child’ education (Thesis Chapter Four).

most heavily – learning, attention, memory, decision making, social functioning – are “profoundly affected by and subsumed within the processes of emotion”. The evidence the authors present sketches the “neurobiological underpinnings of morality, creativity and culture”, all critical to education. They hope “a better understanding of the neurobiological relationships between these constructs” will contribute to “innovation in the design of learning environments”.[101]

3.2.3.2 Empathy, empathetic

Two further words require attention here as specific connotations within social-emotional learning - ‘empathy’ and ‘empathetic’[102]. Cozolino (2014, Preface) says advances in interpersonal neurobiology have prompted terms such as empathy, compassion and mindfulness to enter the scientific lexicon. He says awareness of others precedes self-awareness in evolutionary human development.

Huitt (2011, p.11) cites Goleman (2006) who identifies empathy and empathetic accuracy as subcomponents of social awareness, one of his two categories of social intelligence. Elias (2006) says it is a growing expectation of schools to understand and practice caring for others, and promote community service to build “empathy” (pp.4-5). McKown, Gumbiner, Russo and Lipton (2009) conclude from

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[101] Immordino-Yang and Damasio (2007) provide a graphical picture of the neurological relationship of cognition and emotion (Figure 1, p.8).

[102] ‘Empathy’ was used with respect to the aims of Drumahoe PS in N Ireland (Section 1.5.2). Chapter Two referred to teachers’ empathy with students (Wolf, 1989), and empathy with the natural world (Kellert & Wilson, 1993).

two studies that SEL skills include three factors, the second of which includes the ability to interpret social meaning, and empathy (p.858). CASEL (2020) above, describes the process of SEL as acquiring and applying knowledge and skills of feeling and empathy for others (What is SEL?, para. 1). Social awareness is the "ability to take the perspective of and empathize with others … from diverse backgrounds and cultures" (Core SEL Competencies).[103]

Laura, Marchant and Smith (2008, Chapter 9) add another layer of interpretation and emphasis to the concept of empathy. They use the term 'empathetic' to describe the way they wish human knowledge to be reconceived (p.149). Empathetic knowledge allows for and encourages the development of a "participatory[104] consciousness" in all learners, which in turn will encourage moral reflection and personal immersion in relationships and responsibility with and toward human and natural environments (p.153). Laura and Cotton (1999) discuss empathetic education from this perspective.

The introduction to Chapter Two referred to Faure's belief (in UNESCO, 1972, p.xxv). that human beings are capable of development such that they care for other

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[103] These are provided in a circular model: The CASEL Wheel & Competencies.

[104] Heron (in Illeris, 2009) distinguishes between 'individuating' and 'participatory' ways of learning and living. Participatory modes of feeling, reflection and intention are set within an extended awareness of the world, an "attunement to the wider scheme of things" (p.130). Davis, Sumara & Luce-Kepler (2008) also refer to a theory of "participatory epistemology" (p.14) asserting that all aspects and objects of the world participate with humans in ongoing knowledge production. Is there a "participatory nature of knowing" (p153)?

human beings and for the planet on which human beings live. The development of participatory consciousness, of empathy for others and towards the natural environment is another principle of human learning to be carried forward in the thesis argument.

3.2.3.3 Visible learning

The discussion of Reggio Emilia education at Section 1.6 of the thesis referred to 'visible learning'.[105] Reggio Emilia asks: How can we make children's learning visible? Hattie (2009) developed his own concept of visible learning by conducting over 800 meta-analyses of the factors in school settings affecting student learning. Hattie (2012) asks what visible learning looks like in a school (pp.vii-ix)? What are the attributes of schooling that truly make the difference to student learning, and to *all* (sic) in a school visibly knowing the impact they have on the learning in the school – of students, teachers and leaders (p.1)? In Hattie's terms the 'visible' aspect also refers to teaching being visible to students (when teachers see learning through the eyes of their students) (p.5), in such a way that students can become their own teachers (p.1). This is a "core attribute" of lifelong learning, self-regulation, and of love of learning (p.1). Where teachers and schools evaluate the effect of what they do on student learning, there is "visible learning inside" (p.12).

[105] The Report of Project Zero (2001) says documentation of children's learning processes helps make learning visible (p.17). RE educates the intrinsic values of each individual to make them visible, conscious and shared (p.38). Carlgren (1976) refers to eurythmy in Steiner learning as "visible speech, visible song" (p.56).

Hattie (2012, pp.14-15) says the simple principle underlying most of the syntheses he discusses in his book is that visible teaching and learning "occurs when learning is the explicit and transparent goal, when it is appropriately challenging" and when both teachers and students seek to ascertain whether the intended learning has been achieved. Visible teaching and learning occurs when there are deliberate goals for learning, deliberate practice aimed at achieving them, feedback is sought and given, and the people participating in the learning are active, passionate and engaging people. For Hattie the most remarkable feature of his evidence is that the greatest effects on student learning occur when teachers become learners of their own teaching, and students become their own teachers. It is the visible teaching and learning (visible to both students and teachers, p.17) that makes the difference.[106]

3.2.4 Personalised learning - and technology(ies)

UNESCO (1972) referred to the need for more "individualized" (sic) teaching and learning, and the opportunity being provided by technologies to support that (pp.130-4). Chapter Two of the thesis discussed individual differences and differentiation (Section 2.6). Chapter One introduced 'personalised' education in the discussion of aims (Section 1.1) and referred to Gardner (2006) believing that school education needed to become more "personalised" (p.210).

[106] Visible Learningplus (sic) (2015) provides a case study from Valley View School District, Illinois, USA. Hattie & Zierer (2017) offer '10 Mindframes for visible learning'.

These three terms – individualised, differentiated, and personalised – overlap in educational parlance, but their emphasis is similar. They indicate recognition of the need for formal education systems to change from group provision which assumes students' age and developmental similarities, to provide in a much more personal way for the very different capacities, skills, emotions, needs, social and cultural backgrounds and developmental subtleties that individual children bring to early childhood and schooling education. Personalised learning focuses specifically on the learning of each student. it encourages learners to pursue learning for themselves and potentially to do so lifelong.

The discussion below provides examples of international, scholarly, national, and professional statements with respect to the concept and principle of 'personalised learning'. Some statements link personalised learning with technology, but the two do not necessarily accompany each other. Technology provides one means for formal education to be more personal, but does not automatically make it so. It depends on how it is used in group instruction and learning for learning to be personalised.[107]

A research report from the OECD (2006) sees "personalising learning" as deriving from an awareness that "one-size-fits-all" (sic) approaches to school knowledge

[107] In October 2013 the researcher visited a "School of One" in Brooklyn, NY, which offers individualised mathematics learning, where students use computer programs designed to provide, monitor, and sequence their learning in a specifically personal way.

and organisation are poorly suited to both individual needs and those of the knowledge society (p.1). The OECD Report offers perspectives from the UK, Finland, Germany, Canada, France and Denmark. Ideas pertinent here are these. Personalisation is driven by a moral purpose to match teaching to individual learners, and to equip learners to pursue learning for themselves (p.1). It needs to be based on detailed knowledge of the capabilities of individual students and the accommodation of students' different approaches to learning (p.2).

The OECD Report (2006) sees personalisation as different from both individualisation and social learning. It is a way to make every student matter and to make learning opportunity more equal, by fostering learning skills and motivation, using collaborative learning, using technology as a personal cognitive and social tool, and providing new learning environments and models of assessment (pp.2-3). The Report believes the insights of neuroscience into the processes and stages involved in human learning, in children and across the human life-cycle, including the place of emotion, will inform the personalisation agenda (pp.3-4). Lifelong learning presupposes a lot of personalisation (p.5).

Conole (in O'Donoghue, 2009) cites the OECD (2006) report above (p.1, p.5). She wants to align personalised learning with other policy agendas for lifelong learning and the development of an information society (p.2). She says there are no specific learning theories nor unifying theory for personalised learning (pp.9-10), but personalised learning reflects learners interests, preferred approaches, abilities and choices, and tailored access to materials and content (p.2). Learning needs to

be re-conceptualised for the mobile age (p.9). Technology supports flexible learning (p.2) and virtual communities (p.9). Granter (2009) says ICT gives students more choice over the content they receive (p.17). Personalisation of the learning environment also improves the opportunity for students to learn from each other (p.17).

Keamy and Nicholas (2007) and Keamy, Nicholas, Mahar and Herrick (2007) review the concept of personalised learning in Australia[108] and overseas. Keamy and Nicholas (2007) say the use of the term 'personalised learning' is recent (p.137). The term "has become embedded in a wider argument" for services reform responding "more directly to the diverse needs of individuals" (p.137). In Australia, it is associated with "the awareness that "one-size-fits-all" (sic) approaches to school knowledge and organisation" are poorly adapted to both individual needs and those of "the knowledge society" (p.137). The authors cite the OECD Report (2006, p.3) referred to above. They see the OECD emphasis with respect to personalised learning as lifelong. To achieve implementation of personalised learning in the variety of world contexts will require "deep views" of the concept (p.137).[109]

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[108] The Goals for Australian Schooling (2008, 2019) discussed at Section 1.3 refer to promoting "personalised learning that aims to fulfil the diverse capabilities of each young Australian".

[109] Keamy, Nicholas, Mahar and Herrick (2007, p.22) note that in NZ, where personalised learning was being introduced as a system wide approach, and a means of renewing inclusiveness, the emphasis was on the co-construction of learning, where learners share and develop knowledge together.

Keamy and Nicholas (2007) refer to Allen (2002) who argued that personalisation and personalised learning are “an integral part of … instilling a sense of belonging” (p.138).The authors also cite Littky and Allen (1999, p.3) in the USA saying that “truly personalized learning requires reorganizing schools to start with the student, not the subject matter” (p.139). “A school that takes personalized learning to its full potential” will make it a priority “to know students and their families well enough to ensure every learning experience excites students to learn more” and prepare for lifelong learning (p.139). A school “embracing the concept of personalising education, will promote ‘a community of learning’ (sic) approach” (Keamy, Nicholas, Mahar & Herrick (2007, p.3).

Burden and Atkinson (2010) refer to other scholars’ definitions in their discussion of the personalisation of learning. They quote Gilbert (2006, p.12): “Personalised learning and teaching means taking a highly structured and responsive approach to each child’s and young person’s learning, in order that all are able to progress, achieve and participate” (p.92). Personalised learning is not the same as individualised (one to one) learning (p.94). Nor is it the same as self-regulated learning only (p.93). It involves both modifying the environment around each learner to fit them, and the development of strategies to help each learner to become more flexible in outlook and method when learning. It is a “question of developing social practices that enable people to become all that they are capable of becoming” (p.93). The authors cite and quote Pollard and James (2004, p.6).

Dean (2006) and Bentley and Miller (2004) offer congruent views with different emphases. Dean (2006) says "personalised learning involves helping each child to reach his or her full potential – intellectually, personally, socially" taking into account their differences in culture, ability and interests (Cover page and p.1). Dean adds two further elements. Personalised learning encourages children to make decisions from an early age about their own learning and how they learn (p.1).[110] Personalised learning helps children to become sensitive, balanced individuals who have a positive self-view and are good human beings who care for and relate to others (p.1). Bentley and Miller (2004) say "personalised learning takes an old idea – that of differentiated teaching and learning in response to the profile of the individual – and makes it a central organising principle" (p.3). In a personalised system, *engagement* (sic) is as fundamentally important as attainment and progression (p.7).

In the UK, a research survey by Shuayb and O'Donnell (2008), (referred to previously at Section 1.1), explored the aims and values of primary education (2000-2006) in six countries. The authors observe that at the turn of the 21st century, England's "aims, values and purposes and values for education" … "embraced personalised learning" as well as socioeconomic philosophies (p.9, p.25). Cheminais (2010) discusses personalised learning in an Every Child Matters (ECM) context. She says: "Personalised learning is about enabling all children and

[110] Meighan (1995, p. 17, p.19) is adamant this is how children learn. Education needs to be reconstructed to make children's learning the central business of schooling (p.5).

young people to achieve the best they can through working in a way that suits them" (p.41).[111] Cheminais says every child mattering and personalising learning are dependent on understanding the needs of "the whole child" (p.41).

Education Scotland (formed in 2011) entitled its original Corporate Plan 2013-2016, "Transforming lives through learning". The Plan envisaged a system where "all learners progress through personalised learner journeys" to gain career and social skills (p.09). The Plan intended to influence teachers to engage individual students in "excellent learning" and to support parents of learners, and learners themselves (p.03). Notwithstanding these emphases, neither the national curriculum in England (Department for Education, 2014) nor the current Corporate Plan of Education Scotland 2019-2022, refer to personalised learning.

In Denmark and France also, there is a personalised learning focus. The Denmark "Folkeskole builds on the principle of differentiated teaching" (The Ministry of Higher Education and Science, 2016, p.3). It caters for "the needs of the individual pupil" (p.3). "Teachers develop individual learning plans for pupils" (p.3).[112] In France, "the school is a place of teaching but also of community" (Eduscol, 2018). Student centred support "to safeguard equal opportunities" offers "a differentiated

[111] Cheminais (2008) provides a practical guide to personalised learning to support learner diversity for teaching assistants.

[112] Lifelong learning is a key principle in Denmark (p.20).

response to learning difficulties” by “personalising pathways” (ibid). There are digital policies for innovation and for teaching with technology.

A particular government initiative in Australia was the introduction of personalised (not individualised) learning plans for aboriginal and islander students. The theoretical perspective prefacing the program asserted that personalised learning focuses on working with each student, in partnership with parents and carers, to develop plans reflecting each students capabilities, strengths, needs and goals, while presuming all students can learn at the same level, provided appropriate conditions are created (Australian Government, DEEWR, 2011, pp.1-2.). A personalised learning approach is however not just for aboriginal and islander students: Many schools have chosen to implement it for all students (p.22).

One school example is Stockdale Road Primary School in Victoria, Australia, whose philosophy “reflects a developmental, child centred approach … anchored in the personal interests of the child” (2019, Principal’s Welcome). The partnership with parents assists “personalised learning” (ibid). Montessori pedagogy pursues a personal approach to learning in all its schools. In a Montessori classroom, “children are able to engage with the activities according to their individual interests and at their own pace. In this way, learning becomes highly personalized (sic)” (Montessori Australia, 2020).

Technology

Sampson, Karagiannidis and Kinshuk (2002) review “the shift towards personalised learning from an educational, technological and standardisation perspective” (Abstract). They see an emerging trend in education and training towards “on-demand knowledge experiences” tailored to individual learners, which analyses and takes into account their different skills, cultures, needs and outlooks. An “e-Learning paradigm shift” is occurring (Abstract). E-Learning uses new technologies to provide “*personalisation*” (sic), where programs are “customised to individual learners” (p.2). ‘With this context”, personalised learning advocates that learning should not be constrained by time or place or media of communication (pp.2-3). The authors see the concept of personalised learning as deriving from cognitive and constructivist theories of learning which argue for the active involvement of learners (p.3).

Galloway (2009) considers personalised learning and harnessing technology in the context of a UK initiative where every child matters. He interlinks the three policies. To achieve the ‘Every Child Matters’ (ECM) agenda – to put the individual child’s needs at the centre of service delivery (of health and schooling) requires a pupil centred approach, with technologies making it possible to understand each individual more precisely, and for learning to occur more flexibly in a personalised way (p.1). The growing capacity for personalisation must be technology rich (p.3).

Two studies in a USA context are those of O’Donoghue (2009) and Wolf (2010). Each considers the significance of the use of technology in personalising learning,

but each sees the potential for personalised learning to effect radical change in the practice of education systems. Personalised learning seems to have become “the new mantra in education” (O’Donoghue, 2009, p.xviii). O’Donoghue sees the environment of learning having changed from a didactic approach to one empowering learners to take responsibility for their own learning (p.xviii).

Wolf (2010) presents a shared vision of the ASCD and the CCSSO (Council of Chief State School Officers) in the USA for personalised learning on which educational equity and student success depend (p.5, p.9). Each student’s educational path, curriculum, instruction, and schedule should be personalised to meet his or her unique needs inside and outside school (pp.5-6). Personalisation like this “requires not only a shift in the design of schooling”, but in the use of technology (p.6). It cannot happen on any scale without it (p.6, p.10). The flexibility of technology enables all students to “gain proficiency independent of time, place and pace of learning” (p.7). The factory model of schooling cannot provide the personalised and engaging world outside school into which students minds and passions are plugged (p.8).[113] Personalised learning involves individualisation and pluralisation (multiple ways) of teaching and learning (p.12, quoting Gardner, 2010).

[113] The Report offers a comparison of the characteristics of mass customisation of education and personalised learning (p.13).

A paper from The Institute of Education Sciences in the USA (IES NCES, 2018) offers these qualifications with respect to digital learning.[114] “While access to technology can provide valuable learning opportunities to students, it does not guarantee successful outcomes”. The term ‘digital learning’ (as defined by the Every Child Succeeds Act (ESSA), 2015) “refers to any instructional practice that effectively uses technology to strengthen a student’s learning experience”. (IES NCES 2018, p.xi)). It includes “the use of data and information to personalize learning” and provide supplementary instruction (p.xi). The US Department of Education will release in 2020 a revised vision of a 2017 National Education Technology Plan. The plan’s vision is “to ensure equity of access to transformational learning experiences enabled by technology” for all students (2020, Home).

3.2.5 Learners and learning first

The thesis has acknowledged its primary assumption, that the purpose and focus of schooling and early childhood education is children and their learning, such that they participate positively in the world. However, as the introduction to this Chapter observed, the thesis research has found explicit recognition of this assumption as a principle or ideological perspective is relatively uncommon among national

[114] The Institute also offers research reference with respect to social emotional learning. New York State (2011) offers a focus on social and emotional learning (Section 3.3 and Chapter Five).

authorities and organisations. It is axiomatic for international pedagogies and particular schools. Examples of each are discussed below.

National authorities

The Department of Education of the Australian state of Tasmania carries the banner "*learners first"* (sic). The 2018-2021 Strategic Plan is entitled "Learners First: Every Learner, Every Day". The summary chart says The Department's "commitment" is to "inspire and support all learners to succeed as connected, resilient, creative, and curious thinkers".[115] The goals include engaged (involved) learning, and learners who feel safe, with literacy and numeracy skills and confidence. Tasmanians are to be encouraged "towards lifelong learning" (Annual Report 2015/16, p.8). There is an additional program *Learning in Families Together* (LIFT) (sic) to support schools and families with high needs (p.3). Parents and carers are "partners in their children's learning" (p.10).

The Corporate Plan 2019-2022 of Education Scotland (referred to above at Section 3.2.4) carries the motto "For Scotland's learners, with Scotland's educators". "Education Scotland continues to focus on adding value to learning" (p.3). 'Our focus … is that all learners and educators … must be empowered and inspired to shape innovative learning" (p.3). Learners, wherever learning takes place, are "at the heart of everything we do" (p.3). The value of 'excellence' involves supporting all learners "to achieve their highest aspirations" (p.5). "Getting it right for every

[115] No page number is given.

child” focuses “on meeting the needs of diverse learners” (p.12). An associated national program 2018-2021 involving parents, family learning, and learning at home is ‘Learning together“. Its “purpose is to support the learning and development of children and young people” (Purpose, 2018).

The New Zealand Ministry of Education also makes a range of learning statements. The Education for All 2015 Review declares that the principles underpinning all NZ school decision-making “put students at the centre of teaching and learning” (p.11). The NZ curriculum “takes as a starting point a vision of young people as lifelong learners” (p.11). “Successfully developing students’ skills, knowledge and dispositions to learning through education is strongly linked to better social and economic outcomes for the individual and society” (p.9). A *Positive Behaviour for Learning (PB4L)* (sic) and associated school-wide program is provided to help schools develop “a social culture that supports learning and positive behaviour” (pp.15-16).

The Ministry of Education, NZ (2019) says: “Education in New Zealand is a student-centred pathway providing continuous learning progression”. “Early learning helps children to be confident and curious about the world.” “Additional learning support is available in every early childhood centre or school”. Communities of learning across NZ are groups of providers formed to support students’ learning pathways, to assist them reaching their full potential (Ministry of Education NZ, 2016, 2017).

Chapter One (Section 1.2) referred to the second declared goal for Australian schooling that all young Australians become creative individuals, informed community members and successful lifelong learners (Education Council, 2019). The Australian Curriculum from Foundation Year to Year 10 is designed in eight learning areas (ACARA, 2020) .

An Australian Government Review (Commonwealth of Australia, 2018) "to achieve educational excellence in Australian Schools" commences with these words: "In a world where education defines opportunity, schooling must support every one of Australia's … school students to realise their full learning potential and achieve educational excellence" (p.viii). The education of Australian students should be "tailored to individual learning needs" (p.viii). The Review believes however the Australian "industrial model of school education … is focused on trying to ensure that millions of students attain specified learning outcomes" arranged by grade and age, and is not designed to "differentiate learning" nor stretch students to "achieve maximum learning growth every year" (p.ix). To achieve such learning growth is the first priority of the Report. The second priority is to "equip every child to be a creative, connected and engaged learner in a rapidly changing world" (p.x).[116]

The OECD Report (2016b) on China says that relatively little is known about China's education system or about how its students learn. Curriculum reform

[116] Despite this learning emphasis, the opening heading of the Report reads: " Improving education outcomes is critical to future economic and social opportunity' (p.2).

commencing in 2001 has specific objectives which include “learning how to learn”, skills for lifelong learning, and change from passive learning and rote learning style to an active problem solving style (p.30). One of the strategic goals of China’s National Plan for Education Reform (Central Government, 2010), to be attained by 2020, is to “bring a learning society into shape” (p.9). The Plan wishes to make “a society in which every citizen is committed to learning and pursues lifelong learning” (p.21). “The “concept of lifelong learning” is to be fostered (p.25). “Lifelong learning networks” are to be constructed (p.47).

Pedagogies

A focus on learning and the learner is foundational to international pedagogies and explicit to individual schools. Montessori education “inspires children towards a lifelong love of learning by following their natural developmental trajectory. Children become confident, responsible, independent learners, who trust in their own abilities” (Montessori Australia, 2020). The “Montessori programme forms the basis for a persistent attachment to learning” (ibid). “Montessori classrooms provide a specially crafted learning environment” where children are able to follow their “innate passion for learning” (ibid).

Montessori Australia (2018) responded to the Australian Government Review (2018) referred to above. Montessori supports placing “the learning growth of each

student at the centre of our education model" (para. 2). "Self-regulated learning[117] is a key capacity for success in a knowledge economy" (para. 8). Montessori Australia's recommendations for education innovation to transform the industrial model of schooling and "better support teachers' ability to differentiate learning" include "individualised learning based on the student's developmental level", prepared "learning environments to encourage opportunities for self-regulated engagement" and "holistic curriculum with interdisciplinary learning (Key Messages).[118]

The conceptual approach of Steiner education (Gidley, 2008) is an integrated approach to child development rather than of the learner per se, but explanatory statements offer a learning focus. The Association of Waldorf Schools in the USA (2020 Waldorf Education) says that arts are integrated into all academic disciplines "to enhance and enrich learning" (para. 1). Waldorf education "aims to inspire lifelong learning" (para. 1). "Teachers in Waldorf schools are dedicated to generating an inner enthusiasm for learning within every child" (para. 5)."Waldorf education is truly *Inspired Learning* (sic)" (para. 6) The approach to education of the Steiner Academy Hereford, UK (2019), "is based on the simple but profound insight that children learn in different ways at different stages of their development"

[117] The American Montessori Society (2020) says the Montessori method views the child as "capable of initiating learning".

[118] These ideas are developed further in Montessori Australia's 'Position Paper' (2018).

(Welcome). The school “provides a creative and peaceful learning environment” (Principal’s Welcome).

Reggio Children (2019) offers this opening statement. “The Reggio Emilia Approach is an educational philosophy based on the image of the child with strong potentialities for development and as a subject of rights, who learns through the hundred languages belonging to all human beings, and grows in relation to others.” The Reggio Emilia traveling exhibition ‘The Wonder of Learning’ has been touring North America for ten years, 2008-2018. The promotion of the exhibition quotes RE founder Loris Malaguzzi. “The wonder of learning, of knowing, of understanding is one of the first, fundamental sensations each human being expects from experiences faced alone or with others.” (Ontario Reggio Association, 2017).

A feature of Reggio Emilia is the observation and documentation of learning undertaken by teachers all day, every day (Gariboldi, Pugnahi, & Mussini, 2018). TNS Beaconhouse (2015, The Reggio Emilia Approach), was “the first school in Pakistan to embrace the Reggio Emilia Approach”. It is “the overarching philosophy that scaffolds” their “project-based learning”. The city of Reggio Emilia was where “a refreshing new approach to learning” arose. RE offers “a holistic approach to both teaching and learning, based on the principle of learning by doing”. RE requires “children have some control over the direction of their learning; they must be able to learn through the experiences of touching, moving, seeing, listening and hearing”. Moreover parents, teachers and the local environment have the “common purpose - to create a learning culture”.

The International Baccalaureate does not offer a learner centred model at the heart of its conceptual framework, but the three school programmes of the IB pursue students' development according to an 'IB learner Profile' (Section 1.4.3) (IB, 2017, 2020). The profile describes ten "human capacities and responsibilities" (including inquiring, knowing, thinking, caring, reflecting) that "imply a commitment to help all members of the school community learn to respect themselves, others and the world". The PYP programme prepares students to become "lifelong learners".

Walker Learning is an Australian devised pedagogy for children in early childhood and primary school settings. As the name implies, it offers a learner and learning focused approach. Before school from birth to six years, Walker Learning creates "an intentional and engaging learning environment" (Bass & Walker, 2015, p.61). Thereafter, the Walker Learning program (Walker & Bass, 2011) "seeks to ensure that classrooms are filled with highly motivated children who are learning how to learn" (p.2). "We want children ... to have a sense of empowerment and ownership of their own learning, to view the learning process as meaningful to their lives now and for the future" (p.2).

Schools

Individual schools in Australia and worldwide declare their learner and learning focus. At Penola Primary School (n.d. 2020) in South Australia where the "learning opportunities … are stimulating and challenging", the learning environment and teaching methodologies are based on current brain research and theories of "how to maximise learning" (About Our School). Stockdale Road Primary School (2019)

in Victoria, (referred to at Section 3.2.4), promotes its commitment to individual student learning: “Not all children are ready to learn the same thing, at the same time, in the same way”. The school aims to “create a nurturing, caring learning environment for all students”, to develop lifelong learners, to provide an environment engaging children in relevant and meaningful learning (Principal’s Welcome).

Trinity Beach State School, Queensland (2018), where “every student matters every day” is committed to creating “a learning environment in which each child can thrive and become an independent, creative and connected learner”. “We are a community of learners”. “We believe in in engaging children in learning experiences that foster their independence … and the connectedness needed in today’s world” (Welcome).

Barker College, Sydney (2020) is an “Anglican community inspiring every learner … every day” (Mission) conveys its second key message as “Learn collaboratively. Think independently.” The Master Plan says: “Our school dreams of contributing to a sense of hope, of confidence and capacity for young learners.” The Approach to Teaching and Learning in Years 7-10 offers units of inquiry delivered “in a Blended Learning Environment”. Thriving at Barker “stands on four pillars”, each of which involves learning: inquiry learning, learning to think, learning to express gratitude, and learning to seek the welfare of the community (Thriving at Barker).

The goal of Columbia International School[119] in Matsugo, Japan, “is to create a fun, challenging and supportive lifelong learning environment” (2015, Welcome). The Garden School, Kuala Lumpur (2020), brings “out the best in everyone” … “through our unique learning culture” (Welcome) which provides student, teacher and community learning. This is expressed in a circular three station model.

The Green School, Bali (2020) provides a “community of learners making *our* (sic) world sustainable” (Mission). Children “learn by doing” and feel “the joy of being part of a vibrant community of learners” (Welcome). The “Green School Way” is to educate through “entrepreneurial learning”. The Founders wished “to create a new paradigm for learning” (Our History). The School Board is a “Board of Learners” (Governance). Hanahauoli School (2020) in Hawaii says it is dedicated to “making learning exciting”, and “challenging” (para. 1). Its mission “validates childhood and the way children learn as a foundation for lifelong learning” (para. 1). The school “is committed to learning by doing” (para. 2). “The learning environment integrates school life with the home”, world and community (para. 3). Children’s natural way of learning is to construct meaning through interaction “with their world” (Beliefs, para. 2).

The United World College of South East Asia (UWCSEA) (2018) provides ten interconnected “learning principles” as guiding statements for its “educational practice across all five elements of the UWCSEA learning programme” (UWCSEA

[119] The school is an Ontario, Canada certified school.

learning principles). The principles include that learners feel secure, understand the purpose of their learning, act on it and own it. The learning programme has five interlinking elements of equal value. They are represented in a circular model with the Learner at the centre. The school has its own research and development teams, and a Centre providing professional learning for educators. The learning principles are “a synthesis of current world research” … “derived from a perspective that is developmental and holistic” (Bray and Fairburn, 2013, para. 3*). Learning is the gateway to everything* (sic) (ibid. para.1). The authors cite Claxton (2008).

Conclusion

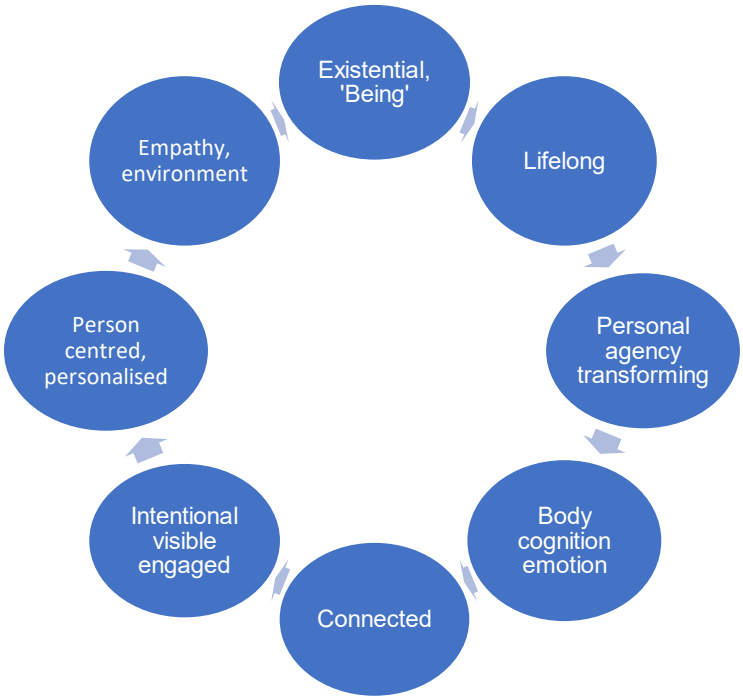
The scholarly and professional landscape of human learning is diverse in theory and aspiration. How human learning occurs and is supported by educational practice continues to provoke discussion. The thesis research suggests there is no paradigm for ‘learning to be and become’ besides an association with ‘lifelong learning’. There is deliberate articulated focus on student learning by pedagogies and some schools, but it is not universal.

There are influential themes, discussed above, beginning to change the contemporary discourse vis a vis children’s learning: Brain research, social and emotional learning necessarily being linked physiologically with cognitive learning, school learning becoming more personalised, with and without the support of technology, and learning being more effective when it proceeds from children and their interests and needs, rather than being imposed by instruction.

The concluding question is whether some coherence can be given to this disparate landscape of concepts of human learning? The Introduction to the Chapter proposed to identify some principles of learning to carry forward in the thesis argument. The term ‘principles’ of learning has appeared with some regularity in the Chapter discussion (Lefrancois, 2006, pp.7-8; OECD, 2010; Ormrod, 2012, pp.32-3; Green School, Bali; UWCSEA, 2018).

A summation of the principles of learning arising from the discussion is set out in Figure 4.

Figure 4 Principles of human learning



The principles are:

- Learning is complex and existential. It is an essential element of ‘being’ (Jarvis, 2006, pp.3-4).
- Learning needs to continue throughout life (Alheit, 2009, p.116; Jarvis, 2006, pp.3-4; UNESCO, 1972, 1996).
- Human learners possess and/or are capable of developing “personal agency” enabling them to pursue their personal learning, make choices, and manage their own behaviour (Lefrancois, 2006, pp.359-379; Ormrod, 2012, pp.112-3).
- Learning can occur without an accompanying change in behaviour (Ormrod, 2012, p.112). Transformational learning changes an individual’s frame of reference, lifelong. It alters our ‘being’ in the world. (Kegan, 2009, pp.41-4, 50-51; London, 2012, p.2; Mezirow, 2009, p.92).
- Human learning is a bodily phenomenon. Learning engages the entire human physiology (Caine, Caine & Crowell, 1996, pp.17-27; Jarvis, 2012, pp.33-8). Cognition, emotion and bodily health are necessarily linked in brain structures and learning processes (Boyd & Bee, 2012, p.102; Brierley. 1994, p.35; Damasio, 2010, p.66; Jensen,1998, p.10; Sousa, 2001, p.46, p.180).
- Effective learning practices have a person-centred focus (NZ Ministry of Education, 2015, p.11 Zins, Bloodworth, Weissberg, & Walberg, 2004, p.6). Personalised learning in response to the profile of an individual is a central organising principle for education (Bentley & Miller, 2004, p.3; Denmark Ministry of Education, 2016, p.3).

- Learning in schools needs to be intentional and “visible” (Hattie, 2012, pp.14-15). Students need to be engaged in their learning.
- It is possible and necessary for general human well-being that individuals learn empathy with others, and with the environment (Elias, 2006, pp.4-5; Laura, Marchant & Cotton, 2008, p.149).
- The structures and functions of the human brain are “interconnected” (Immordino-Yang and Damasio, 2007, p.3; Pollard, 2008, pp.185-6; Posner, 2010, p.32, p.40;). Learning is an interconnected phenomenon.

At this point in the thesis, it is suggested in the discussion and in the diagram that these principles of learning are linked. The concept of ‘connection’ will be pursued in Chapters Four to Six.

CHAPTER FOUR Concepts of whole child for 'complete man':

The holistic principle (1)

Introduction

The concept of completeness of human being, which Faure and UNESCO (1972) offer as the fundamental aim of education, is the integration of the physical, intellectual, emotional and ethical dimensions of human personality (pp.156-8). This Chapter examines both aspects of the concept: Child and human completeness, and integration of the dimensions of human personality.

The Chapter commences the argument for a holistic principle as the premise for educating for humanity. From this point of the thesis, there is a change in language. 'Whole' and 'holistic' are no longer peripheral terms but become the terms driving the discussion. These are the terms used consistently by educational discourse to convey sentiments and concepts of children and their learning from a complete perspective.[120] The second UNESCO Report (1996), for example, refers to lifelong education "forming whole human beings" (p.21) (Section 3.2.1).

The concept of 'whole child' was referred to in each of the first three Chapters (Sections 1.1, 1.2, 1.4, 1.6, 2.1, 3.2.1). White (2002), Cheminais (2010), Carter (2012), the Ministry of Education Singapore (2015), the practice of each of the four

[120] Dushi (2012b) says education "must cater for the complete development of an individual" (para. 2) (Section 1.2). This is the only use of such a phrase in the thesis so far, other than by UNESCO (1972).

international pedagogies – Montessori, Steiner-Waldorf, IB and Reggio Emilia - and individual schools such as Ross School, NY, conceive of education in terms of 'whole child'. Jarvis (2012), Peter Moyes School and Rivermount College refer to education of the 'whole person'. Each child is an "organismic whole" (Marshak, 1997, p.10). The term 'whole' is also linked with human participation in the world. Maria Montessori wanted to offer children a vision of the unity of the "whole universe" (Montessori Australia, 2017).

The terms 'integrated' and 'integration'[121] are however also needed semantically to convey the sense of bringing together the various elements of a concept, person and situation to form a (the) 'whole' and create 'wholeness'. The term 'holistic' is not a synonym of 'integrated', and carries other connotations. A holistic perspective assumes that the parts or elements of a concept or context are interconnected and are explicable only by reference to a concept of wholeness or integration. The assumption of interconnection of elements of a concept and/or context becomes a principle.

[121] Hargreaves, Earl and Ryan (1996, p.3) want the different aspects of schooling to be dealt with as an "integrated" whole (Section 1.1). The Sri Lankan Ministry of Education (2013) refers to a "well-integrated personality"; The Korean Ministry of Education (2019) refers to an "integrative learner" (para. 2) (Section 1.2). UNESCO (2015) thinks education needs to "Integrate the multiple dimensions of human existence" (Section 1.3.1). Grinberg (2013) refers to "integrated individuals" (Section 1.4.2).

These terms – whole, holistic, interconnected, integration - will be used in this Chapter and the remainder of the thesis to explicate Faure's and UNESCO's dictum (1972) with respect to human completeness and integration. Other changes of language are the use of 'domains' rather than 'dimensions' to describe intellectual, physical, aesthetic, social, emotional, moral and spiritual aspects of human being. The term 'capacities' is reserved for those aspects of human nature reviewed in Chapter Two – mind, self, intelligences, and creativity.

The terms 'whole' and 'holistic' are nonetheless used with a range of meanings in educational discourse. There is no single view of 'whole child', nor of a 'holistic approach' to child development, nor are the two terms coexistent in any instance of use. They represent variously a way of viewing children, their psychology and physiology, their education, learning and development, their health, their situation in multiple formative social contexts, and their relationships with the human and natural world (their ecology). The terms provide a frame of reference – a paradigm - to see organisms and structures as 'wholes', and to see contributing parts as interconnected and interdependent in making those 'wholes'.

The Chapter teases out differences and commonalities in the language of whole child and holistic approaches to the education and development of children. It offers five indicative models of whole child development as the first phase of a conceptual paradigm of what the thesis terms 'a holistic principle' prefacing aims of schooling and early childhood education.

The premise of the Chapter and the models proposed is that, despite the apparent lack of agreed definition, there is common ground for concepts of 'whole child' and 'a holistic approach' to children's development to prelude 21st century education. It is present in the humanist agendas for schooling of Chapter One, the conceptions of human nature and its capacities in Chapter Two, the principles of human learning of Chapter Three, and in the conceptions of whole child and a holistic approach presented here in Chapter Four.

The discussion following is in three sections:

- An overview of scholarly and field concepts of whole child and of a holistic approach to children's education and development, that are dominantly psychological and physiological. The concepts focus on capacities, domains, and dimensions of individual differentiated children. The domains attributed to whole children include the four dimensions of UNESCO (1972, p.155-6), but add others. Two possible models of 'whole child', conceived from a psychological perspective, are provided.
-
- An overview of sociological, ecological views of whole children which focus on the multiple contexts influencing individual children. These contexts are both internal and external to each child - personal health and the various communities in which they are formed. Particular exposition is made of the ASCD concept of whole child situated in community, and the professional practice of the concept, together with other holistic contextual concepts of whole child. Three conceptual contextual models are offered – the ASCD

model, a thesis contextual model, and a thesis model combining psychological and contextual approaches.

- An explanation of how such concepts of whole child and a holistic approach to children's development introduce the holistic principle and link to the thesis intent: Educating for humanity.

4.1 Concepts of 'whole child' in educational writings

20th and 21st century use of the term 'whole child'

It is difficult to establish when and where the term 'whole child' entered the educational lexicon. Kochar-Bryant and Heishman (2010, p.3) commence with a quotation from 1930 of a statement made in the USA, where the use of the term has been most frequent.[122]

> *To the doctor, the child is a typhoid patient; to the playground supervisor, a first baseman; to the teacher, a learner of arithmetic. At times, he may be different things to each of these specialists, but too rarely is he a whole child to any of them.*
>
> — From the 1930 report of the White House Conference on Children and Youth (sic)

Lanning (1960) says that educating the whole child had long been a goal in elementary education in the USA, but the ideal was then under attack from an emphasis on achievement and intelligence (p.283). He asks: What happened to diminish the idea that school should educate the whole child (p.283)? He identifies three factors: A clash in modern thought between what ought to be and what is; the talk of the need to guide the emotional growth of the child was not followed in

[122] A 'whole child' approach, particularly in a home schooling environment, is attributed to Charlotte Mason, a British educator of the late 19th and early 20th centuries (Nelson, 2011).

practice; and contention between the ideas of emphasising intellect or wholeness (pp.283-5). Yet even then there was a “wealth of evidence” supporting the concept that the school should teach the whole child (p.286). He makes one other observation relevant to the thesis discussion of ‘whole world’ in Chapter 6. He cites Judson (1956, p.78) discussing the evolution of human nature. A mechanism must work as a whole (p.286). We need to understand what constitutes a whole, the patterns and characteristics of its wholeness and “the nature of the integrating agencies” binding its parts together (p.286).

The specific concept of whole child and provocation of a “whole child movement” (Kochhar-Bryant and Heishman, 2010, p.6), is variously attributed by scholars (Bruce, 2011; Daly, 2004; Handlin, 1959; Petrzela, 2012; Stuckart & Glantz, 2010; Wilson, 2008) to each of Dewey, Froebel, Pestalozzi, Montessori and Steiner, albeit without specific citation to the use of the term ‘whole child’ in their writings. It seems these educators did not use the term. However, their different conceptions of the needs, interests and inner nature of the human child, of the role of the senses, emotion and activity in human development, of the significance of social interaction – particularly, but not only, in an early childhood context - provoked scholarly and practitioner awareness of childhood as a “phase of life in its own right” (Bruce, 2011, p17). Additionally they shared the further conviction that more than children’s intellectual development is required of school education. Stuckart and Glanz (2010, pp.v-viii, p.3), for example, attribute a philosophy of education addressing the needs of the whole child to Dewey, saying he prescribed an

education with a focus on the development of the whole child: Intellectually, morally, aesthetically, and socially.[123]

The NCCA Framework (2007, pp.30-34)[124] provides the key concepts of each of the educators named above (excepting Pestalozzi, but including, amongst others, Erikson). In sum, the concepts are that: Children are “innately creative”, and “innately social beings” who go through stages of development. They possess will, heart, head, spirituality. Their curriculum requires “coordination of socio-emotional, psychomotor, and cognitive responses”. Their “learning is a continuum” refining their senses and broadening their “intellectual, emotional and social functioning”. Deen (2012) says that Dewey “proposes a functional model of humanity as emotional, inquiring, purposive, buried in natural, cultural environments” (Publisher introduction).

Collectively, these ideas suggest a concept of ‘whole child’ for 21st century educational practice. The Center for Inspired Teaching (2010) comments that although ‘educating the whole child’ is a phrase that has been “in and out of style for 100 years”, at “the core of the ‘whole child’ (sic) concept is the understanding

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[123] Cohen, M. (2013) attributes to Dewey an emphasis on meeting the needs of the whole child - physical, social, emotional, and intellectual.

[124] The NCCA Framework (2007) provides a Table of scholars and concepts influencing educational practice in early childhood (Froebel, Dewey, Montessori, Vygotsky, Piaget, Bruner, and others).The only use of ‘whole child’ is made with respect to Steiner, particularly his emphasis on spiritual development (p.30), but this is an editorial use.

that children grow physically, emotionally, and intellectually; therefore the school should attend to all these areas of growth" (paras. 1,2).[125]

Concepts of child and 'whole child' in early childhood education – North America, Ireland, England

DuCharme (1995) reviews changes in the concept of child during the period 1890-1940 in the USA, and how those changes affected early childhood education which is "rooted in the study of the changing concept of child" (p.3). Her examination of the literature provided by the Kindergarten Department of the National Education Association in the United States showed the construct of "whole" (sic) child had varied in emphasis (p.3). She found six dimensions of the whole child identified over the 50 year period: Spiritual, aesthetic, physical, mental, social and emotional dimensions (p.3). Children were also described as malleable, developing naturally, social, spontaneous and free, deviant and abnormal (p.3).[126] It is noteworthy however that while Du Charme writes in terms of "whole child" (sic) concepts, she does not cite nor quote the usage of 'whole child' in any of the documents.

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[125] Terminology such as 'student-centred', 'child-centred', 'whole child' education, acquires specific interpretation in academic writing and school practice and is replaced by fresh concepts. The position of the thesis is that terms may change but a focus on children and their learning in a 'whole' sense is timeless. Du Charme (1995, p.4) cites an observation from Dewey (1897, pp.585-6) on this point. The "child-study movement" in name is recent, but "its underlying reality" is that it is a culmination of long term "educational and social forces" and is now a "factor (to) be permanently reckoned with".

[126] Du Charme (1995) notes that "popular theories influenced the lens from which the child was viewed" (p.4). The language of the six dimensions she identifies in the historic research is consistent with that of UNESCO (1972), and the approach of this Chapter.

By the 1920's Du Charme (1995) says there was recognition that the kindergarten child was an "integrated person" with individual potential and needs to be met (pp.16-17). Innate qualities included curiosity, initiative, pugnacity, sense of justice, love of self (p.16). She quotes Smith (1935, p.385): The purpose of education was to "make those growths which will contribute most in developing (children) into rich, balanced, well-rounded personalities capable of living worthily, cooperatively, productively, creatively, and happily in the society of which they will be a part" (p.17). Du Charme (1995) also quotes Bell (1936, p.269) who (like Marshak, 1997, p.10) asserts categorically "that the child develops as a total organismic entity" (p.18). She says Bell avers that all aspects of a child's growth - physical, mental-intellectual, emotional, social - must be considered (p.18). Moreover "the interrelationships of one to the others must be seen and appreciated" because "each conditions the other" (p.18).

Between the 1950s and 1990s, again initially in the United States, and again associated with early childhood education practice, an approach to educating the whole child, known as "developmentally appropriate practice" (DAP) became widely accepted in the western world (Walker and Bass 2011, p.7) and influenced many Australian educators, Walker among them. DeVries, Zan, and Hildebrand (2002, Chapter 1) see DAP as denoting a divergent range of practices, rather than a single modality. For Walker (2011, p.5, citing Copple & Bredekamp, 2009) "DAP is a perspective within early childhood education whereby a teacher … nurtures a child's social, emotional, physical and cognitive development" by basing all

practices and decisions on three factors: Theories of child development, individually identified strengths and needs, and the child's cultural background". [127]

Kostelnik, Soderman and Whiren (2007), like Copple and Bredekamp (2006, p.3) identify three guiding sets of ideas for DAP, but present them a little differently – albeit compatibly. Child development proceeds at varying rates within and among children, with various facets dominant at different times (pp.33-34). Child development, despite these variations, tends to occur in an orderly sequence in developmental domains: Language, graphic and symbolic representation, problem-solving, physical development, logical-mathematical understanding, moral, social, and emotional development (p.33). DAP focuses on "the whole child" and his/her development in six "domains" – aesthetic, affective, cognitive, linguistic, physical, social – and this focus applies to every task in which each child and all children is/are involved (p.32). Children use their whole bodies and senses to learn (p.34). A whole child teaching approach to curriculum and child development is conceived in terms of the six developmental domains (p.216).[128]

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[127] Copple and Bredekamp (2006) identify three main ideas (p.3). DAP means teaching young children in ways that meet children where they are, as individuals and as a group; helping each child reach challenging and achievable goals that contribute to his/her ongoing development and learning; understanding how children learn and develop.

[128] The authors observe that education experts involved with children and adolescents from 0-20 years are urging that "the whole child" is kept in mind when designing education environments (p.32). They cite Eisner (2005); Hendrick & Weissman (2006).

Hendrick has contributed to 'whole child' development and holistic early childhood education in the USA since 1980.[129] Hendrick and Weissman (2006) conceive a child as comprising five selves: Physical, emotional, social, creative, cognitive with physical and emotional health fundamental to a child's well-being (p.v). Hendrick (1980) focuses on "total learning for the whole child" in accordance with these five selves or domains. She says the purpose of education is to foster competence in dealing with life, to develop competency in young children in all aspects of self – living with others, feelings, loving life (p.3). A school curriculum to do this involves creativity, health, physical, social and cognitive development, woven into a "consistent whole" (p.3). Hendrick asks some critical questions pertinent to the thesis: What is competence and how is it acquired (pp.4-9)? How do children develop a sense of self (p.111), restrain unsocial impulses (p.91) and learn their place in the world (p.120)?

Gordon and Williams-Browne (1996, pp.84-5) also in the USA, see the concept of the whole child as based on the accepted *principle* [Italics added] that all areas of growth and development are interrelated. They cite Allen and Marotz (1994). They offer tangible examples such as hearing and speech, friends and unhappiness affecting physical play and motivation and performance in mathematics. They wish to consolidate in each unique child the four different developmental areas they identify: Physical-motor, language, intellectual, social-emotional. The four areas cannot be separated. Their circular linkage in children's growth and development is

[129] Hendrick has also contributed to Reggio Emilia education (1997, 2004).

“a primary concept”. The authors also observe that a whole child approach is also a medical perspective - of child “wellness”. It is important to maintain a child’s body in health rather than illness.

Diamond (2010), in Canada, explores the evidence base for improving school outcomes by addressing the whole child – cognitive, physical, emotional and social (p.781). Diamond brings a neuroscientific, psychiatric perspective. She asserts that the best academic, physical health and emotional wellness outcomes from schooling must address each of children’s social, emotional, physical and cognitive development (p.780). These are fundamentally interrelated parts of the human being (p789).[130] School programs that address each “whole child”, that is address each of these elements, are the most successful at improving any single aspect (p.781). Social, emotional and physical health are essential to cognitive health, including the development of “executive function” (pp.781-2). She situates her argument in the various goals of schooling (p.780). The goal of child development, of schooling is for children to grow up to be *good human beings* [Italics added] (pp.788-9). To do this, she says, they need to experience and practise social emotional modelling and behaviour (p.789).

[130] Diamond (2010) also claims that human beings are fundamentally interrelated to each other (p.789). This concept will be pursued in Chapter Six.

In Ireland, Daly (2004) presents the importance of emotional, social, moral, and spiritual development in developing whole children.[131] Bruce (2011) in England, reviews early childhood education, and as above, pays particular attention to the ideas of Froebel, Montessori and Steiner. She sees their work as based on ten principles, the second of which is that children are "whole people" (p.19, p.42) and their development is hugely important (p.19). She sums Froebel's position that a whole child comprises these elements: Physical (senses), spiritual (and moral, which pervades everything), feeling (including forms of beauty), and intellectual (forms of knowledge). Daly says that for Froebel, the unity of learning is central. He used shapes, songs, play to give meaning to a child's relationship with self, others, the universe (p.19).

Australian references to whole child education and learning

Statements declaring an educational aim in terms of whole child, are provided in Australia by Walker pedagogy, the purpose of individual schools, a Catholic Education Commission, the NSW state government, but few scholars. The research has not identified a history of discussion of the terminology and concept.[132]

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[131] Daly (2004) situates "the structural base" of her argument in Maslow's Hierarchy of Needs Theory. (Mellen Press introductory statement).

[132] For example, Bonnay (2017), reviewing the history of ECE in scholarly thought from the 1500's, does not use the term 'whole'.

Walker Learning (WL), a pedagogy of whole child education in a whole school environment (referred to above at Section 3.2.5), is being practised in over 200 Australian and international primary schools. The “whole child” notion to which WL refers, attempts to capture a total acknowledgment of the child as “developing and maturing in, the biological and genetic influences of being human as influenced by family, culture and environment” (Walker, 2013).[133] Walker says this occurs through the planning, the teaching, the relationship with teachers and the learning environment as well as through the actual curriculum. These contexts all impact and are part of the totality of the whole child.

The “whole child”, for Walker (2013), is the sum of what makes a total human being, biological and cultural. WL therefore, in order to address the needs of and embrace the whole child, believes that the school teaching and learning process must embrace a certain way of teaching - a specific approach to pedagogy. A holistic (whole child) approach to child development seeks simultaneously to address the physical, emotional, relational, intellectual, and spiritual aspects of a child’s life. The approach should be a whole school and community approach (Walker, 2012, pp.11-12).

A Learning and Teaching Framework for the Archdiocese of Melbourne (2009, p.3) affirms that “The vision for Catholic education … is to ensure that students who attend Catholic schools … integrate their faith and life through the development of

[133] Walker, K. (July 2013) in a personal email and attached statement to the researcher.

the whole person (spiritually, intellectually, morally, physically, socially and emotionally)". A Report from the NSW Government Department of Education (Bruniges, 2015) sets its concept of whole child in a framework of wellbeing. "We recognize that the school experience is not *just* (sic) about academic achievement but about the wellbeing of the whole child "(p.6). "Wellbeing is an indicator of the quality of the person's life – how we feel and function in the cognitive, emotional, social, physical and spiritual domains" (p.7).

The focus of Penola Primary School, in South Australia (referred to at Section 3.2.5) "is to develop the whole child" (Our Mission). The Cathedral School, Townsville (2020) states that the school's intent to educate for life-long success requires a well-rounded education – to develop the "whole person" by nurturing the body, spirit and mind (Welcome). (This language is closer to that of Chapter Two and will be referred to at Section 4.3 below.) The school wishes to assist "each child to reach their full potential – academically, physically, culturally, socially and spiritually" (Our Vision).

There are statements of education authorities conceived in terms similar to 'whole child', which do not use 'whole' or 'holistic' terminology. Australia's schooling goals present a holistic vision of "intellectual, physical, social, emotional, moral, spiritual and aesthetic development and wellbeing", but do not say so (Buchanan & Chapman 2011, p.3, p.17, citing The Melbourne Declaration on Educational Goals for Young Australians, 2008, pp.04-05). (Section 1.3.1) Examples of Australian school statements not using holistic terminology, but conceived in terms of child

development are such as: A philosophy reflecting “a developmental, child centred approach … anchored in the personal interests of the child” (Stockdale Road PS, 2019), “a ‘child centered’ (sic) approach to learning” that “seeks to meet the emotional, social and educational requirements” of students and “nurtures the natural desire of students to learn and evolve” (Blackall Range Independent School, 2020), and an association with nature, the environment and community with programs designed to provide for “children’s social, emotional, physical and cognitive development” (Ngaanyatjarra Lands School, 2020).

Beare (2001, p. 4, p.105) writing about “the future school” (Book title), warned that schooling may move towards more tightly targeted and efficient learning, and away from universal education and whole child development. Nonetheless, he says that schooling is also the means of each individual student cultivating his or her “best self”. Such personal formation includes an individual’s self-image, system of beliefs, codes of behaviour, social relationships, and physical, intellectual, emotional and spiritual well-being.

Further comments on dimensions or domains constituting ‘wholeness’ and the spirituality of children

The discussion to this point has demonstrated that diverse writings use language similar to UNESCO’s (1972), in attributing physical, intellectual, emotional and moral ‘dimensions’ or ‘domains’ to concepts of ‘whole child’. There is not unanimity, but a high degree of consistency in the language used. The most frequent additional domains accorded to ‘whole child’ by scholars and professional

documents are aesthetic/creative, social and spiritual. The discussion below at 4.1.1 takes up a concept of 'whole child' inclusive of all these domains.

The thesis has already referred to the linkage of social and emotional learning and competence in the discussion of child and human learning at Section 3.2.3, even though the terms 'social' and 'emotional' each refer to differentiated concepts. Creative and aesthetic capacities were discussed at Section 2.3.2 and will be referred to again in Chapter Five. These terms are consistent with UNESCO's overall paradigm. The spiritual dimension of children is not included in the UNESCO discussion, but has been introduced in the thesis discussion.

The term 'spiritual' has been used in this Chapter by the Archdiocese of Melbourne (2009), Beare (2001), Bruce (2011), Daly (2004), du Charme (1995), NCCA (2009), the NSW Government (2015), Walker (2013), and particular schools. It was introduced in Chapter One with respect to the aims of education, and in Chapter Two in the discussion of self, human intelligences,[134] human capacities, and innate human disposition. A spiritual dimension is ascribed to children by both secular and religious authorities, but not by all.[135] It is included in the model at Figure 5.

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[134] The discussion noted Gardner's professed uncertainty with the concept of a spiritual intelligence (1993a, pxxii; 1999a, pp. 47-64; 2006, p.90). Gardner suggested perhaps spiritual, existential or natural intelligence might be considered. Gardner saw morality as separate from intelligence (1999a, p.4, p.68). Refer also to Armstrong (2000, p.vii).

[135] Hay (2006) with Nye refers to research demonstrating "that spirituality is massively present in the lives of children" (p.9). The difficulties affecting spiritual education are the

Wilson (2008) believes that celebrating the spirit of each child is part of developing the whole child. She says that while spirituality and education are seldom linked in discussions about the role of schools in society, the failure to include it disservices children. If the focus of education is on the development of the whole child, spirituality must be addressed. Childhood is a special spiritual period. She cites Dillon (2000). Wilson asserts there is a spiritual dimension to being human. Our spirit yearns for wholeness and meaning. She cites Purpel, 2000, p.46).

Others to assume and argue for spiritual development and health in educating the (a) whole child include Erricker, Erricker, Ota, Sullivan and Fletcher (1997), Kochar-Bryant and Heishman (2010), Petrzela (2013), the Lynch School of Education (n.d. 2020). J. Miller (2010, pp.3-4), quotes and cites Gandhi (1980, p.138). The thesis will further consider the spiritual domain of human being in Chapters Five and Six. A spiritual, existential, naturalist human domain will be presented both as an ideological and ontological concept. It is included here with other domains in the models below as having professional and theoretical substance.

4.1.1 Towards possible models of whole child, conceived psychologically

Differences and commonalities of language and approach

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lack of agreement on what spirituality is, and limited information on the spiritual life of children. The authors discuss “What is Spirituality?” (Chapter One).

Differences and/or commonalities of language neither invalidate nor validate a concept. They subtract or add weight to its currency and acceptance in epistemic discourse. The thesis is arguing at least for recognition of the resonance of so many voices from diverse perspectives of educational thought and practice who describe children, learning and development, the universe itself, in 'whole' terms. At best, it seeks recognition of the concept of 'wholeness' and of the attributed human capacities and domains requiring integration to make up that 'wholeness' - as a 'principle'.

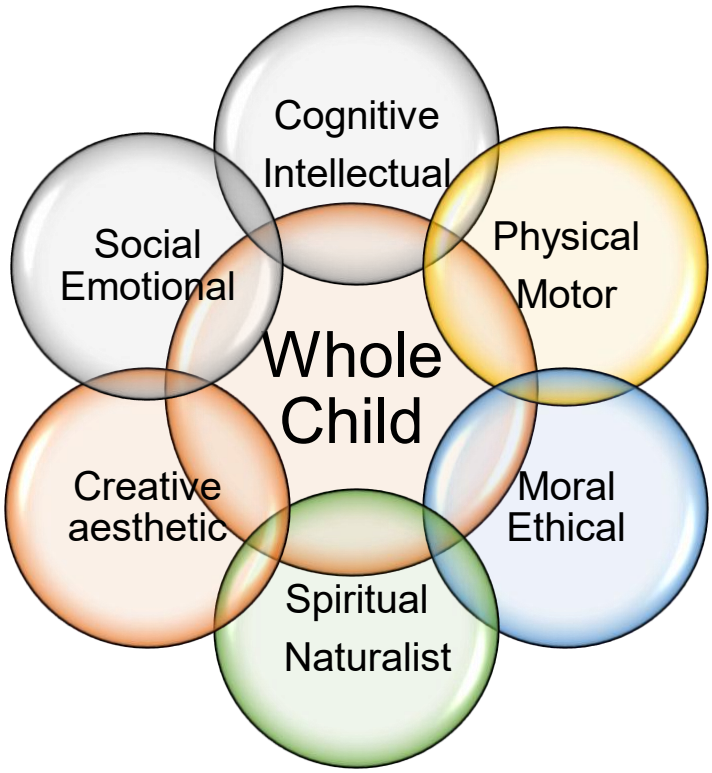
The varied paradigms found above in the landscape of 'whole child' are conceived psychologically. As observed above, they differ in the language they use to describe what constitutes a whole child (capacities, abilities, dimensions, domains or needs). They differ in the number of and what these constituent domains are, in emphasis on their essential interconnection, and what this means. Most sources agree there are at least five of these domains – cognitive/intellectual, physical/motor, social and emotional, and moral/ethical; that they are somehow interlinked, that the development of each and all of them is equally important – if only for academic progress. As observed above, other sources add aesthetic, creative-imaginative abilities. Others attribute spiritual and nature-empathic domains for essential development. The thesis includes all of these domains in the concept and model of personal 'wholeness' it advocates.

A psychological model (1)

A descriptive model of 'whole child', representing all these ascribed

dimensions or domains is offered at Figure 5. Again it should be emphasised that it is one idea to say that recognising and educating all these domains is education of the 'whole child', and another idea to say these domains are neuro-physiologically interconnected and are being or need to be educated holistically at any given moment. (Chapter Five pursues this concept.) The focus here, while noting their interconnection in preparation for what is to follow, is/has been to try first to articulate the domains of a child that need to be taken into account when conceiving their development in 'whole' terms.

Figure 5 A psychological dimensions, domains model[136]

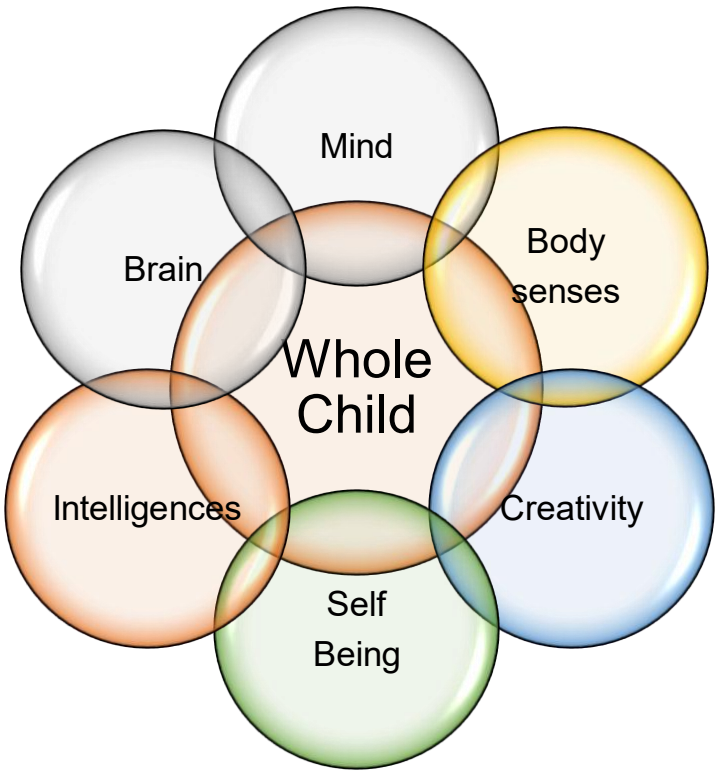


[136] This style of 'interconnected' model will be used throughout Chapters Four to Six.

A psychological and physiological capacities model (2)

In Chapter Two however, the dominant concepts of human nature attributed to children use different language. Children and human beings are conceived as having minds, bodies, brains, senses, intelligences, creativity, a sense of self, capacities – all contributing to human 'being'. This language is not commonly used, at least collectively, as represented below, in discussions of whole child or a holistic approach to child development, but individual concepts (mind, body, self) are. This occurs in some representations of Steiner education. A model of whole child conceived in this terminology is represented at Figure 6.

Figure 6 A psychological, physiological capacities model



Both these models need to allow for individual differences and differentiation, and do not address the conceptual nor functional relationship of nature and nurture, which is addressed by a contextual concept of whole child.

4.2 Whole child in context: The concept and the ASCD model

Faure (in UNESCO, 1972) observed with regret that the Commission's field of study had been unable to "bring in the whole range of family, vocational and urban relationships", including professional and spiritual communities (p.xxxviii). He was nonetheless certain that all these "functions together make up a whole": They are "inseparable" (pp.xxxviii-xxxix).

That a concept of whole child or whole person, needs to be situated in context, in multiple contexts, is offered by NCCA (2009, p.10, pp.20-21)[137] and by Walker (2011, p.27; 2013) . The assumption here is that a concept of whole child (or complete person) requires both a psychological concept of interrelated human capacities, domains and learning, and a contextual model of biological (health and physiology), and socio-cultural, 'ecological' perspectives. The OECD has paid particular attention to these contextual perspectives in its discussions of rights and well-being (Framework of Social Indicators, 2016c) (cited by Lee, 2009), and

[137] The NCCA Framework (2009) is premised on the RE understanding of the child as rich, strong, powerful (p.9). It sees Steiner in particular as exemplifying the "whole child" approach (p.21). It offers criticisms of DAP as focusing on normative developmental stages, stressing individuality and self-assertion, and allowing insufficiently for dynamic contextual development (pp.20-21).

reports on Early Childhood Education (OECD, 2017; OECD, 2020; Wall, Litjens & Taguma, 2015).

Kochhar-Bryant and Heishman (2010) (like the NCCA and Walker above) add the element of a child's context in their response to the question: What does it mean to educate the whole child in contemporary terms? They appeal for a collaborative approach by all stakeholders, families, teachers, communities, environments. Their concept of 'whole child' education has two emphases: The continuing original historic emphasis discussed above, that "educating the (a) 'whole child' means attending to each child's "cognitive, social-emotional, physical, and ethical development" such that teaching and learning "embrace all dimensions of student development" (Preface), and a new emphasis on the need for a collaborative approach by local communities to achieve this. This latter emphasis is further pursued in the discussion of the ASCD model below.

A theoretical research perspective is provided by Rappolt-Schlichtmann, Ayoub and Gravel (2009). They acknowledge that "contemporary theories of human development offer appropriate complexity", but assert that "research has mostly failed to address dynamic developmental processes" (p.209). The authors assert that research typically fragments the human organism into "investigatable units" (sic) such as biology, behaviour, culture, modules of mind, "resulting in the loss of the person as an integrated, embodied center of agency", thereby creating a problem for generating usable knowledge for educational practice where "the unit of analysis and application is the whole person" (p.209). They provide a whole

“person-in-context” research perspective (pp.209-10). There is an ecology of human development with multiple relationships (biology, families, peers, schools, neighbourhoods, communities) (p.215). To bring the whole child in focus, it is necessary to study the relations among biology, psychology and context (p.213).

At a World Forum in Korea, Lee (2009) provided a different sense of context – the well-being (health) context of each child. Lee discussed Child Rights and Well-being, saying that a clear consensus on what defines the well-being of the child and how to measure it had yet to be achieved (p.1). Lee said however that there was agreement that “well-being is a multi-dimensional construct, encompassing mental/psychological, material deprivation, physical, social dimensions, as well as subjective feelings about one’s quality of life” (p.1). Child well-being, he said, is about being healthy, being free from abuse and exploitation, secure, having access to basic needs, and growing up in an environment where every child is respected, and generally happy. Lee cites the African Child Policy Forum (2008). Lee concludes that “the full and harmonious development of each child is the ultimate goal” (p.1). He identifies six dimensions for assessing children’s subjective well-being in a way that captures children’s evolving capacity: Material, educational, health and safety (particularly in very young children), relationships, behaviours and risks, and subjective well-being including school and personal dimensions (p.8).

The concept of context emerging is that it is both internal - children's health and well-being (conceived holistically to include emotional, social, mental, and physical health) and external (conceived holistically in multiple social contexts).

4.2.1 The ASCD concept of whole child

The ASCD organisation in the United States, has, since 2007, adopted whole child education "as its core mission" (Slade and Griffith, 2013, p.21). In 2007 ASCD introduced a "whole child compact" to the USA (RIASCD, 2011). Slade and Griffith (2013) explain the ASCD whole child approach and genesis in this way.

> A whole child approach to education is one which focuses attention on the social, emotional, mental, physical as well as cognitive development of students. At its core such an approach views the purpose of schooling as developing future citizens and providing the basis for each child to fulfill their potential (p.21).

Slade and Griffith (2013) describe the ASCD Framework, with five tenets "based on child development theory": "Each child in each school and in each community deserves to be healthy, safe, engaged, supported and challenged" (p.21, p.24). The Framework ensures the "approach is integrated and systematized into the processes and policies of the school, district and community" (p.21). It "aims to refocus attention on all attributes required for educational and societal success" (p.21).

> When communities commit to educating the whole child within the context of whole communities and whole schools, they commit to designing learning

> environments that weave together the threads that connect not only specific content areas such as maths, science, the arts, and humanities, but also psychosocial aspects of the individual and learning (pp.21-2).[138]

Slade and Griffith (2013) affirm that ASCD did not invent the term *whole child education*, (sic) but defined it in these specific terms (p.22). The provocation for the Framework came from Gene Carter, ASCD CEO in 2007, who asked a question similar to one of the prompting questions for this thesis: “If students were truly at the center of the system, what could we achieve” (p.22)?

Slade and Griffith (2013) say that whole child education requires a “paradigm shift” (p23). “The premise of starting with the child” required from 2007 a national redefinition of a successful learner, and of how success is measured (p23). It required reconsideration of the purpose of education (p.24). It required the national educational system, communities and schools to think and act in fundamentally different ways (p.24). These key questions are illustrative.

> What if the education, health, housing, public safety, recreation, and business systems within our communities aligned human and capital resources to provide coordinated service to kids and families? What if policymakers at all levels worked with educators, families, and community

[138] The original ASCD model (to which the research had access) is not now available, but the ‘whole child’ 5 tenet framework may be found at ASCD (2012, 2015).

> members to ensure that we as a society meet our social compact to prepare children for their future rather than our past? (p.23)

The authors cite ASCD (2010, p.vii).

There are three senses here in which the ASCD Whole Child Initiative and Framework for USA and potentially global education is situated in *context* (Thesis emphasis). The first is the prevailing education and societal context which Slade and Griffith (2013) portray as focusing (narrowly and anachronistically, pp.22-23) on standards and testing rather than critical thinking, innovation and creativity (p.24, p.29). A whole child focus with development of these skills and aptitudes is "not only a moral imperative, but also an economic imperative" (p.25). The authors cite OECD (2008). The second is the concept and strategy of involving broad school and community structures in planning and achieving educational success for all students. The third is the awareness that the physical context, the health (broadly conceived) of each child, is critical to achieving educational success. Health is an integral "part of a positive school climate in which learning can thrive" (p.28). "A focus on health – social, emotional, mental" and physical is integral to "establishing an environment that not only allows students to learn and grow" but "promotes the holistic growth and development of the person" (p.29).

The ASCD Whole Child Framework has evolved since 2012 to address school,

community and health contexts, particularly. The ASCD position is that a whole child approach means a whole school[139] and whole community approach. The original five Whole Child tenets (ASCD, 2012) were cross-referenced with the key components of an “effective school improvement process” (Slade & Griffith, 2013, pp.27-28). The current ASCD whole child model (2020), shown at Figure 7, is the “WSCC model” of whole school, whole community, whole child. ASCD has partnered with the USA Centers for Disease Control and Prevention (CDC) in a “collaborative approach to learning and health” (CDC, 2015).

The model for the collaboration combines eight elements of CDC’s widely used coordinated school health approach, first introduced in 1987, with the five tenets of ASCD whole child education. ASCD (2018) called on

> [P]olicymakers to offer healthy, nutritious meals to all students; to foster greater alignment, integration, and collaboration between education and the health sector to improve each child’s cognitive, physical, social, and emotional development; and to promote the components of a coordinated school health model so that all students are healthy, safe, engaged, supported and challenged (p.2).

[139] Discussion of a ‘whole school’ approach *per se* has not been included here. It is also advocated by Walker (2011, pp. 34-5) and Walker and Bass (2011, pp. 9-10).

Figure 7 The WSCC collaborative ASCD CDC model [140]

With respect to the first context above, the prevailing education and societal context, and the need for reconsideration of the purpose of school education in whole child terms, Slade and Griffith (2013) make one further point, directly pertinent to the central argument of the thesis. Chapter One observed the global

[140] The model is used with written permission from ASCD (Slade, S. 2017).

dichotomy in the aims and purposes for school education between education for human development conceived in socioeconomic and standardised testing terms, and human development conceived in humanist, moral, ideological, ontological terms. Slade and Griffith (2013) are persuaded that whole child education addresses both aims (p.25). The authors affirm they are not exclusive nor alternative. If anything, they are complementary.

Rasberry, Slade, Lohrmann and Valois (2015) discuss the historical background to and the “lessons learned from the implementation and evaluation” of a “coordinated school health (CSH) and a whole child approach to education”, provided by the WSCC model (Abstract). The authors conclude from an extensive literature review that the joint approach can improve both health and academic outcomes, when particular structures and processes are implemented. One key challenge is to conceptualize health and well-being as a core component of an effective school and develop infrastructure accordingly. Another is to involve communities. The authors declare: “A whole child approach to education” (in ASCD terms) recognises that “Children do not develop and learn in isolation, but rather grow physically, socially, emotionally, ethically, expressively and intellectually within networks of families, schools, neighbourhoods, communities and our larger society” (Lessons learned). (The authors quote ASCD, 2007, p.11).

4.2.2 ASCD whole child collaborating theorists and professional initiatives

This Section is provided to demonstrate the extent of initiatives being taken within the USA and internationally, which follow the ASCD whole child in contexts model,

and the consistency of the language used. It demonstrates the thesis position. It is an integrative concept – theoretically and practically.

Scholars and educators

Early in the ASCD whole child journey, Noddings (2005) also addressed the prevailing educational context in the USA, querying both the aims of education and the meaning of whole child education. Two points Noddings makes are relevant here and to what follows in Chapter Five. Noddings wants to add ”happiness” to any consideration of school aims, both by “helping … students understand the components of happiness” and “by making classrooms genuinely happy places” (p.9). She also observes that “Even when educators recognize that students are whole persons”, they should avoid the tendency to describe the ‘whole’ in terms of collective parts which need individually to be addressed by separate curriculum packets (The Whole Child, para. 2). All teachers of the curriculum, particularly if it is typically broken into fragmented subjects, need to be able to address any of the moral, social, emotional and aesthetic matters that arise (ibid, para. 3).

Eisner (2005) asks where the vision of whole child has gone – “now that it is most needed” (p.14)? He offers the opinion that the current “narrowed vision” for education focusing on test scores and standards has frozen “our conception of what we want to accomplish in schools” (p.14). It limits an “organic or humanistic” orientation to teaching (p.15).

Eisner (2005) sees the term ‘whole child’ as partly metaphorical but with four clear caring implications (pp.16-18). It means recognizing the distinctive talents individual children have and creating an environment to actualize them: Being interested in children becoming who they are. It means recognizing the different ways students respond to teaching plans – cognitively, emotionally, imaginatively, socially. It means school assessment needs to provide a broader view of the developing child to help educators understand how to nourish children. Finally the social and emotional life of each child needs to be as much a priority as academic achievement. Eisner sees the role of the arts as significant in developing the whole child – they help eliminate the distinction between cognition and emotion. “The overall mission of the school” best serves young people when it offers a “holistic orientation to education” (pp.17-18).

Laitch, Lewallen, and McCloskey (2005) also reflect on the contemporary educational backdrop of “high-stakes, punitive accountability” pushing educators “at the expense of the needs of the whole child” (paras. 1, 2). Their response is holistic. “Meeting these needs requires a conscious effort by educators, policymakers, and the general public to create and sustain schools” where not only children but “all members of the school community develop ethically, physically, emotionally, and civically”, and academically (para. 2). Meeting the needs of the whole child means “linking health needs with learning expectations” (para. 1), providing music, arts education, health and physical education, which research suggests “may strengthen academic achievement” (para. 7), and civics and character education to create a “participatory citizenry” (paras. 9,10). However

“although attention to the whole child generally involves these components”, the “concept of holistic education begs a limiting definition” (para. 11). (Chapters Five and Six of the thesis approach this.)

Hargreaves and Sahlberg (2013) are cited in Slade and Griffith (2013, p.24). Sahlberg is the “world’s leading expert” on the “educational and economic success of Finland” (para. 4). Hargreaves and Sahlberg (2013) see the contemporary educational context changing. They cite Hargreaves (2009) declaring “we are entering an age of post-standardization in education” (para. 1). Hargreaves calls it “the fourth way”, where an interactive partnership is developed between “the people, the profession and their government” (para. 1). Hargreaves and Sahlberg say “educational systems across the globe are under pressure to change” (para. 2). One aspect of this is the reversion of authority “from centralized bureaucracies to educators and communities” and the diversification of skills and content to suit each community and context” (para. 2). They cite Sahlberg (2010). Schools should “cultivate attitudes, cultures, and skills” “within creative and collaborative learning environments” (para. 4). A “sustainable learning society that also helps us all to understand how to retain our planet’s ecosystem” is best promoted by developing safe and caring schools (para. 4).

Hargreaves and Sahlberg (2013) refer to ASCD’s ‘Whole Child Initiative’ and ‘Learning Compact” of 2007, referred to by Slade and Griffith (2013, pp.21-2) above. They refer to the original words which, rather than “psychosocial” above, were: “[M]ind, heart, body, and spirit-connections” which are “fragmented” in the

“current approach” to education (para. 6). They see the initiatives being taken in Singapore, Canada and Finland, to which Chapter One referred, as presenting “a growing and successful emphasis on teaching the whole child” and “empowering teachers and students in their own learning”, even though there are “policymakers in the US and elsewhere” … “blinkered to these truths” (para. 7).

ASCD collaborating field initiatives in the USA and internationally

There are many field examples in the USA, and some internationally, of the ASCD whole child in whole school and whole community approach, of which the following are a selection. They are provided here to indicate the broad acceptance of the ‘whole child in context’ approach described above.

The National Education Association (NEA) (2015) developed a national position on “Meeting the Needs of the Whole Student” (Report title). The Association proposed a new purpose statement for public education. It asserted that American states should develop comprehensive plans for including whole child measures, supporting the ASCD call for a whole child approach to learning. The Association provided materials for Education Support Professionals who have adopted the ASCD Whole Child Vision.

Reference has been made above to the state of Rhode Island ASCD Report (2011). The Report refers to both the ASCD original learner focus, and the subsequent integrative contextual model. It says that In 2007, when “ASCD introduced the ‘whole child’ (sic) compact” to the USA, it was intended to reframe

“the definition of a successful learner from one whose achievement is measured solely by academic tests to one who is knowledgeable, emotionally and physically active, civically inspired, engaged in the arts, prepared for work and economic self-sufficiency (p.3). The learner must be ready for the world beyond schooling (p.3). However “The Whole Child is a broad concept that requires integration of efforts among schools, families and communities” (p.3).

> [The] concept that in order for a child to be educated successfully, he/she must be healthy, safe, supported, challenged, and engaged requires a paradigm shift in the way we think about and organize schools/communities. It requires partnerships to achieve a goal that is beyond the scope of any one organization. It is a comprehensive approach to teaching and learning (p.3).

The New York State Education Department (2011) provided guidelines for social and emotional development and learning. The context was a 2006 plan to integrate education, health and mental health, and incorporate social and emotional learning to do so. The guidance document aimed to provide a rationale to school communities to address students’ affective as well as cognitive development (p.2). The vision was to enable “all children to succeed in school, work, and life” (p.3). The Department envisaged multiple approaches occurring, but thought schools would use some combination of engagement of families and community, after school and out of school programs, and coordinated, aligned school and district support services (p.2). The Guidelines cite the ASCD model and in particular a

comprehensive focus on students' health – intellectual, physical, ethical/moral, emotional and social (p.3).

Bridges Charter School in California (2015, 2018) declares its current mission is to educate the whole child through innovative approaches integrating social emotional education into the school community. Its vision is to create a learning community of parents, teachers, students, where children are enabled to become lifelong learners and compassionate global citizens. Its concept of 'whole child' is the ASCD model. The school draws on constructivist educational theory. The symbol for the school is a tree. The sub heading is "Whole Child, Whole Family, Whole Community" (Home page).

Rex Book Store (2018) is "leading whole child education in the Philippines" (Home page). The organisation partnered with ASCD in 2017, adopting both the ASCD whole child model and the ASCD/CDC WSCC model. It envisions whole child education in the 21st century. The organisation wishes each Filipino learner to "become a whole and joyful person ready to contribute to society" through a "Symphony of Learning Solutions" (Home page). The organisation wishes to promote holistic learner development (Home page, Inquire Solutions).

Andersen (2016) presents initiatives in Mauritius, where the Minister of Education sees a "holistic, whole child approach to education" as the "key to transforming education" in the country (para. 3). Andersen says a whole child approach is a conversation, need and challenge "facing schools throughout the world" (para. 3).

She refers to the ASCD whole child model and its tenets, and to the Acres Green School in Colorado where song, music, dance and drama were providing a whole child experience.

ASCD also partnered with Education International (EI), the world's largest federation of education employees to support the United Nations 2030 Sustainable Development Goals and the Pursuit of Quality Education for All, affirming that "A "Quality Education is one that focuses on the whole child … regardless of gender, race, ethnicity, socioeconomic status, or geographic location" (ASCD and EI, 2016, p.2). Education International's aims include fostering "a concept of education directed toward international understanding", tolerance, good will, peace, freedom and human dignity (2017, Principal Aims).

Monk (ASCD, 2013) reported on an Australian initiative in positive education which has "much in common with a whole child approach" (para. 1). Positive education, to improve children's well-being, and the principles of positive psychology[141] on which it is based "is contributing to the paradigm shift that is accentuating the non-academic variables of children's education for successful student outcomes" (para. 1). It provides "an opportunity for school leaders to respond to "problems

[141] Monk associates positive psychology with Peterson, Czikszentmihalyi and Seligman. He refers to three schools practising a positive education program. He has led the program at two of these.

associated with physical, social, emotional, and mental well-being of both staff and students" (para. 1).

Other independent 'whole child in context' initiatives referring to ASCD

"With the Whole Child in Mind" discusses an initiative commenced in 1968 by a child psychiatrist in two troubled elementary schools in New Haven, Connecticut (Darling-Hammond, Cook-Harvey, Flook, Gardner & Melnick, 2018). Known as the School Development Program (SDP), it supports the social, emotional, cognitive and physical development of children, building "on the science of child development, creating a whole child framework for reform that takes a systems approach towards reorganizing the school" (p.2). The authors say this "foundational approach", has been shown by research to be "critically important for success" in school and life (p.2). They cite Cantor, Osher, Berg, Steyer, & Rose, (2018). They note in particular how new research "demonstrates the tight interrelationship of cognitive and social emotional development (pp.9-10). The outcomes at the two schools have been demonstrated over at least a 30 year period. The program now operates in over 1000 schools in the USA. It was developed "long before most educators began talking about "whole child" (sic) approaches to education" (p.9). The authors explain the ASCD approach (p.9).

The current whole child framework of the SDP program for educators and parents "focuses on six developmental pathways – cognitive, social, psychological, physical, linguistic, ethical – as a foundation for successful learning and healthy development" (Darling-Hammond, Cook-Harvey, Flook, Gardner & Melnick, 2018,

Figure 1.1, pp.4-5). The ethical pathway helps children develop the capacity for acting with justice and fairness, respect and integrity of self (p.6). The authors refer to various commentators of the program. The “lens of the developmental pathways” impacts on all aspects of the school environment and the discourse surrounding teaching and learning” (p.14).

An independent ‘Educate the Whole Child’ organisation was established in Massachusetts with links to ASCD but desiring to differentiate from it. Nye, the founder, gathers and provides a range of resources to illustrate different but consonant approaches to whole child education. Outlining his response to the question: What is Whole Child Education? Nye (2018) wants to change the questions about the purpose of schools from “How do we prepare kids to compete in the 21st century global market place?” to What qualities do we want to encourage in children as they grow? (para. 2). Nye cites Stoddard’s survey of parents (2004), *Educating for Human Greatness*.

“Drawing on the best holistic approaches” and recognizing children’s “multiple intelligences” Nye’s version of ‘The Whole Child Initiative” identifies five kinds of learning each child should desirably experience every day – but not separately and compartmentalised: Cognitive-intellectual activity, creative-intuitive arts activity, structured and unstructured physical movement, useful handwork, and engagement with nature and community. Such learning necessarily involves “the

social and emotional dimension" (Home page, 2018). Nye says "It's time to let the wholeness of the child engage with the wholeness of the world" (ibid.).[142]

4.2.3 Conceptions of 'whole child' in 'holistic' contexts – early childhood

The use of the term 'whole child' in the discussion so far in the Chapter has been associated both with a psychological concept of children's multiple capacities or developmental domains, with children's health and well-being, and with children in multiple social-ecological contexts. Education which focuses on a concept of children conceived in such terms is described as 'whole child' or as 'holistic' education. A conceptual holistic contextual model of whole child development is offered at Figure 8 towards the end of this Section.

This Section explores one final area of research presenting international and Australian concepts of children in terms of both psychological and contextual 'holism'. The research draws on sources referring to the development of children in early childhood (0-8 years) and particularly 0-3 years, that is, prior to common ages for early childhood education and schooling.[143] Sources identify parenting, nutrition, living conditions, language development and connections to the natural

[142] Nye cites current thinkers about holistic learning, which he says goes back at least to Socrates. Holistic learning is discussed in Chapter Five.

[143] A program has recently commenced in Omaha Nebraska, involving children from birth to 3 years. There are home visitors and family facilitators, where schools are a connection point between families and communities (Lurye, 2019).

world as particularly important in the earliest years. Early child development requires a holistic approach.

International

A UNICEF Report (2009) describes “Child friendly schools” (CFS) focusing on the well-being of the “whole child” as a learner, and each child’s “different needs” according to gender, physical ability and socio-economic status, and issues such as water, sanitation, hygiene, and capacity of the local community (Introduction p.5, p.10). The CFS model provides a “holistic framework” (p.3). A previous report, UNICEF (2001), refers to the period of early childhood from 0-8 years, but does not use the terms ‘whole child’ nor ‘holistic approach’. It offers a congruent approach to children’s well-being, learning, and early development in terms of their “cognitive, emotional, social and physical potential” (p.1). It places particular emphasis on nutrition (p.7), brain and psychosocial development (p.2, p.8), and reduction of gender inequity (p.12). A more recent Report (UNICEF and WHO, 2012) considers the specific plight of children under five years affected by famine. Both nutrition and consequent neural and physical development are profoundly affected (p.2). The Report declares that “a holistic approach that guarantees both child survival and development is the child’s right” according to the Convention on the Rights of the Child (CRC) (p.2). “The first three years are the most important in a child’s life” (p.2).

UNESCO (2010) provides a report of a World Conference on Early Childhood Care and Education. The agenda for the Conference provided for a Commission

Session (3.1, p.19) on “Holistic ECEC”, involving health, education, nutrition and child protection. Individual papers offered a holistic emphasis. One session proposed a “conceptual framework of what constitutes holistic ECEC” (p.7). The Latin American and Caribbean Commission highlighted “the importance of multisectoral policies for holistic ECEC” (p.12). The Asian and Pacific Commission inquired into the evidence supporting cross-sectoral collaboration for “holistic ECEC” (p.13). The Country Best Practices session referred to the Moscow policy to provide each child with an “equal start to holistic psychological and physical development”, and a “holistic approach to the organization of preschool development, education”, health and nutrition (p.18). The Mauritius experience of early childhood programmes involves developing and implementing a “holistic approach to parental education (p.18). The Jamaican approach to coordinated service delivery believes the “[h]olistic development of children between 0-3 years requires attention to all aspects of their health and development” (physical health, cognitive and socio-emotional) (p.21).

The Save the Children organisation (2014) provided a position paper to Rwanda. It argues that parents need guidance “to support children’s physical, emotional, social, and cognitive development” (p.1). “Parents are the first educators of their children” and “they need knowledge and skills” to “provide effective care and stimulation” (p.1). “Rwanda needs a holistic parenting education programme (p.1). “Community – based holistic parenting education is an effective way” to reach parents and children, especially those aged 0-3 years (p.1). “Holistic parenting involves attention to at least three major areas of early childhood: physical,

cognitive and social/emotional development" (p.2) (sic). Of these, the cognitive area is the least well understood (p.2). "The process of becoming literate begins very early" (p.2). A First Steps program and randomised control trial (RCT) for expectant parents and parents of 0-3 year olds was developed and conducted in 2015-6 (Pisani, Nzabonimpa, Dusabe, & Abimpaye. n.d. c.2017].

A Literature Review in the UK contributing to a Framework for effective practice with children 0-3 years (David, Goouch, Powell & Abbott, 2003), proposed four themes or aspects from the prodigious research evidence, around which to organise "the complex nature of the growth, development and learning" of young children (p.2, p.11, p.16): Strong child, skilful communicator, competent learner, healthy child. A strong child has a sense of self and belonging. A communicator makes meaning and finds a 'voice'. A learner makes connections and is imaginative and creative. A healthy child enjoys physical, emotional and mental well-being and safety (pp.11-14, Chapters Three to Six). The conception of health is "holistic" (p.114), but all these "areas of learning and development are intricately intertwined" (p.8). Young "children develop and learn holistically" (p.8, p.25, p.30). Their social and emotional development forms "the bedrock of other areas" (p.8).

Greener (2002), from a US organisation providing international "field ministries" asks what ministering "to children from a holistic perspective" means (p.1)? Greener also asks: "What areas of child development need to be addressed in order to alleviate poverty and support child development potential in order to affect global change" (p.1)? Greener identifies four areas of development suggested by

research and theory: Spiritual, physical, socio-emotional, cognitive (p.2). She says the organisation's mission statement does not specifically identify these four areas as the "components of holistic child development" (p.2). She concludes that "Programs that combine interventions to address children's needs holistically" are more effective than programs addressing an "isolated area of development" (p.3), which do not "reflect the holistic nature of the person" (p.4).

Australia

In Australia, Eadie, Tayler and Stark (2017) report on a Victorian Government Department of Education and Training initiative to improve language and communication outcomes for babies and toddlers from birth to three years. The program also sought to improve collaboration between early childhood educators and allied health professionals, particularly speech pathologists (p.9, p.12). "Early communication skills are known to predict later social, emotional, academic and vocational achievement"(p.7). The authors cite Law, Rush, Schoon & Parsons (2009). "A child's language development pathway is determined by multiple factors" – social, environmental, genetic, and biological (p.7). During the first five years of life, it does not develop consistently nor predictably (p.7), making it difficult to identify ongoing problems and for services to provide appropriate interventions.

Eadie, Tayler and Stark (2017) refer to the report of the first phase of the project (2015) saying the service model and aim for the early childhood period is clear. "Language development is a cornerstone of child development, underpinning the development of academic, social and emotional outcomes" (p.7). "The early

engagement of families with universal services" offers opportunities for a range of professionals to work with families "to create positive environments that nurture and maximise" learning, health and development (p.7). Education and care like this supports "children's developing sense of identity, community, wellbeing, their dispositions to learning, and their language and communication skills" (p.7). The key feature of this approach is that it is "holistic and multidisciplinary" in attempting to meet "children's learning and development capabilities and needs" (p.8).

The Bass-Walker Systems Model (Bass & Walker, 2015) offers a similar approach in related terms. It "presents a whole child and family approach to education whereby the community, relationships and culture are all interconnected" (p.7). "The whole child concept includes the child as capable and an active participant in their learning alongside the adult and extended community" (p.6).

An Australian news article (Higgins, 2012) sums the story of holistic approaches for early childhood educators saying that "a growing body of world research" is "emphasizing the importance of holistic approaches" and early childhood educators are being challenged to focus more "on the complete physical, emotional and psychological wellbeing of a child" (para. 1, citing UNESCO, 2002).[144] The article quotes the Australian Early Years Learning Framework (EYLF, 2009): "Holistic

[144] An historical overview of early childhood education for Early Childhood Australia (Bonnay, 2017), refers to Comenius, Froebel, Dewey, Montessori, Steiner, Reggio Emilia, but does not use the terms 'whole child', nor 'holistic'.

approaches to teaching and learning recognise the connectedness of mind, body, and spirit" (para. 2). They recognise the reciprocal connections between children, families and communities, and connections to the natural world, such that children understand and respect "interdependence between people, plants, animals and the land" (para. 2).

Higgins (2012) says a holistic approach means paying attention to "children's physical, personal, social, emotional and spiritual wellbeing" and cognition (para. 2). Educators see "learning as integrated and interconnected" (para. 2). A holistic approach for an early childhood educator means taking responsibility for the development of a "whole child" (sic), "guiding students to find identity, meaning, and purpose in life through connections to the community, to the natural world and to spiritual values" (para. 7).

Conclusion to Section 4.2

Once again, there is considerable commonality of the language used to represent the domains of human nature and the contexts of schooling and early childhood education, but it is not universal. The most frequently used terms to represent human nature are those similar to Faure and the UNESCO Commission (1972), but some statements are conceived in terms of capacities.

Two possible models are offered below, representing diagrammatically -

1) A holistic approach to 'whole child' well-being and development conceived in terms of linked, overlapping contexts of influence

2) A concept of ‘whole child’ that integrates psychological and contextual perspectives, where psychological perspectives are conceived in terms of both capacities and domains

A contextual holistic model

A model focusing on the child in context(s), commencing with the child’s own internal physiological context, conceived in terms of well-being or health, and situated in multiple real and virtual communities might look like Figure 8.

A holistic concept of early childhood education particularly takes some or all of these contexts into account, and seeks their interconnection. Such a concept could be extended to the whole of schooling.

An integrated psychological and contextual model

A single common concept of whole child and a holistic approach cannot, however, be derived from the arguments above, although there is much agreement in the language and approaches advocated. A composite working model for further exploration is offered at Figure 9. The perspective of the thesis is that a holistic approach to children’s development and education takes into account both a child’s inner and outer ‘worlds’ – a child’s psychological, physiological, sociological and ecological environments.

Figure 8 A contextual holistic model of whole child

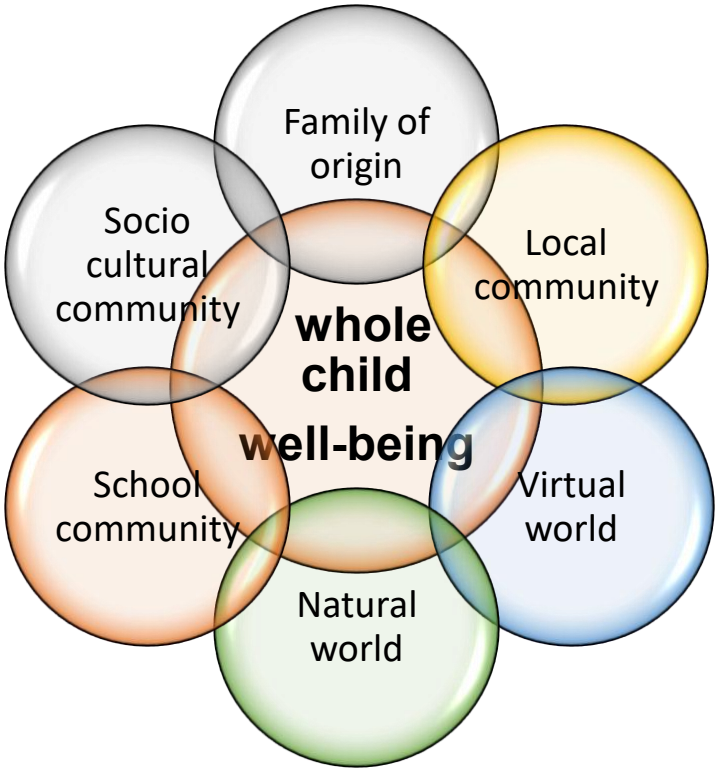
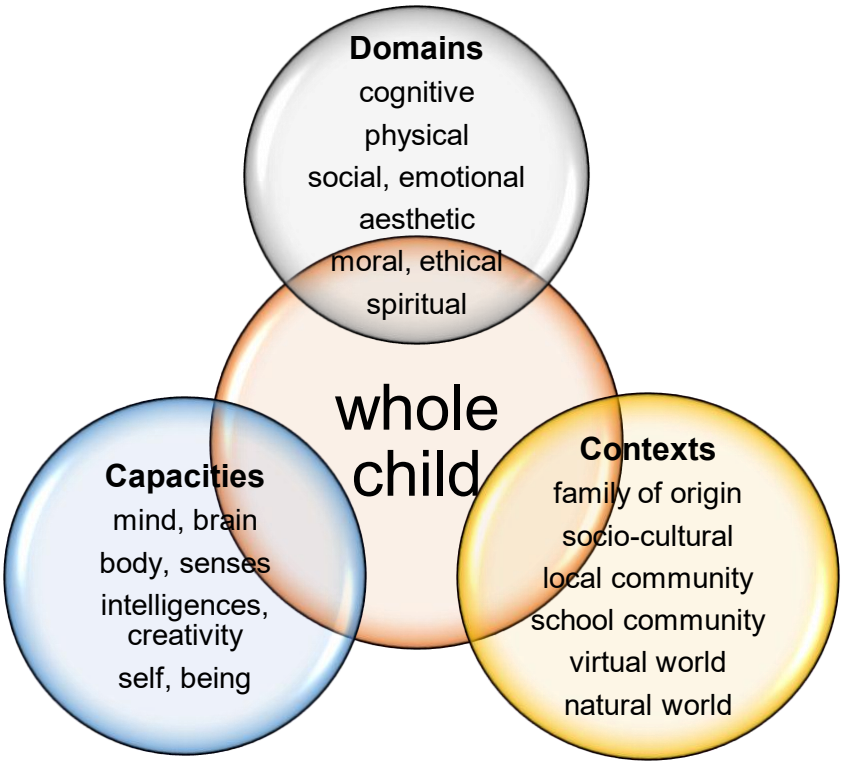


Figure 9 An integrated psychological and contextual model



The model at Figure 9 allows for the concept of domains of human nature and learning similar to those of UNESCO (1972), and for the capacities of human nature discussed in Chapter Two. Both these approaches were represented in the thesis models of ‘whole child’ at Figures 5 and 6.

The thesis’ preferred concept of ‘whole child’ is in terms of domains and contexts, consistent with UNESCO (1972). However, as observed in Chapter Two and above at Section 4.1, the terminology of domains is not universal among educators and scholars. The thesis is therefore allowing for the inclusion of ‘capacities’ because of the relative dominance of the concepts explored in Chapter Two. The concept of ‘holism’ – of ‘whole child’ - as a principle, nonetheless precedes concepts of both domains and capacities.

The use of the term ‘principle’ is deliberate. A whole child or holistic approach to child development and human learning and the three part conceptual paradigm being developed in the second half of the thesis is offered as a fundamental idea or general rule – a principle - as a basis for a theory and system of belief (Oxford Dictionaries, 2018). There may be some variation in the conceptual models of ‘wholeness’, of child or human ‘completeness’, but not in the principle of wholeness and adopting a holistic approach to human development.

4.3 A whole child and a holistic approach, in principle, to early childhood education and schooling: The first construct of a holistic paradigm of educating for humanity

4.3.1 Complete man, whole child, integration, a holistic approach

The Chapter has explored a holistic approach to two linked aspects of the concept of Faure and UNESCO (1972) for the ultimate aim of education: Human completeness and the integration of dimensions of human personality: Physical, intellectual, emotional, and ethical.

The discussion has demonstrated there is widespread epistemic agreement with respect to including physical, intellectual, emotional and ethical domains in a concept of human 'completeness' or 'wholeness'. In addition, most sources include social, aesthetic, and spiritual domains. The terms 'whole' and 'holistic' commonly assume all these domains of human nature and learning are present in each child. A concept of 'whole child' in these terms has been provided at Figure 5. There is some reference to the need for the integration of domains (Archdiocese of Melbourne (2009); Du Charme, 1995; Lanning, 1960; Rappolt-Schlichtmann, Ayoub and Gravel, 2009).

A need for 'integration' has been urged by contextual, holistic approaches to educating children. The services, policies and processes of education and health authorities, need to be integrated to support children and their families. Schools, families and communities need to be integrated around the development and

welfare of children (ASCD, 2018; Bridges Charter School, 2018; RIASCD, 2011; NYS, 2011; Slade & Griffith, 2013; UNESCO, 2010). Higgins (2012), additionally, wants to see learning in schools become integrated and interconnected.

The position of the thesis is that a 'whole' (both holistic and integrated) approach to the development of children, such as that explained above in Sections 4.1 and 4.2, is the requisite approach for early childhood and schooling theory and practice throughout the 21st century. It is not merely another competing ideology. It is a matter of fundamental principle. It is the contention of the thesis that conceptions of the practice of schooling and early childhood education generally, not only those of international pedagogies and individual authorities, should adopt a holistic approach, in principle, even if educators have still a lot to agree upon conceptually, and to discover practically, about the implications.

The reasons to this point of the thesis for this position are these:

- The language of 'whole' and 'holistic' is both historic and contemporary, used and urged by diverse theoretical, research and professional voices to present concepts of capacities or domains of children's human nature, development and learning, and the interaction of all these capacities or domains with their contexts of development (psychological, physiological, sociological, ecological). Many of these voices urge the primacy and necessity of a holistic approach.
- A 'whole', 'holistic' approach recognises the principle and practical implications of the 'interconnectedness' of the attributes of human nature,

whether conceived in terms of ‘capacities’ (mind, brain, body, soul, self), or ‘domains’ (cognitive, social, emotional, physical, aesthetic, ethical, spiritual). Human capacities and domains are interconnected in the way they function - within a human being, in relation to external contexts of people and nature, and with respect to the development of individual well-being. Human capacities and domains operate holistically not only in early childhood, but throughout human life. Any teaching and learning curriculum needs to reflect this principle, however the educative practice based on it is then conceived.

- A whole, holistic approach is not only a way to conceive a child in context(s), it is the way, supported by research evidence, to conceive the way the human brain and body functions, to conceive how human learning occurs, and to conceive human health and well-being. A child’s psychological and physiological health needs to be conceived holistically (mind, body, relationships, resilience).

Adopting a ‘whole child’ or holistic’ approach to development and learning means more than holding a utilitarian belief that a child needs to feel happy or be well to learn effectively, and that recognising this will improve literacy and numeracy outcomes. The research evidence is that it does and will. Recognition of this fact and relationship is powerful in improving learning environments for both students and teachers. However, adopting a whole child or holistic approach means more than this. It means accepting the principle of neurophysiological connection of child (human) mind and body, of cognition and emotion, of cognition and social

relationships, of the connection of school performance with family of origin nutrition and relationships, and with a family's situation in local community.

Although the implications are yet to be articulated comprehensively, a whole child or holistic approach to the education and development of children means, in the terms of the thesis, educators (teachers and parents) presuming at least that there are multiple domains (capacities, potentials) of each individual differentiated child, that they are all important, and that they are interconnected in ways educators have yet more fully to discover. Moreover, that to educate each child holistically, is to take into account each child's psychological profile and all of their contexts of well-being. Where relevant, it is essential to try to integrate any and all services (health, including mental health, safety, welfare) with each child's early childhood education and schooling.

Educators who wish to retain the priority of a focus on human development in terms of literacy, numeracy, standardised testing and socio-economic development, are urged to consider by the weight of argument that these approaches are incompletely conceived - theoretically and practically. Moreover, educators are asked to consider that a focus on human development in terms of literacy, numeracy and equity is more practicable and theoretically authentic only if it is based on a preconception of a whole child and a holistic approach to early childhood and school education. At the very least, as Chapters Two and Three demonstrated, the interdependence of the human brain and body, and of cognitive function and academic progress with social-emotional well-being is now well

established. The weight of evidence from neuroscience and clinical research, from widespread professional voices of individual governments and schools, from ASCD collaborative initiatives, requires educators to accept linkage and interconnection of brain and body, of mind and feeling, before pursuing any academic objectives.

Even so, a holistic principle may be interpreted and held in one or both of two ways. It may be held only as a way of conceiving the nature of children, the way they learn, and that they are situated and influenced contextually. Such a principle can be advocated and adopted, whether ideologically and/or on the basis of neurophysiological and socio-ecological evolving evidence. It can also allow for ideological extension to the concept that 'whole children', viewed and educated 'holistically', can/should develop a moral sense of responsibility toward their community, environment, even the condition of human society and the physical world. However, this concept of a holistic principle does not necessarily also embrace the concept that the 'holistic principle' refers even more profoundly to the ontology of the universe, and is an existential principle. Both the ideological and ontological senses of a holistic principle', of 'whole child for a whole world', will be pursued in Chapter Six.

4.3.2 Educating holistically for humanity

A holistic approach, in principle, to child development and education, has been advocated in the thesis so far from these perspectives:

- A conception of child as holistic by nature (Montessori, Steiner, early childhood educators)

- A psychological view of a child as possessing, by nature, sundry capacities or domains, each of which needs developing, interdependently
- A neurophysiological view of the holistic operation of the human brain where all its structures and functions are interconnected
- A sociological-ecological (contextual) view of each child, whose individual learning and development is impacted by multiple overlapping environments, all of which need to be understood and taken into consideration

There is another critical perspective – a ‘principle’ - to be taken into account. A ‘holistic’, ‘whole’, ‘complete’ perspective assumes not only that a holistic approach is appropriate to and required by the physiology and psychology of human nature, but that a child will be, in some sense, ‘whole’ in consequence. Conversely that not viewing children holistically and educating them holistically means they will be less than ‘whole’. The concept and linkage seems to be implicit and assumed. It seems to be rarely, if ever explained. The thesis is seeking to demonstrate and explicate these assumptions, and explore a way forward for education conceived in these terms.

Conclusion

The Chapter has developed psychological and contextual (ecological) concepts of human and child ‘completeness’ or ‘wholeness’. It has provided the elements (capacities, domains and contexts) that need to be taken into account in aiming at human completeness – and a ‘principle’ of their potential integration.

The Chapter has not demonstrated how pursuing such a principle will achieve what Diamond (2010, pp.788-9) referred to as the goal of child development: Children growing up to be “good human beings”. It has not demonstrated that the concepts and principle of ‘wholeness’ or ‘holism’ will produce what UNESCO (1972) terms individual “authentic identity” and a sense of belonging “to the entire species” (p.xxxix). It has demonstrated an assumption and expectation that it will.

The additional assumption or underlying expectation of scholars and pedagogies advocating a ‘whole child’ or ‘holistic’ approach to education seems to be this. Scholars and professional educators write in terms of ‘whole’ child because they postulate and believe that educating all children in holistic ways of mind, heart, body, spirit, and/or human ‘domains’, will support their development in behaving responsibly and respectfully (and not harmfully) towards themselves, towards other people and human society generally, towards the natural world and its multiple environments, perhaps even towards a spiritual existential world. Moreover, that not doing so, inhibits child and adult potential to think and behave in empathic ways.

There is a further connotation in this expectation. it is both possible and necessary to educate all children to think, feel and behave in these ways in childhood such that they will continue doing so lifelong. Conversely, that children (and later when they become adults) will learn and understand in heart, mind, body and spirit, all their domains - ‘wholly’ - that believing and behaving in contrary ways of disrespect, and irresponsibility, are inappropriate, unnecessary and harmful for

human beings. It is not possible to behave in this latter way, and be a ‘whole’ human being, participating empathetically in, and contributing to a whole world.

Chapters Five and Six will continue to pursue these assumptions and expectations, and develop the paradigm of the holistic principle, with respect to human learning, concepts of holistic education, and the perspective of a holistic universe.

CHAPTER FIVE HOLISTIC LEARNING: Holistic principle (2)

Introduction

The Chapter turns again to the subject of human learning – 'learning to be' (UNESCO, 1972) - explored in Chapter Three. Some principles of learning were identified there, for further exploration here. In sum, they are:

- Human learning engages the whole human physiology of brain, body, mind, emotion and health, through neurological structures and functions that are 'interconnected'. Human learning is physiologically 'holistic learning'.
- Human learning occurs contextually through individual experiences of interaction with people, events and physical surroundings.
- Human learning is individually differentiated, but each individual can be encouraged towards achieving personal agency, and personal transformation.
- Human learning is existential, lifelong. It is learning to 'become' and 'be' completely human: An integrated person who is empathic towards and has a sense of belonging to the human and natural world.

Taken together, these principles provide a conceptual framework of human learning to precede the vision of Faure and UNESCO (1972) for human completeness. They do not however explain any connection between physiologically holistic learning, personal agency and transformation, and a sense of belonging to the human and natural world. They do not provide connection to what the thesis now calls the domains of human nature UNESCO proposed (1972, p.156). This Chapter seeks to make these connections.

The proposition of the Chapter is that human learning is conceived as 'holistic' (interconnected learning), in principle. Human learning is embodied. It involves all the 'domains' identified in Chapter Four. More than one domain is involved in any single instance of human learning. It involves all the capacities of human nature discussed in Chapter Two. Any one moment of learning also occurs in multiple external contexts. Human learning is holistically physiological, psychological, and ecological.

The Chapter provides the second part of the conceptual paradigm being offered by the thesis in response to the challenge Faure and UNESCO (1972) have set. Chapter Four has argued for the principle of a holistic concept of child, whose 'domains' can be integrated, as the premise for complete 'human being'. This Chapter argues for a principle of holistic learning as the premise for 'learning to be' a complete human being.

The Chapter follows this structure.

- The first Section provides examples of the concept and practice of holistic learning from three perspectives:
    - Early childhood education, with particular reference to frameworks in Australia, NZ and Ireland
    - A 'holistic curriculum' being associated with holistic learning[145]

[145] A concept of a holistic curriculum (discussed at Section 5.1.2) associated with 'holistic education' is introduced in Chapter Six.

    - The holistic curriculum and approach to holistic learning of Steiner-Waldorf education
- The second Section discusses neuroscientific research of the holistic operation of the human brain with respect to each of the domains of learning identified in Chapter Four (Section 4.1). These domains correspond to dominant areas of interest of brain research activity. They also pertain to the subject learning areas of conventional school curriculum and to aims of schooling illustrated in Chapter One.
    - Cognitive, intellectual (language, number), physical (movement), emotional and social, creative and aesthetic (music, visual arts), spiritual and nature, and ethical, moral domains.
- The third Section provides examples of current pedagogical theory and practice of holistic learning.

A holistic approach to learning, holistic learning, holistic education

Before commencing the discussion, some further clarification of terminology is needed. The terms ‘holistic learning’ and a ‘holistic approach’ to teaching and learning’, even a ‘holistic education’, tend to be used interchangeably in educational discourse. There is no generally agreed concept of each term. ‘A holistic approach’ is more common and has been used more frequently in the thesis so far. The thesis wishes to distinguish the meaning and use of the three terms, and in this Chapter offer a concept of ‘holistic learning’ *per se*. A concept of holistic education will be offered in Chapter Six.

A holistic approach

A ‘holistic approach’ is used most commonly in early childhood education discourse to refer to child learning being ‘holistic’ when it is conceived as occurring in and being influenced by multiple contexts – each child’s bodily, social-communal-cultural-political, geographical, and educational environments.
It is used occasionally (Higgins, 2012) but not consistently in early childhood or schooling professional documents to refer to concepts of child development and learning presented in terms of ‘whole child’ capacities, domains and multiple contexts, and their interaction, as suggested in the model at Figure 9.

The term ‘holistic approach’ has been used in the thesis to this point in these ways. Montessori and Reggio Emilia pedagogies encourage holistic approaches to learning (Section 3.2.5). Nye (2018) identified five kinds of daily learning activity drawn from holistic approaches: Cognitive-intellectual, creative-intuitive, physical, handwork, and engagement with nature and community (Section 4.2.2). The Jamaican holistic approach includes child health (Section 4.2.3). The Australian EYLF declares that “holistic approaches to … learning recognise the connectedness of mind, body, spirit”, and connections to families and communities and to the natural world (2009, p.14) (Section 4.2.3).

A ‘holistic approach’ is used variously in scholarly literature. It is used to refer to learning grounded in indigenous culture (Hill, 1999; Mahmoudi, Jafari, Nasrabadi, & Liaghatdar, 2011; Semchison, 2001) and to learning offering a ‘spiritual’ approach exploring the meaning of the universe, the beauty of nature, and

reverence for life (Clark, 1997; Dufty & Dufty, 1994; Venugopal, K. 2009). It is used to refer to schooling that addresses students' life experiences and needs (Doyle and Hill, 2008; Patel, 2003), and a focus on the whole child, their physical being and the person of the teacher (J. Miller, 2007). It refers to encouraging students to develop virtues and an orientation to service to others (Huitt, 2011). These ideas are all relevant to the thesis argument and inform the discussion of holistic education in Chapter Six.

'A holistic approach' to learning is used here to mean that when educators plan, support and review each child's individual learning, from a conceptual perspective of 'whole child' in contexts, they are adopting 'a holistic approach'. A holistic approach to human learning sees it as occurring both psychologically and contextually, through each child's connected capacities, and/or domains for learning, together with the various societal and geographical contexts informing the learning of that child. Conceiving a 'holistic approach to learning' in this way is consistent with the whole child concept of Chapter Four. A suggested model was offered at Figure 9.

Holistic learning

The concept of holistic learning to be articulated here assumes a 'holistic approach' to learning, but focuses on the 'interconnectedness' of all learning – psychologically, physiologically, contextually (ecologically) – as axiomatic.

‘Holistic learning’ here assumes what each ‘whole’ human child does naturally all the time, as he/she brings spontaneously to any experience, formal and informal, all his/her interconnected capacities and domains – innate and partly developed by experience. Human holistic learning is embodied, involving all attributes of human neurophysiology and psychology - the five human senses, mind, feelings, cognition, social/relational awareness, spiritual sense, all the domains of learning, whether these are conscious and/or unconscious processes. What actually occurs and how, to human beings, in their various contexts of learning, is still largely unknown to laboratory and action research.

Human learning also occurs through contextual interactions. What is being suggested here, particularly in the discussion of brain research with respect to social-emotional, spiritual, nature and empathic domains, is that human beings have a neurological/psychological sense of ‘connectedness’ with others and the world that can and needs to be developed in the search for human ‘wholeness’.

5.1 Holistic learning in early childhood, curriculum, Steiner-Waldorf

5.1.1 Early childhood

The term ‘holistic’ is most frequently used in educational writings with respect to early childhood education. However, not all practices of early childhood education, introduced to the thesis in Chapter One (Section 1.6) and Chapter Four (Section 4.2.), are explicitly described as ‘holistic’. The term is also not used consistently. ‘Holistic’ is used variously to refer to a concept of whole child in terms of domains, to recognising the multiple contexts affecting children’s development, learning, and

wellbeing, to the way(s) children naturally learn, and to the need for early childhood curriculum (which guides and supports children's learning) to be holistic in its conception and practice.

These different senses of 'holistic' are illustrated in the examples offered below of national and scholarly statements conceiving early childhood from a holistic perspective. The statements refer to both holistic learning and a holistic approach to teaching and learning and child development. Despite this overlap, the most direct statements the research has encountered with respect to holistic learning, are those offered by the Australian EYLF (Council of Australian Governments, 2009),[146] the NZ Te Whariki program (Ministry of Education, NZ, 2017) and the Irish program Aistear (NCCA, 2009, 2017). These programs were introduced at Section 1.6.[147] They each refer to the essential connectedness - woven interdependence - of children's learning.[148]

The view of the Australian EYLF (2009), is that children's development and learning occurs through relationships. It is these through which children learn to

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[146] The Framework provides a Bibliography, but not a statement of the research and theory on which it is based.

[147] Babiuk (2006) wants to analyse the Reggio Emilia approach from the perspective of 'holistic learning' (para. 5).

[148] Niikko and Ugaste (2012, Abstract) provide a field study of the goals of preschool teachers in Finland and Estonia, but do not refer to 'holistic learning'. They say teachers in both countries emphasized (sic) "children's holistic wellbeing, social development … and an emotionally and socially safe environment", together with cooperation with families.

belong, be and become (p.7) – to construct their identities, feel connected to and contribute to the world (p.8). These are the two outcomes from education Faure (in UNESCO,1972) wished (p.xxxix). The declared position of the EYLF (2009) is that "Children's learning is dynamic, complex and holistic" (p.10). Educators see "children's learning as integrated and interconnected" (p.16). Early childhood educators' professional practice – their *pedagogy* (sic) – is holistic in nature (p.12). They adopt "holistic approaches" (p.16). They recognise the connections with families and communities (p.16).

The EYLF (2009) also writes in terms of capacities and domains, including connection with nature. "Holistic approaches to teaching and learning recognise the connectedness of mind, body and spirit" (p.16). They mean paying "attention to children's physical, personal, social, emotional and spiritual wellbeing as well as cognitive … learning" (p.16). "An integrated, holistic approach to teaching and learning also focuses on connections to the natural world" and "children's capacity to understand and respect" … "the interdependence between people, plants, animals and the land" (p.16).[149]

Te Whariki emphasises a holistic curriculum which reflects the holistic way children learn and grow (Ministry of Education, NZ, 2015, p.10). The curriculum presents 'holistic development' (kotahitanga) as the second principle of its woven mat of principles and strands (p.19, p.2) underpinning the curriculum (p.17). While human

[149] Higgins (2012) cites this statement in entirety.

development may be conceived in cognitive, physical, emotional, spiritual, social and cultural dimensions, these dimensions “need to be viewed holistically, as closely woven and interdependent” (p.19). The spiritual dimension connects the others. Moreover, every aspect of the context – the physical surroundings, each child’s emotional state, each child’s relationships with others and immediate needs will affect what children learn. Teachers must have understanding of the holistic way children learn (p.19). A holistic approach to teaching and child learning “sees the child as a person who wants to learn, the task as a meaningful whole, and the whole as greater than the sum of its parts” (p.19).

The Aistear Framework (NCCA, 2009) focuses on children as learners, the nature of learning important to children, and how this can be nurtured (p.6). It makes connections in learning (p.6). The first principle of learning is that it is holistic (p.7). Children learn many things at the same time – cognitive, creative, emotional, linguistic, moral, physical, social, and spiritual (p.10). What children “learn is connected to where, how, and with whom they learn” – family, community, wider society (p.10). French (2007), providing a support paper to Aistear, noted parents’ interest in children’s holistic development, which interweaves children’s multiple domains of learning (p.6, p.20).

Three different statements present a position that ‘holistic approaches’ to children’s development and learning are normative. UNICEF and WHO (2012) refer to the Convention on the Rights of a Child (CRC, 1990), which averred that a holistic approach that guarantees both child survival and development is the child’s right

(p.2). UNESCO (2015) says “We need a holistic approach to education and learning that overcomes the traditional dichotomies between cognitive, emotional and ethical aspects (p.39).[150] Higgins (2012) in Australia observes that a growing body of world research is emphasizing the importance of holistic approaches, where teaching practices focus more on the complete physical, emotional and psychological wellbeing of a child” (p.1, citing UNESCO, 2002).

There are few scholarly concepts of ‘holistic learning’, *per se*, in an early childhood context. Berk & Winsler (1995) refer to the central function of language (p.5, p.99), Through social interaction, children’s learning is *contextualized* (sic) (p.18). Gertraud (2011) explores the physiology of learning from pre-natal experience and the importance of varied emotional expression (p.87, p.160). DeVries, Zan, Hildebrandt and Edmiaston (2002) observe that play, which is child initiated and directed, together with work, are “integrated with social, emotional, moral and intellectual development (p.13). Hildebrandt and Zan (2002) see music and music instrument making as providing “rich opportunities for learning and development across many domains – music, art, science, literature, drama, and social studies (p.110). They see the exploration and experience of rhythm patterns, differences of sound and of musical instruments as being developmentally significant. Holistic learning conceived with all these elements is explored at Section 5.2.2.

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[150] Holistic assessment frameworks – including social and emotional learning and the arts - have been proposed (p.39). UNESCO (2014) provided a ‘holistic’ early childhood development index framework.

There are some scholars who conceive of children's learning in 'whole' terms (Bruce, 2011; David, Goouch, Powell & Abbott, 2003; Gordon & Williams-Browne, 1995; Kostelnik, Soderman & Whiren, 2007; Pound, 2013; Wilson, 2008). Their language is consistent – learning for 'whole' children involves all their domains and must be integrated, unified, intertwined, interconnected learning. It assists moral development (Bruce, 2011, p.158) and transformational learning (Pound, 2013, p.7).

Gordon and Williams-Browne (1996) refer to Froebel, Montessori and Steiner conceiving of the 'whole child', where different areas of development and learning are connected into a kind of unity (p.12). Bruce (2011) makes a similar attribution. The second principle Bruce derives from these three educators and what she calls "classic theories" is that "children are whole people" (p.19). She presents Froebel's view of a whole child as physical, spiritual, moral, feeling, intellectual – where the unity of learning is central (p.19). Bruce's third principle is that learning across the curriculum is (should be) integrated – the wholeness of knowledge is emphasised (pp.22-3, p.46). Bruce discusses making rich learning environments which include indoors and outdoors (Chapter 4), and learning empathy - how others feel and think (Chapter 8). She says moral development emerges from a sense of one's own well-being (p.158). Wilson (2008) also sees these three educators, together with Pestalozzi, as pioneers in holistic education, in developing the whole child, who saw children as more than body and mind, but having a spiritual dimension.

A Review of Literature in the UK (David, Goouch, Powell & Abbott, 2003) [referred to at Section 4.2.3] to inform the Framework for children 0-3 years, offers one key message (p.38) - that “all areas of learning and development are intricately intertwined” (p.8, p.66). Young children “develop and learn holistically” and their emotional and social development underpins other areas (p.8, p.76). “In real life, children’s development and learning is not compartmentalised but is holistic, with many interconnections across different areas of experience” (p.25). The authors welcome the “renewal of discussion of the need for a holistic model” of child development (p.24). Kostelnik, Soderman and Whiren (2007) assert that “children are holistic beings” (pp.23-4), who need a “holistic approach” to teaching and learning (pp32-3). Focus on the ‘whole’ child: Aesthetic, affective, cognitive, linguistic, physical, social – needs to occur in every task in which the child is involved (pp.32-3).

Pound (2013) discusses “holistic approaches”. He says Comenius in the 17th century held a holistic view of learning – that intellectual, spiritual, emotional aspects of learning were inseparable (p.5). Pound says ‘holistic’ is a widely used term in early childhood education (p.6). As others above, he sees Froebel, Montessori and Steiner providing early examples of holistic education and learning. Pound perceives a 20th century tension between the view of education as primarily intellectual, and the belief of educators who emphasise the transformative nature of learning and that there should be connections between all forms and areas of learning (p.7).

5.1.2 Holistic curriculum

The unique ‘woven mat’ perspective offered by Te Whariki in NZ (2017) conceives holistic learning as necessarily interwoven with a holistic curriculum. Not only is children’s learning, in the way it happens within a child, interconnected, the vehicle of learning – the curriculum – must also be interconnected. This stance is much stronger, more profound, than seeking or providing “cross curriculum priorities” such as “sustainability” (ACARA, 2013, p.23), or seeking conceptual topic links between language, history and art subject learning areas. A ‘holistic curriculum’, in its most complete conception, proposes that a child’s entire learning experience, as provided formally in an educative context, is ‘holistic’.

A concept and principle of holistic learning and/or a holistic approach to learning, such as that informing early childhood education, seems absent from mainstream schooling for children aged 7-18 years. The principle that all child and human learning is interconnected in the way it occurs psychologically, neurologically and contextually, does not yet premise, nor explicitly shape the research and practice of schooling education. Language referring to the learning of each child necessarily occurring holistically, interconnectedly, contextually (bodily and communally) is limited to many (but not all) Steiner and Montessori schools, and to individual schools pursuing idiosyncratic concepts of a holistic approach to schooling, and to human learning and development.

Conventional schooling structures and curriculum from Years One to Twelve, are typically arranged in subject disciplines or learning areas. The largely common

western schooling curriculum comprises English language, mathematics, science, social science, foreign language, visual and creative arts (music), health and physical education, with, in more recent times, design and information technology. These subject areas represent a classical concept of knowledge and learning tracing back to Aristotelian Greece. They are rarely, if ever, linked with concepts of human capacities and domains for learning, and with specific outcomes of human development such as those UNESCO (1972) proposes.

A concept of 'holistic learning', in principle, radically challenges this traditional approach. If brain research now or in the future can establish unequivocally the human brain's neurological propensity for learning each of language, music, movement, visual arts, even spirituality and nature empathy, and doing so in a holistic way, then that invites a profound reconception of the ways learning in schools, and its curriculum, is conducted. It links school learning fundamentally with human development. It provides the research framework for the development of a holistic curriculum in public education. The foundation for holistic learning conceived in this way is offered at Sections 5.2 and 5.3.

5.1.3 Steiner-Waldorf education

Steiner-Waldorf education provides the most developed international example of holistic learning and a holistic curriculum. What is unique to the conception of Steiner education, is that learning is 'holistic' in every aspect, for all age groups. Children, curriculum, pedagogy, the daily and annual program, the natural world, are all conceived 'holistically'. Everything is interconnected and interdependent. A

caveat is that not all individual school examples of Steiner education currently offer a contextual family/social/community model of a holistic approach to learning.

The term ‘holistic’ is used of Steiner education by commentators, scholars and schools, but not by Steiner himself. Scholars’ ideas of the Steiner holistic approach to child development and learning have been referred to in the thesis at Sections 1.4, 2.1, and 3.2.5. Features of Steiner education vividly illustrating holistic learning are eurythmy, the integration of the arts, the integration of the natural world, ‘spiritual’ sense, and ‘curative education’. These are described below.

‘Eurythmy’ is an original feature of Steiner education. It is “a new art of movement which aims at expressing in gesture and movement the living quality of the sounds of speech and music” (Carlgren, 1976, p.11). Carlgren says eurythmy is “visible speech, visible song” which can create “lasting forces of will” (p.56). It is natural and archetypal (p.34). Morrison (2007, pp.28-33) explains the concept further. As children learn reading, they become letters through physical gestures. Morrison says Steiner believed that every sound of speech and music can be interpreted through body movement. In the main lesson, books that become children’s textbooks, crayoned pictures of mountains and trees become letters ‘M’ and ‘T’. Cursive writing and mental imagery for geometrical designs derive from these and other shape drawings. ‘Rhythm’, separate from eurythmy, is a part of all these activities, part of the school day, and of the seasonal year.

The Steiner Academy Hereford UK (2019) describes eurythmy as “an art of movement that engages the whole human being. It aims to harmonise the child’s physical well-being with their feelings and emotions. Regular eurythmy practice lessons help children become more coordinated, graceful, and alert and to be more at ease with themselves. In the eurythmy lesson the children move to poetry, prose text and live instrumental music”. … This “deepens their aesthetic appreciation of literature and music and complements other aspects of the curriculum”. Eurythmy requires children to work in groups, developing spatial awareness, and “a capacity to sense” group movements and children’s own movement.

Steiner education is unique in the emphasis it places on the arts for all students in all years of the curriculum. Teaching and learning occurs not just of the arts but through the arts (Steiner Education Australia, 2020). “The artistic element is the common thread in every subject; (sic) teachers integrate art, music, drama, storytelling, poetry and crafts into the curriculum (Morrison, 2009, Chapter Six). There is typically also woodcraft, gardening, cooking. The Steiner Academy Hereford (2019) offers a great variety of handcraft skills: Sewing, knitting, crochet, weaving, tailoring, dyeing and felting, with emphasis on beautiful natural materials.

The Perth Waldorf School, Western Australia (2020) says the curriculum “is designed as a unity”. Woodwork helps “each individual student engage with their will”. The Association of Waldorf Schools of North America (AWSNA, 2020, Waldorf Education: An Introduction) says that arts are integrated into all academic disciplines to “enhance and enrich learning”. Moreover, music and dance, theatre,

legends and myths are not “simply subjects” to be learned and tested – “they are experienced”. It is “through these experiences, Waldorf students cultivate their intellectual, emotional, physical and spiritual capacities to be individuals certain of their paths and to be of service to the world”.

A third provocative aspect of Steiner education is the belief in a (the) human relationship with nature and its rhythms: The rhythm of the day, the seasons, the festivals that celebrate these rhythms.[151] The human body has natural rhythms and developmental stages. Marshak (1997, p.7) says “the most fundamental nature of human beings is that we are complex systems of energy”. “One only is material”, the others are “purely energetic”, interdependent, and exist on “different planes of being” – physical, life-force, mental, spiritual. The Steiner Academy Hereford (2019) says the rhythm of the daily Main Lesson (sic) “aims to meet the pupils’ natural energy patterns”, assisting in their learning engagement (Curriculum, Lower School). The celebration of festivals helps children develop a sense of belonging, and encourages their moral and spiritual well-being. Other daily practices and teacher modelling encourage reverence and respect for others.

The meaning of ‘spiritual’ in Steiner education is different from a concept of a spiritual intelligence or capacity or religious propensity that is just one aspect of

[151] Particular Steiner schools (The Steiner Academy Hereford UK, 2019; Willunga Waldorf School in S Australia, 2020; and Warrah Special School in NSW, 2020) provide a natural environment – of trees, bushland, animals, farming, local geography and cultural heritage.

human nature. It is not an arbitrary aspect of the human condition to be accepted or rejected by personal opinion or educational policy. For Steiner, the nature of human being and the universe is fundamentally 'spiritual'. "The aim of Steiner's *anthroposophy* (sic) … is to connect the spiritual in the human being with the spiritual in the world" (Haralambous, 2018, p.5).[152] The spirit in each child as part of the universe is to be cultivated by "inner spiritual training", by eurythmy, the arts, stories, experience of nature, the spirit of each teacher (Carlgren, 1976, p.11). McDermott (2009, p.ix) calls these "spiritual practices" requiring skilful means.

A final aspect of Steiner's 'holistic' concept of education and schooling to be mentioned here is 'curative education' for children with developmental disabilities or delays. Steiner Education Australia (2016, Curative Education) says that

> Curative Education takes a very individualistic and holistic approach to each child. Generally the teacher attempts, through artistic expression, to bring those aspects of body, soul and spirit, which are out of balance, back into equilibrium". "This is often … done by emphasizing those elements of colour, movement, form and sound which embody the opposing polarity to that characterized by the child. Through this process the child is helped to develop a healthy sense of self.

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[152] Steiner developed "anthroposophy", a "path of inner development or spiritual research" for which he provided "practical indications for nearly every field of human endeavor" (AWSNA, 2020). Individual Steiner Schools refer to "the spiritual dimension of life" (Perth Waldorf School, 2020), "spiritual domain" (Willunga Waldorf School, 2020), and "moral and spiritual well-being" (Steiner Academy Hereford, 2019).

Interim conclusion: Section 5.1

The discussion above demonstrates the strength and relative harmony of voices advocating holistic learning, and/or a holistic approach to learning as a principle which can be practised. Even so, as the discussion has acknowledged, the principle of holistic learning and the pedagogy necessarily derivative of it, is not universally accepted. For many educators, it is an ideological position only. A further perspective from brain research, introduced in Chapter Three at Section 3.3.2, has begun to provide evidence that a holistic principle of human learning is not only ideological, but supported by scientific research. The Chapter now explores this landscape in detail.

5.2 Neurological research of human brain activity: Interconnection

The intent of this Section is fourfold:

- To explore claims that some at least of the domains - presumed by UNESCO (1972), and added to in the thesis discussion at Section 4.1 - have a physiological/neurological basis or concomitant in brain structures
- To explore the apparent neurological/physiological interconnection of brain structures and functions involved in human activity and learning in any and all domains
- To introduce a different perspective of conventional school curriculum learning areas seen as content knowledge and skills – seeing them instead as learning propensities of the human brain to be nourished in the process of the holistic development of integrated human beings

- To provide a conceptual model – a paradigm - of holistic (interconnected), whole child learning, as precursive to the process and goal of educating for humanity

Neurological research is exploring brain behaviour - the dominant locations and patterns of brain activities – the neural networks - associated with human learning and behaviour, specifically those connected to language, number, feelings, visualisation, imagination, reflection, and movement (Lefrancois, 2006, pp.164-7; Ormrod, 2012, pp.18-21; Pollard, 2008, Chapter 7). Such inquiry raises questions of the brain's predispositions, if any, for such functions. Research is also exploring the brain's capacity (plasticity) to replace, restore or relocate specific functions absent at birth or lost through accident and illness (Doidge, 2007; Jarvis & Parker, 2005, p.38; Nelson, Kendall & Shields, 2014).

The conclusions that may be drawn from brain research over the past 30-40 years (Barclay, 2018; Biga et al. 2019; Blakemore and Frith, 2000; Howard-Jones, 2007; McTigue & Wills, 2019; Moss, 2016; Sousa, 2006, 2010, 2011; Voytek, 2013), which are of most consequence to the thesis are these:

- There are brain structures (areas) that seem to have a specialised or dominant role and function within the human brain - such as those for vision, language, movement, feeling, memory, motivation, executive planning – indicated in Figure 10 below.
- The complexity of brain activities nonetheless requires a range of neural systems distributed across the brain to be involved in each instance of

activity. The human brain functions as a network, a web, an interconnected whole. Vision, the capacity for language, emotion and cognition of any kind (including memory), movement, response to music and nature, are interconnected structurally, neurally, in complex ways research is only beginning to discover and interpret. The brain is also plastic in its ability to change and redistribute functions.

- There is particular research interest in the linkage of biology and behavior – in the human brain's capacity for executive function, for individual self-regulation of behaviour and emotion, for moral decision-making, and the development of that capacity, in young children, adolescents and adults.

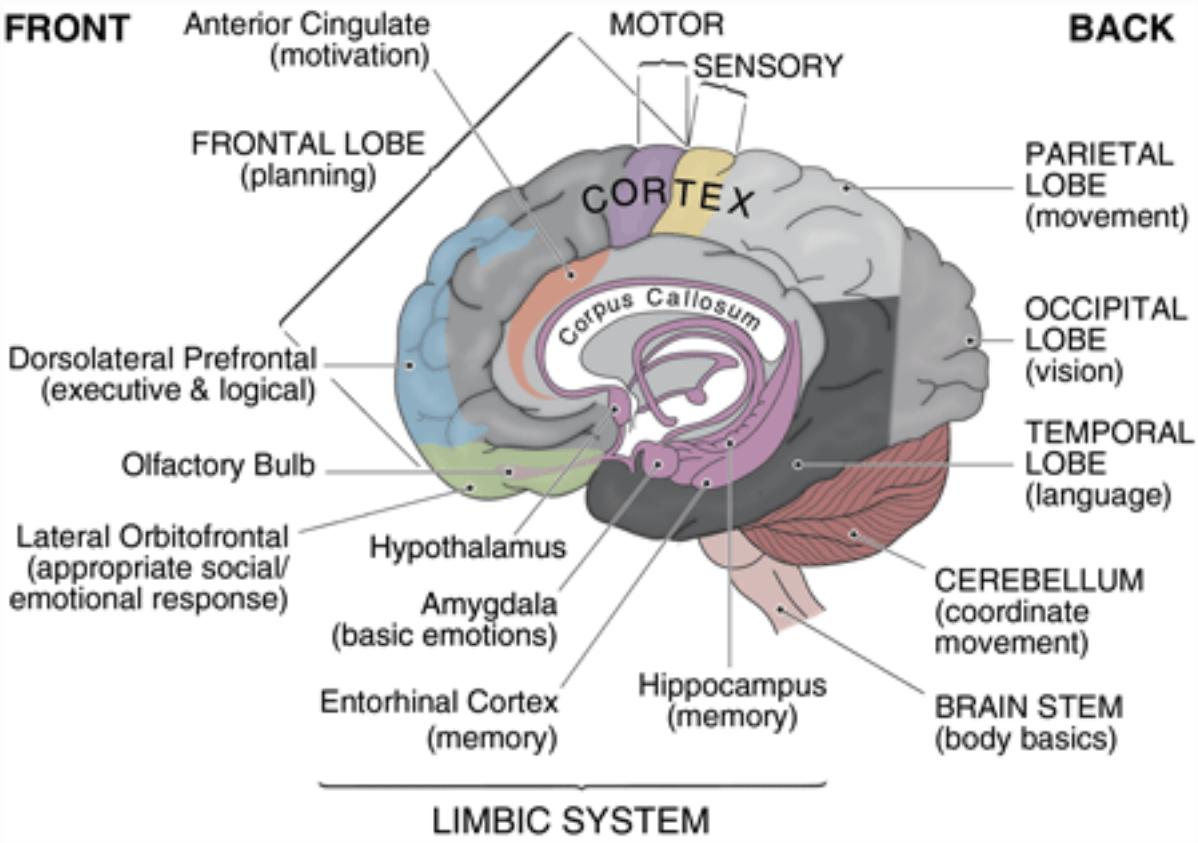
The Brainwaves Center provides an indicative diagram of current brain physiology and neurology for reference (Figure 5.2, Gamon, 2016).[153] Figure 10 below copies the model.

Posner (2010) notes the brain's "connectivity" – where several neural areas must be orchestrated to carry out any one task (p.32). Howard-Jones (2007, p.7) offers a similar view. "It is not advisable to consider any one part of the brain as being solely involved in any one task." Any "task recruits a broadly distributed set of neural networks". Bennett, Dennett, Hacker and Searle (2007), observe that specific human functions, including language, must not be ascribed to some

[153] The Center is an informal source written by an academic and professionally reviewed. The diagram is used with permission. Refer also Blakemore & Frith, 2000, Appendix 2.

specific part of the brain. “It is human beings who think and reason, not their brains” (p.7).

Figure 10 The anatomy of the human brain



Ramachandran and Blakeslee (1998) declare that (at the time) there was “still no clear idea how the brain works”, but the brain functions as a whole - ‘holism’ and ‘connectionism’ overlap (p.10). “Everything is connected to everything else” (p.10). Geake (2008) is certain human brains are densely interconnected. Thinking, for example involves “coordinated interconnectivity from both sides of the brain” (Abstract). Darling-Kuria (2010) says infants enter “the world as holistic learners”

and “should receive a holistic education” (p.6). Brain compatible learning requires a holistic approach (p.1).[154]

Given this increasingly confident assertion of the principle of interconnection of the brain’s neurology, the exposition here explores findings from brain research supporting holistic, interconnected learning across each of the domains of human being identified in the thesis. The domains are treated individually but arranged in five compatible groups.

(1) Language and number (cognitive, intellectual)

(2) Movement and social emotional learning

(3) Music and visual, creative arts

(4) Spirituality, nature affinity and empathy

(5) Morality, executive function and self-regulation

The focus of the discussion in each domain is on any findings from brain research with respect to the apparent disposition of the human brain for that domain of learning, and for any interconnectedness with other domains as learning occurs.

Each domain involves more than one set of brain functions. Oral language involves different brain operations from literacy (reading, writing, and comprehension of meaning of abstract concepts). Counting involves different brain operations from

[154] Other scholars writing in terms of brain ‘connections’ are: Brierley (1994, p.25); Darling-Kuria (2010, p.26); Jensen (1998, p.15, p.30, p.38, p.47, p.100); Jensen (2000, p.8); Jossey-Bass Reader (2008, p.34); Ramachandran and Blakeslee (1998, pp.8-10, p.33, p.56, p.116, p.133, p.177, p.182); Sousa (2001, p.7, p.19).

algebraic calculation. Movement involves both intentional and seemingly involuntary activity, and is associated with music and beat through playing an instrument and dance. Playing a musical instrument is different neurally from music listening and singing. Listening to different kinds of music prompts different neural responses.

5.2.1 Connections of domains: Language, number (cognitive, intellectual)

Language – oral, heard and written

Human language capacity and understanding how it works in the human brain – both for oral communication and listening, and for literate communication through reading and writing - is significant to the thesis in the way the following statement suggests (Gleitman & Papafragou, 2004, citing Chomsky, 1975). The terminology is more consistent with that of the first half of the thesis than with the holistic perspective being proposed here, but the statement illustrates the primacy of language to any exploration of human nature and learning.

> Language is a mirror of mind in a deep and significant sense. It is a product of human intelligence ... By studying the properties of natural languages, their structure, organization, and use, we may hope to learn something about human nature; something significant, if it is true that human cognitive capacity is the truly distinctive and most remarkable characteristic of the species (Chomsky, 1975, p. 4, cited in Gleitman & Papafragou, 2004, p.4).

The body of scholarship – both theoretical and from laboratory research – with respect to human language capacity is diverse. The comments here sum the

research position with respect to three themes only: The human capacity for language, distributed neural activity involved in oral language production and processing, and neural connectivity involved in reading language. The discussion following of learning in each of the other domains refers to any apparent interconnection with functions of the brain associated with language.[155]

Lenneberg (1967) accepts the "biological basis of language capacities" (p.vii). The studies to which he refers indicate the "complete interdependence and natural integration of the different tissues of the animal body" (p.5). Lenneberg presumes some kind of organising principle underlying the perception of speech and language, and (citing Lashley) proposes 'rhythm' (p.107, p.118). He proposes that cognitive function is a more basic and primary process than language but "entails a potential for language" (pp.374-5). Current scholars refer to a human language 'instinct' (Crain, 2012; Pinker, 1994), to a "mechanism for language" in the brain (Small, 2008), and to the "innateness" of language skills and their acquisition (Fromkin, et al. 2012; Peng, 2005; Williamson, 2014b).

Laboratory brain research has particularly explored the evidence for localized versus the distributed nature of language function and hemispheric specialization

[155] The discussion does not explore these scholarly issues concerning human language: The origins and evolution of human language (Hauser, et al., 2014); How language is organized in the brain (Arnove, 2008; Lyons, 1970 (presenting Chomsky's work); Language acquisition (Kuhl, 2010; Singleton & Ryan, 2004); Language aphasia, autism, and therapy (Crain, 2012; Obler & Gjerlow, 1999; Williamson, 2014).

(Binder, et al. 1997; Caplan, 1994; Howard-Jones, 2007; Poeppel, Emmorey, Hickok, & Pylkkanen, 2012; Ramachandran & Blakeslee 1998).

Poeppel, Emmorey, Hickok and Pylkkanen (2012) provide a summary statement of the current research position with respect to the neural basis of speech and language processing. They say there is now a closer alignment of language research and neuroscience. They say the era of "apportioning different aspects of language function" to different regions is now over (p.3). "Speaking spatially, local regions, processing streams, the two hemispheres and distributed global networks are now implicated in language function" (p.3). The authors explore "different aspects of language processing (perception, production, sign language, meaning construction)" (Abstract p.1, p.5). Williams (2010) explores the neural areas involved in learning, using, and processing spoken language.

Sousa (2010) brings together a range of scholars responsible for "educational neuroscience" (p.1). Gabrieli, Christodoulou, O'Loughlin, and Eddy (in Sousa, 2010) observe the connectivity of the brain's complex systems for reading (phonology and visual processing) (p.113). Coch (in Sousa, 2010) says there is no single part of the brain that "does reading" (p.139).[156] The brain builds a complex of neural systems to enable reading for which it is not specifically designed. These include systems for visual processing (orthography), phonology, the connectivity of

[156] Goswami (2008) says neural networks are needed for reading (Abstract). Gow and Olson (2016) discuss networks involved in speech perception.

the two, semantics and comprehension (pp.140-152). He, Xue, Chen, Chen, and Lu (2013) research the neuroanatomical basis of reading, showing several brain regions are involved in human reading. [157]

Number, number instinct, innate number sense, connection with brain functions

Theoretical and research interests have inquired whether human beings have an innate numerical capacity or instinct, evident in early infancy? Is it, and if so, how is it, related to language capacity and use? Where are number operations located in the brain? Conceptual distinctions are made between what is/is not innate, such as a 'number sense', or simple cardinality, and what needs to be learned – counting, numerosity and mathematics.[158]

Dehaene (1997, p.40, p.86; 2001, p.2), Devlin (in Sousa, 2010, p.164, citing Dehaene, 1997), Marmasse, Bletsas and Marti (2000, p.1), and Star, Libertus and Brannon (2013, p.1) propose that the infant brain has a 'number sense' – a sense of the relative sizes of small collections of things (2 or 3 objects) – which is

[157] A program in NY and Pennsylvania in cooperation with a neuroscience laboratory, Haskins Global Literacy Hub, has teachers undertaking brain scans of their students as they learn to read so that teachers can plan interventions (Sparks, 2020)

[158] Butterworth (2005) refers to the infant innate early sense of number as 'numerosity'. Sarnecka and Wright (2013) explore the link between cardinality and equinumerosity.

preverbal, and therefore precedes counting.[159] Dehaene (2001) offers the hypothesis "that number sense rests on cerebral circuits that have evolved specifically for the purpose of representing basic arithmetic knowledge" (Abstract, p.2). These circuits are based in the inferior parietal region (intraparietal cortex of both hemispheres) (p.8), and "activated during number processing" (p.1). Dehaene is adamant however that a "single brain area" does not encode "all knowledge of arithmetic": Multiple brain areas contribute to the cerebral processing of numbers (p.10). Dehaene and his associates propose three numerical codes with associated brain circuits, across both brain hemispheres, including that involved in verbal representation (p.11).

Devlin (in Sousa, 2010) says human babies from two days after birth show this sense of number. They "exhibit an innate knowledge of the basic arithmetic facts" such as 1+1=2 and 1-1=0 (p.165). Besides a number sense, the brain also has a "capacity to form a concept of (discrete) whole number" (p.164). However, innate precision beyond '3' seems to involve language (p.165) and symbolic procedures (pp.166-167). Learning multiplication tables is a linguistic task (pp168-9).[160] Devlin

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[159] Gelman and Gallistel (1986) developed some principles of counting which are still part of "accepted thinking" (Thompson, n.d. 2010, p.1, Para.3). Their work is not based on brain research.

[160] Devlin's theory is that mathematical ability is an amalgam of nine basic capacities acquired by ancestors over hundreds of thousands of years – number sense, numerical ability, spatial reasoning, sense of cause and effect, an ability to construct and follow a chain, algorithmic ability, abstraction, logical reasoning, and relational reasoning. The brain's capacity to do mathematics preceded modern mankind starting to do it (pp.175-6).

refers to the role of repetition (typically verbal) in strengthening the brain's neural pathways (p.168). He says studies indicate "number capacities appear to be localized in (or at least depend on) particular brain areas" and this is supported by brain damage studies where other capacities such as language are left intact (p.164). He believes we know almost nothing about how people do, and learn to do, mathematics (p.163).

Dehaene (1997) says the development of numeracy, arithmetic and subsequently mathematics beyond the age of three (3) years, requires language skills that explode around 18 months of age (p.41). He shows how language and memory are influential in number acquisition and use. Dehaene (2001) postulates "that higher-level cultural developments in arithmetic emerge through the establishment of linkages" between the core representation of the "number line" (sic) and "other verbal and visual representations of number notations" (p.2). He says the "constant dialogue" within the child's brain, "between linguistic, symbolic and analogic codes for numbers" eventually leads in numerate adults to "an integrated set of circuits that function with the appearance of non-modularity" (p.12). Dehaene thinks the scattering of arithmetic functions in many cerebral circuits and how these are orchestrated raises an issue for neuroscience to explore (1997, pp.199-203).[161]

[161] Dehaene (2001) hopes that greater understanding of the neuropsychological foundations of mathematics will support teaching mathematics more effectively (p.17).

Research into number operations in the human brain beyond early childhood are wide ranging. They include dyscalculia (Howard-Jones, 2007;[162] Kaufman, 2008), gender differences (Buckley, 2016) and linkage with space and time (Dehaene and Brannon (2011). A scholarly review of Dehaene and Brannon (2011) by Montemayor and Winther (2015) says the broad stance of their "staggering" research is that the concepts and principles of mathematics - "the subconscious, automatic, and prelinguistic neurological and mental elements necessary for mathematical cognition" are built into human cognitive structure (p.94).

The conclusions to be drawn from the wide research are congruent with those from early childhood. The human brain has both dominant areas and multiple areas involved in number processing of different kinds. Number operations at different stages of child and adult development involve verbal, visual and manual processes, and memory. Howard-Jones (2007) says for example, that "research has shown that teenagers activate different areas of the brain from adults when learning algebraic equations" and this is associated with a "process of long term storage" (p.9).

[162] Howard-Jones (2007) reports on an international gathering of neuroscientists and educators. "Formal dialogue between neuroscience and education" is relatively recent (p.5). He cites Frith and Blakemore (2000, p.24) saying that neuroscience has barely begun to influence education. He refers to OECD research (1999-2006).

5.2.2 Connections of domains: Movement, SEL

Movement, and motor skills

Movement is connected with human learning in every domain being considered in this section and in the practice examples in Section 5.3. For von Hofsten (2004) motor development is at the heart of all development – perception, planning and motivation. He says inquiry needs to consider why particular movements occur, how they are planned and how they anticipate what follows. Ostry and Gribble (2016) assert that “accumulating evidence from behavioural, neurophysiological and neuroimaging studies” shows “that the acquisition of motor skills involves both perceptual and motor learning” (Abstract). They are interconnected – “reciprocally linked” (Abstract). The authors’ study concludes with further questions about this linkage to be pursued by research.

Iverson (2010) offers a particularly thorough exposition of research and theory linking motor and language development in young children. She believes movement has been neglected in psychology. A “premise” of her article “is that the development of language should be viewed in the context of the body in which the developing language system is embedded” (p.2). Iverson argues “that motor acquisitions provide infants with an opportunity to practice skills relevant to language acquisition before they are needed for that purpose” (Abstract). Her “central claim is that changes in motor skills (i.e. achievements and advances in posture, independent locomotion and object manipulation) provide infants with a broader and more diverse set of opportunities for acting in the world” (p.2).

Burns, O'Callaghan, McDonell and Rogers (2004), Diamond (2003), Gabbard and Rodrigues (2008), Hannaford (1995), and Jensen (2000) suggest a broader link between movement, and/or motor development, cognitive development and learning generally. Burns, O'Callaghan, McDonell and Rogers (2004) establish a link between motor ability and cognitive performance in a study of infants of low birth weight. Diamond (2003) thinks "motor development and cognitive development may be interrelated" – "the cerebellum may be important for cognitive as well as motor functions" and be in circuit with the prefrontal cortex (Abstract). Gabbard and Rodrigues (2008) refer to the human brain's neural circuitry and its intricate interconnections. They believe young children particularly need sensory-motor experiences, especially visual-motor and gross motor activities linked to healthy body development, including movement combined with music, in order to create a "multidimensional mental model of experience" which supports learning and retention (Conclusion). The authors cite Sylwester (1995).

Hannaford (1995) offers a neurophysiologist's position: Movement is crucial to learning. She links early vestibular development with movement as the first sensory system to mature. These then link with the brain's visual system and attention. Jensen (2005) offers research of the linkage of body and mind, how exercise affects cognition, and the importance of movement in play and physical education. He presents the evidence offered by neuroscience of the strong connections between physical education, movement and improved cognition: Movement strengthens learning, improves memory and enhances learner morale. Jensen offers anatomical and imaging evidence.

Social and emotional learning (SEL)

Benningfield, Potter and Bostic (2015) state the principle of SEL (Section 3.2.3) derived from neuroscientific research for educational practice: Social emotional learning and academic learning are linked. The human brain cannot fully dissociate cognitive from emotional events. Educational programming that recognizes the importance of social-emotional development also facilitates academic achievement (Abstract).

Immordino-Yang and Damasio (2007) explain the connection of cognition and emotion demonstrated by neurobiological evidence. Modern biology shows humans are “fundamentally emotional and social creatures” (p.116). Cognition and emotion are … two interrelated aspects of human functioning (p.125). Emotions comprise both cognitive and sensory processes (p.125). The aspects of cognition schools value: Learning, attention, memory, together with decision-making and social function, are deeply affected by emotional processes (p.115, p.125). Cognitive skills in schools (including language, reading, mathematics) are not detached from emotion and body, but “profoundly intertwined” (p.116). The relation between learning, emotion and body state “is interwoven with the notion of learning itself” (p.116). The authors provide a functional model of the neurological relationship of cognition and emotion, whose overlap is described as “emotional thought’ (p.126).

The connection of SEL, cognition and academic learning and its support from neurobiology is one aspect of SEL research and educational practice. There is a

broader neurological and developmental concern discussed at Section 3.2.3, and below at 5.2.4 and 5.2.5. How are the emotions of empathy, compassion, the desire to serve human beings and the universe at large, moral behaviour, and self-regulation developed? What is the role of the brain's emotional and executive functioning capacities? Immordino-Yang and Damasio (2007) propose there are neurological connections between emotion, decision-making, social functioning, and the "constructs" of morality (moral reasoning), creativity, and culture (p.115).

Cozolino (2014) sees neuroscience providing windows into a human "inner neural universe" and terms like "attachment, empathy, compassion, mindfulness" demonstrate deepening awareness of the "essential interdependence of brain and mind", of mind-body connectivity (Preface, pp.xi-xii). He explores the idea of a *social synapse* (sic) (pp.xiv-xv). The brain is a "highly specialized social organ" (pp.xvi-xvii). At its core, the brain has neural systems "organizing attachment, emotion, attunement, social communication" (p.xvii). The brain "evolved to function within a matrix of other brains" (p.3). "(I)ndividual *neurons or single brains do not exist in nature"* (sic) (p.4). *Relationships are our natural habitat* (sic) (p.4). This is the primary assumption of interpersonal neurobiology (p.xvii). "There is, however, no one module in the brain dedicated to social behaviour, rather, there are multiple sensory, motor, cognitive, and emotional processing streams" contributing to the development of social intelligence (p.4). "Our sense of reality is grounded in the experience of a separate self", but we are "embedded in relationships" (p.xiii). Cozolino stresses the importance of primary nurture: *Those who are nurtured best survive best* (sic) (p.7). "Caregiver nurturance sets us on a course of physical and

psychological health" (p.xviii).[163]

5.2.3 Connections of domains: Music, visual and creative arts

Music

Research in both laboratory and education environments demonstrates the neurological interconnectedness of music – listening, playing an instrument and singing - with language and number, social and emotional well-being, executive function, and with general brain function affected by injury and ageing. There is also theoretical and research interest in the place of music in human evolution, cultural differences, and whether there is an innate human music instinct. Only a small sample of the extensive research is offered here.

Trainor and her team at McMaster University (referred to at Section 2.5.2) are exploring the neurobiology of music - its origins, innateness and acquisition, the neural encoding and relationship of language and music, their related auditory structures, the rhythm (beat) of music, its social and emotional power. Trainor (2015) believes music is both an human evolutionary adaption and a cultural creation. She says humans have enhanced auditory-motor pathways enabling

[163] Other neurological perspectives with respect to SEL include: Brain development in adolescence influencing self-regulation and emotions (Steinberg, 2015); the impact of stress inhibiting learning (Hohnen and Murphy, 2016); the link of physiological arousal and emotion with attention and motivation (Posey, 2018); brain plasticity and social environments (Nelson, Kendall and Shields, 2014).

movement entrainment to music, which in turn affects social cohesion, and pathways enabling music to affect emotional reward centres in the brain (Abstract).

Fritz et al. (2013) explore the neural foundations ("the primitives") of both language and music as auditory structures and their underlying common and distinct mechanisms (pp.417-418). The authors say: "Infants are born unable to understand or speak a particular language" and "unable to understand or produce music. In both cases, language and music are acquired in an orderly sequence through everyday informal interaction with people in a cultural setting" (p.433). The authors ask: What is the nature of the complex relationship between language and music? How are individual primitives linked to others? Understanding this may lead to deeper understanding of intonation, cadence, rhythm, rhyme, child language development, cognitive operations common to both (p.417). One approach is a complex systems approach that sees music and language "linked in principle" (p.420) with shared attributes.[164]

Fritz et al. (2013) wish also to explore dance, song, poetry, and the ensemble and emotional aspects of musical experience. Speech and song are linked through the body's mechanisms for speech production (p.453). The emotional power of music is linked to the structure of the human ear and the way the brain receives information (Trainor, 2008, pp.598-9).

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[164] Other studies support a language-music association (Cohrdes, Grolig & Schroeder, 2018; Hutka, Biderman and Moreno, 2015).

Merchant, Grahn, Trainor, Rohrmeier and Fitch (2015) explore a neural perspective of rhythm (beat). The authors' position is that "humans possess an ability to perceive and synchronise movements to the beat in music" (Abstract). This ability emerges early in child development. It is a synchronous response ""during dancing and musical ensemble playing" (Introduction). "(H)umans do not need special training to perceive and motorically entrain to the beat in musical rhythms" (Introduction).

Cirelli, Trehub and Trainor (2018) explore rhythm and melody as social signals for infants. Typically "infants experience music through social interactions with others", such as singing and bouncing (Abstract). These multimodal interactions shape infant music perception but may also influence social cognition (group membership) and behaviour (Abstract, Introduction, Conclusions). These interactions are more powerful than playing recorded music (Conclusions, p.5).[165] Hannon and Trainor (2007) examined the actual physical effects on the brain of music acquisition and enculturation. They propose that formal musical training prompts brain domain-specific processes that affect the musical input that is most noticed, the amount of cortical tissue given to its processing, and brain domain-

[165] A previous study by Trainor and He (2013) concluded that infants have "some capacity to process the frequency, pitch, intensity, timbre, location and timing of sounds" early in their development and "to process aspects of musical structure", whereas "enculturation to the specific melodic, harmonic, and rhythmic structure of the music system" of the specific culture depends on considerable exposure to that system (Abstract).

general processes of “attention and executive functioning” (Abstract). This last phrase anticipates the discussion at 5.2.5.

The biology of auditory learning - the underlying mechanisms of the human brain to process sound - is also being explored by Kraus and her laboratory team at Northwestern University (Section 2.5.2). The team has particular interest in the neurodevelopment of children’s auditory systems, the impact of injury, autism and ageing on sound processing and the impact of music training on language development and reading (DeAngelis, 2018). DeAngelis (2018) quotes Kraus saying that music offers a “model for learning through sound” (p.3). It engages “our cognitive, sensory, motor and reward systems” (p.3).

DeAngelis (2018) sums Kraus’ work on rhythm and sound in this way. How people experience and process rhythm is fundamental to both speech and music. Children “who can synchronize to a beat have more precise neural responses to speech sounds” (Musical forays, para. 2). There are two kinds of rhythmic abilities: “Tapping along to a beat and remembering and reproducing rhythmic sequences” (ibid. para. 3). Individuals differ in how well they can perform each, and “these abilities appear to be linked to different brain capacities” and electrical signals (ibid. para. 4). In application Kraus’ team is looking at “how music training can improve

young people's ability to listen, read and process language", particularly in noisy background settings which affect auditory discrimination (ibid. paras. 5, 6).[166]

Kraus' laboratory core positions are provided in slide presentations. The music presentation (Brainvolts, 2020) says: "Making sense of sound engages multiple brain systems. … Music engages them all" (Slide 3). The systems for attention, memory, rhythm and neural encoding of sound "work together for listening and language" (Slide 4). Moreover, musicians "have enhanced neural encoding of music and speech" (Slide 6). "Playing music improves neural speech processing for reading" (Slide 7). Musicians' speech-sound processing builds up across the life-span (Slide 8). "High school music training alters brain development in at-risk adolescents" (Slide 9). A second Slideshow exploring the sound and biology of reading declares that reading depends on attention, phonological processing, speed and memory, vocabulary, and speech-in-noise perception (Slide 3). Kraus' laboratory studies the underlying biology (timing, timbre, stability), remediation, language skills in preschoolers and the language/rhythm connection (Slides 4-15).

Kraus (2011a, b) wants music education as a fundamental given for each child. She says music engages the human multi-sensory system and the auditory brain

[166] Kraus' research team works with children in early childhood, children at risk, adolescents, adults, schools and communities, in sport contexts, with brain injury and autism. The research from 1989 has found a fundamental relationship between rhythm and beat, speech, language sound processing and reading, and between musical training and the development of language skills (Brainvolts, 2020).

stem makes the connections. It doesn't seem to matter what musical instrument is learned or what music is listened to. Sounds are fully embodied. Playing an instrument involves motor development, rhythm and feeling. In a presentation at Stanford University, Kraus (2016) focuses on the link between poverty, involving learning deprivation and relatively deficient reading skills, and the capacity of music to transform this relationship. In consequence, she says, school practitioners come to her saying: "We know music makes kids learn better, stay out of jail, changes neighbourhoods", but why, how? "How do we demonstrate this?"

Other researchers who collaborate with Kraus include Limb and Iversen. Limb explores the brain imaging impact of playing and hearing jazz (Kraus and Limb, 2016; Limb and Braun, 2008). Limb says he can show brain activity specific to improvisation, including visual imagery while 'rapping'. Interestingly, the brain region associated with semantic cognitive activity is not involved. Limb, talking with Hadero (2015) says the area of the brain related to self-monitoring deactivates, in innovative activity such as improvising a jazz solo. He says the human brain has an innate creative capacity to process such complexity and to innovate. However, both the extended process of music creation and the intuitive evaluation of music (instrumental and song) are very difficult for science to measure.

Iversen (2015a) refers to the 'Simphony' project, studying the impact of music practice over time on young people's neurodevelopment. Iversen asserts music affects children's cognitive development and personal qualities such as confidence and optimism. The project explores how music training impacts development of

language, executive function, attention, and how these changes are grounded in changes in brain structure?. His studies, like Kraus', indicate the importance of rhythm and beat, which are central to how the human brain makes meaning from sound (Iversen, 2016). Iversen (2015b) refers to Limb's work and asks: What is going on in our brain when we make or listen to music? What if we knew how music affects particular brain areas?[167]

Collins (2014), in Australia, believes all humans are born musical. Music is the one activity that helps cognition, memory, learning language(s), complex problem-solving, executive function, emotional states. Collins says neuro-imaging shows music activates three areas (functions) of the brain at once: Motor, visual, and auditory. Music education could be the glue to support many educational issues – learning disability, physical coordination, mathematics. She wonders: What if every child had access to music from birth? Collins' research is focusing on language development and executive function, the two areas she says are the cornerstones of academic success. Musical activity is most beneficial in the first seven years of life. She extols the benefits, like Kraus, of learning an instrument for two years at least.[168]

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[167] The thesis research has explored theoretical and educational perspectives referring to brain studies with respect to music and human evolution, the power of music to elicit emotion and movement, music across cultures, and music creating new brain pathways. The references and detail do not impact the thesis argument and are not included.

[168] Collins learned to read after playing the clarinet.

Visual arts, creativity, the arts

Laboratory studies of the visual and artistic neurobiology of the human brain tend to be specialised: Human vision, its health and impairment, and more recently, creativity, the arts and neuroaesthetics. The discussion here provides examples of brain studies contributing to understanding art production and evaluation, drawing, viewing, and creativity, and studies of human blindness and aesthetics offering insight into the brain's visual biology and learning. It concludes with a summary position, influenced by such studies, of the role of the arts collectively in education and human development (Jensen, 2001).

Bolwerk, Mack-Andrick, Lang, Dorfler and Malhofner (2014) explored how visual art production and evaluation differentially affect brain connectivity. The authors say: "Visual art represents a powerful resource for mental and physical well-being" (Abstract). Their neural study found that visual art production improved functional connectivity in the brain in areas related to psychological resilience. Brooks (2017) discusses the study and queries why making art seemed to have more impact than appreciating it? She says the researchers are unsure but propose it is the combination of both motor and cognitive processing together with a "personal integrative experience" of each participant's (emotional) involvement in the creative activity (pp.3-4).

Bergado (2014) refers to a study from the University of Westminster suggesting art viewing can reduce high adult stress levels. He also refers to a study by Vartanian (2014) who draws conclusions similar to those of Bolwerk and his colleagues.

Viewing paintings engages areas of the brain involved with emotion (pleasure and reward) and contemplation.[169] Tucker (2012) refers to research into the location of aesthetic responses in brain activity, where connections are made between the visual object being viewed and emotional and motor responses in the parts of the viewers' bodies being visually represented by the artwork.

Chamberlain, McManus, Brunswick, Rankin, Riley and Kanai (2014) say that structural brain differences according to specific expertise have been demonstrated with respect to visual perception, spatial navigation, complex motor skills and musical ability. Their study explored apparent brain structures associated with representational skills in visual art – in this instance, drawing – and whether there would be any changes in brain structure between artists and non-artists through increasing representational skill. The study suggested that observational drawing relates to brain motor control and procedural memory control structures, whereas additional artistic training enhances visual imagery structures.

Sherman (2014) also discusses how the brain learns to draw, and what it is doing when drawing. Sherman says research has begun to show how viewing art evokes an empathic response in human brains and bodies echoing postures, pains. Producing art is however more powerful. He cites and quotes Likova (n.d) at the

[169] Burmark (2002) refers to brain research indicating "the apparent synergistic working of words, music, motion, emotion" (p.8). He refers to the "physiological basis of visual thinking" (p.10). Sylwester (1998) discusses motor skills and sensory motor aesthetics, emotion and attention. He refers to brain-muscle connections.

Smith-Kettlewell Institute, saying that producing art “engages the whole brain” (The brain learns to draw). Zambon (2013), referring to an Art Exhibition, quotes Tyler (also from the Smith-Kettlewell Institute), who offers the term “embodied cognition” to describe the way viewers participate in a painted scene (p.2).[170]

Likova studies the brain mechanisms of art and learning, vision impairment and rehabilitation, and the brain’s neuroplasticity (Likova, 2019). Likova (2012) concluded from a case study of a congenitally blind person who drew complex images, guided solely by tactile memory, that “drawing enhances cross-modal plasticity in the human brain”(Article title). “Drawing is an amazing process that requires precise orchestration of multiple brain mechanisms; (sic) perceptual processing, memory, precise motor planning and motor control, spatial transformations, emotions, and other diverse cognitive functions, are all involved” (Introduction).[171] “The present findings …. add … evidence against the view of exclusively sensory and unimodal primary cortices, … being consistent with the idea of a more distributed architecture” (p.19). These and earlier studies “propel the emerging re-conceptualization of brain architecture as highly interactive and capable of reorganization” (p.19).

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[170] Both Zambon and Sherman refer to the work of Likova. Zambon refers to Kraus’ music research. Sherman refers to both Limb (music) and Jung (arts).

[171] Likova (2012) says in contrast to other arts, like music, there have been few neuroimaging studies of visual art (Introduction). In this study, Likova assumes the human brain has a *visuo-spatial memory buffer* (sic) or “sketchpad” in the primary visual cortex that provides and allows retrieval of an accurate spatial representation. The explanation for the connectivity of this region is being reevaluated (pp.17-18).

An emerging field of research linking neuroscience and art is the field of neuroaesthetics. Zeki and associates at the University College of London provide extensive studies of the relationship of visual art to the functioning of the visual brain. Zeki (2014) says the primary research question presently is “to understand the neural mechanisms that allow all humans … to experience beauty” and make aesthetic judgements (The Experience of Beauty). He says different areas of the visual brain are specialised to process different attributes such as colour, motion and form. Different visual characteristics may activate aesthetic emotion in that visual domain – such as kinetic stimuli. There is however, he says, a simple neurobiological fact that whenever an individual experiences beauty – whether visual, musical, moral, or mathematical – activity occurs in a part of the emotional brain known as the medial orbitofrontal cortex.[172] Zeki discusses the beauty of mathematical formulations here and in Zeki, Romaya, Benincasa and Atiyah (2014). He says the experience of mathematical beauty is comparable to that derived from the greatest art.

The Introductory Session of a Salzburg Global Seminar (Ehrlich, 2015) on the neuroscience of art was “inspired by … neuroaesthetics” which asks: “What happens in the brain when we experience art?” (p.7) The seminar explored the

[172] Zeki (2014, p.5) asks a question relevant to the thesis discussion in Chapter Six. “(T)o what extent is the structured order, or the ordered structure, of the Universe in which we have evolved reflected in the organization of our brains and to what extent is the experience of beauty a pointer to that structure?”

sources (and processes) of creativity and innovation.[173] The initial premise was that the human brain "is a continuous network of information processing" (p.6). From the "discontinuity" of experience, the brain somehow provides "coherent wholeness (p.6). Dietrich, a speaker at the Seminar, is studying creativity, but looking for brain mechanisms rather than locations. He "suspects that creativity is a distributed network, throughout different areas of the brain" (p.13).

Chatterjee (2011) offers a framework to guide research in what he says is the nascent field of neuroaesthetics. He uses the term 'aesthetics' "to encompass the perception, production, and response to art, and the scenes and objects that "evoke a response" (p.1. He says the "first wave" of neuroscientific writings on aesthetics "points to parallels between art and the organizational principles of the brain" (p.1). He cites Zeki (1999). Like Zeki, he considers beauty as integral to a concept of aesthetics (p.4, p.6). He says the few studies that "have used art to examine the neural bases of aesthetics" have found brain activity in different areas according to respondent preference and the source of the visual stimuli (p.4). "Artists use … combinatorial properties to produce specific aesthetic effects" (p.2).

Chatterjee (2011) offers two principles as the basis for his proposed framework for

[173] Charles Limb, referred to above, co-chaired the session. Limb believes the brain is "hard-wired" for artistic creativity, necessary to human survival (p.9). He sees music as mathematical (p.10). The report offers this premise to the Seminar: Recent collaborative neuroscientific and psychological studies show a "basic fact of human biology: all (sic) behaviour," including "creativity, can be linked to brain function" (Preface, p.5).

neuroaesthetic research. Visual aesthetics, like vision generally, “has multiple components” (p.2). Elements of vision “are processed in different parts of the brain” (p.2). These are segregated and grouped together “to form coherent regions“ (p.2). “[A]n aesthetic experience emerges from a combination of responses to different components of a visual object” (p.2). These include both perceptual experience and emotional response (p.8).[174]

Jung, Mead, Carrasco and Flores (2013) explore the “vast construct” of creativity and how “creative cognition” maps on the human brain (Abstract). The authors note there has been a long effort to localize creative processes.[175] They say “These notions are all unlikely, as the brain does not carry out cognitive function by means of neuronal-axonal activity in discrete zones, lobes or even hemispheres” (What does it all mean?). Rather the brain appears to function in a manner of “networks” (sic) or hubs, which possess “disproportionately large numbers of connections to other brain regions” (ibid.). The authors cite Sporns and associates (2007), Buckner and associates (2009), and Bressier and Menon (2010). The brain is organised in such a way that it functions and learns best “with heteromodal association cortices binding together sensory information converging from multiple sources” Ibid). The authors cite Mesulam, (1998).

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[174] Chatterjee (2011) cites research (Livingstone 2002; Livingstone and Conway, 2007) which focused on how artists make use of complex interactions between different components of vision when they paint, such as contrast, motion, location, form and colour.

[175] They hypothesise a brain “default-mode network (DMN)” serving creative cognition.

Jensen (2001) provides a summary overview. He discusses visual arts in his exposition of the interactive relationship of the arts and the human brain, and their influence on learning. Visual arts are not only visual but spatial (p.51). The total package of all visual arts is a complex brain process (p.51). Seeing requires both sides of the brain and multiple areas of brain processing (pp.54-7). Visual arts involve cognition, emotion, language, memory, reflective thinking, and motivation (pp.58-63).

Jensen (2001) says all the arts (musical, visual and kinaesthetic) “promote the development of valuable human neurobiological systems” (p.2). “The systems they nourish, which include our integrated sensory, attentional, cognitive, emotional, and motor capacities, are … the driving forces behind all learning” (p.2). The arts “provide learners with opportunities to simultaneously develop and mature multiple brain systems” (p.2). He says that brain research in each of the three arts subdisciplines have located “anatomical structures dedicated to processing specific art experiences” (p.4), but his discussion of each makes clear that most areas (structures) of the human brain are involved in each art activity and act in an interconnected way.

Jensen (2001) wants to see all arts integrated “as a major discipline” in the practice of education (Chapter One). Jensen believes the arts “are what makes us most human, most complete as people”: They “contribute to our growth as human beings” (p.vii). They are a universal language to represent the world (p.49). As a discipline, they contribute to the “survival of the species” (p.4). Jensen wants

“schools to foster ethical, fair-minded, disciplined, cooperative, thoughtful, considerate, problem-solving, creative citizens” (p.v). He says the arts do this.

5.2.4 Spirituality, and nature affinity

Each of the domains presented so far in this Chapter has both a substantive body of associated neurobiological research, and a direct equivalent in national and international school curricula.[176] Spirituality and affinity with nature have an emerging body of neurobiological (and psychological) research, but do not have the same universal articulation in schooling aims and curricula. Again the purpose of the discussion here is to establish a neurological basis for spirituality and nature affinity as necessary domains of a concept of holistic learning – of ‘learning to be’ – contributing to human completeness.

Spirituality

Spirituality has been referred to in the thesis as an intelligence and a human capacity (Chapter Two, Sections 2.3, 2.4). It is possibly innate in each person (Wigglesworth, 2015, Section 2.5.1). Schools, pedagogies and some national education statements affirm spiritual ideology and ontology in their aims (Chapter One, Sections 1.2, 1.4.2, 1.5.1, 1.5.2, 1.6). Spirituality is an aspect of

[176] Language and number are universal, the arts widespread. Movement and social-emotional learning are both included in the Australian Curriculum (ACARA, 2020). OECD (2019b) provided an international report on physical and health education in school systems from 18 countries. The education goals include physical, psychological, affective, social and cognitive outcomes (Chapter Three).

transformational learning (Mezirow, 2009, p.98, Section 3.2.1). It is a domain of a concept of whole child (Section 4.1) and an element of a holistic approach to children and learning (Greener, 2002, Higgins, 2012, Section 4.2.3).

The importance to the thesis of spirituality as a domain of human nature and learning is indicated by Walach (2011), who defines spirituality as “an experiential realisation of connectedness with a reality beyond the immediate goals of the individual” (p.6). ‘It gives rise to a holistic type of knowing that manifests cognitively, emotionally and motivationally” (p.6). It is an effort to understand the general principles or structure of the world through inner experience (p.1). To be – *esse* (sic) – is the “totality of being” (p.7). He cites Eckhart (1964, p.38). He says *‘Connectedness’ (sic*) refers to the fact that every individual goal and every individual life can only be realised within the whole context of our world, in relation to others and to this world (pp.6-7).

Neurobiological research exploring a spiritual function of the human brain examines its location and neural correlates (Giordano & Kohls, 2008; Johnstone, Bodling, Cohen, Christ, & Wegrzyn, 2012; Miller, et al., 2019; Mohandas, 2008), spirituality and consciousness (Fenwick, 2004; Giordano and Engebretson, 2006; Wallach, Schmidt, & Jonas, 2011), spiritual practices and experiences (Beauregard, 2011; Fenwick, 2003, 2011; Jastrzebski, 2018; Mohandas, 2008; Newberg, 2014), spirituality in medical contexts (Fenwick, 2003, 2004, 2011; Giordano and Engebretson, 2006), selflessness and transcendence (Fenwick, 2011; Johnstone, Bodling, Cohen, Christ, & Wegrzyn, 2012; Johnstone, Cohen,

Konopacki, & Ghan, 2016), and the relationship of spirituality and science (Fenwick, 2004; Newberg & Monti, 2011; Walach, Schmidt and Jonas (2011).

The key points of discussion are again: Research evidence for an apparent locality of spirituality in the human brain, and any interconnection or networking of brain activity when it is operating 'spiritually'. The consensus emerging across the diverse studies above is that there is a neurological basis for spirituality. The parietal cortex (left inferior parietal lobule and right parietal lobe) and frontal lobe seem to be primary regions of the brain processing spiritual experiences. The parietal cortex is the area of the human brain associated with awareness of self and others, and attention. Brain activity is however distributed across a network according to the spiritual practice (religious or otherwise) – meditation, praying, singing, or dying. Brain activity varies according to whether the spiritual experiences are "personally meaningful" or "stressful and neutral-relaxing" (Fenwick, 2011; Miller, et al., 2019, Abstract).

Fenwick (2011) examines research of cerebral structures activated during spiritual experiences. What emerges from medical studies is the positive impact of "wide feelings of mystical experience and the practice of meditation" (p.1) on the immune system, to which the brain is particularly sensitive (p.3), and on personal health and well-being. Fenwick (2011) refers to a number of studies of brain behaviour in

the practice of 'mindfulness' and meditation.[177] The brain areas involved vary with different studies, but there is a consistent connection of meditative practice with emotion. Fenwick concludes that a network of brain areas is involved in the practice of meditation – either calming or provoking brain activity according to whether the meditation is prompting mindfulness or compassion. Fenwick cautions that brain studies provide "correlates" of the subjective experiences being studied – they are not "causative" (p.1).[178]

The work of Johnstone and his associates (2012, 2016) is of particular relevance to the thesis discussion. They refer to their own and other studies demonstrating brain activity associated with a sense of spiritual transcendence. Johnstone, Bodling, Cohen, Christ, and Wegrzyn (2012) say "Spiritual transcendence (i.e. (sic) emotional connection with the numinous/mystical) is a specific spiritual dimension … primarily related to increased selflessness" (Abstract). "[A] decreased focus on the self" is "associated with decreased right parietal lobe (RPL) functioning" (Abstract). The existence of "spiritual transcendence" (sic) is a "psychometrically

[177] Newberg (2014) says many studies evaluate meditation practices, such as secular mindfulness programs, that are not specifically spiritual, but these studies should inform studies of spiritual practices (Introduction).

[178] Fenwick (2011, p.4) cites a review study by Ives-Deliperi and associates (2010) of the neural substrates of 'mindfulness' which showed a network of brain areas responding to meditation with decreased activity in areas associated with cognitive, emotional, self-referential and executive brain functions.

valid construct" (Johnstone, Cohen, Konopacki and Ghan, 2016, Abstract).[179] Transcendence is conceived in similar terms of brain structures, and connectedness beyond individuality, by Walach (2011, p.7) and Fenwick, 2011, p.5). Jastrzebski (2018) however wants recognition of the "limits of neuroscience in explaining the human relationship to transcendence" (Abstract).

Walach, Schmidt and Jonas (2011) provide studies of consciousness and spirituality. Forman (2011) says the nature of consciousness is one of "the intractable questions" of 21st century science and humanities (p.279). The new hypothesis of consciousness is that it is a fundamental element of reality, it is mediated by the brain but independent of it. It is, in itself, unobservable (p.279).[180] However, "the ability to be conscious of something larger may be the fundamental nature that distinguishes the human being" (p.279, 285).

Affinity with natural environments

Two of the studies above (Fenwick, 2011, and Miller, et al., 2019), refer to responses to nature – the natural environment – in their discussion of spirituality. Malony (2010) includes aesthetic appreciation and nature mysticism in his

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[179] The authors say the neurologic foundations of spiritual experiences remain ambiguous due to the neurological complexity of such experiences and the lack of a clear taxonomy of "spiritual experiences" (2016, Abstract). Jastrzebski (2018) cautions for recognition of the limits of neuroscience to explain transcendence.

[180] Fenwick (2004) says neuroscience doesn't know what consciousness is (p.7). He reports on research into consciousness/unconsciousness in near death experiences.

definitions of spirituality which he regards as a capacity of humanness (p.37). Spiritual capacity needs to be awakened “to find meaning and wholeness” (p.21). L. Miller (2012) declares: The human spirit “connects us with the greater spirit or consciousness around us” (pp.1-2). Rapport (2010) says: “Nature, in an absolute sense, is the whole in which all dwells” (p.11).

Neurological research exploring brain activity when people experience natural environments is presently emergent. The research to date suggests environments generally – natural, built, social and embryonic - influence the human brain, behaviour and health (Berman, Hayes and Krpan, 2015; Tost, Champagne and Meyer-Lindenberg, 2015; Wolfe & Lindeborg, 2018). Chen, He and Yu (2015) report a study comparing brain responses of students sitting in natural and built environments. They found that students closing their eyes in both environments had “stronger or deeper functional connectivity among different brain regions” than students with their eyes open. Students walking in natural environments with their eyes open had “stronger functional connectivity than in highway environments” (Abstract).

The more substantial body of scholarly work on human responses to natural and other environments presently derives from theory such as the ‘Biophilia Hypothesis’ (Kellert & Wilson, 1993, cited in Section 2.3.1) and ‘Biophilic Design’ (Salingaros & Masden, 2008), and from psychological and health studies (Braud, 1992; Cervinka, Roderer & Hesler (2012); Kals, Schumacher & Montada, 1999; Nisbet, Zelenski & Murphy, 2009; The Institute of Noetic Sciences, 2016). The

critical point emerging is that there is a negative impact on humanity as a whole and the way nature is treated when the sense of interconnection with nature is lost or diminished (Louv, 2011, cited in Section 2.3.1).

5.2.5 Empathy, executive function, self-regulation, moral behaviour

The remaining domain of human nature and holistic learning to be reviewed from the perspective of neurobiological research is human morality and ethical behaviour. The issue for the thesis argument is that the belief in or principle of (all) human beings having an educable capacity for judgement and decision-making that takes into account their own thinking and behaviour, other beings, and the natural environment, can be demonstrated by neurobiological research.

The exploration here pursues three concepts introduced earlier in the thesis: A human capacity for empathy and compassion (Section 2.3.1 and Section 3.2.3), a capacity for individual decision-making and self-regulation (Section 2.2), and a capacity for moral and ethical conduct (Section 2.4).

Empathy and compassion

‘Empathy’ is the capacity for responding to other beings and their feelings, and to respond spiritually to something larger than individual self including the natural world. Fenwick (2011) refers to a study by Heine and Singer (2008) affirming “converging evidence” that feeling with the pain of another person “activates part of the neuronal pain network of the empathiser” (p.3). The authors identify “two dimensions to empathy”: Cognitive (understanding the intentions, desires and

beliefs of another), and feeling (sharing another's emotions or sensory states (p.3). Imaging results show cognitive understanding stimulates the left temporal pole, sulcus and parietal junction. Empathic feeling activates the anterior cingulate cortex, anterior insular and secondary somatosensory cortex (p.3). It also stimulates "reward circuits" in the empathic person (p.4).

That empathy involves two neural processes (cognitive and affective) is also argued by Decety and Hodges (2006, p.103), Marsh (2018, p.110), Rameson and Lieberman (2009, p.94), Watt (2007, p.119), and Zaki and Oschner (2012, p.675). The nature of the neural and functional relationship is not agreed. Decety and Hodges (2006) say no single neural/cognitive module for empathy exists. Zaki and Oschner (2012) aver that recent research shows the two processes of sharing others' internal states and explicitly considering them, overlap (pp.675-8).

Iacoboni (2009) discusses laboratory work on mirror neurons, imitation and empathy. He says studies show "that imitation and mimicry … facilitate empathy" (Abstract). Iacoboni (2007) says the "tendency to imitate others in social situations correlates with the tendency to be empathic" (p.445). The "neural architecture for imitation comprises three major cortical systems" which link with the neural (limbic) system for emotion (pp.445-6). Mirror neurons "represent a neural system for coding others' intentions" (p.447). The neural pattern "seems to reflect more a holistic stance" towards contexts, actions and intentions, "which assumes the nature of any given element is determined only by the 'whole' (sic)" rather than that elements of the world are processed independently (p.447).

A study at the Max Planck Institute by Silani, Lamm, Ruff, and Singer (2013) identified an innate tendency for human beings to be emotionally egocentric, but "the right supramarginal gyrus" of the brain can recognise a lack of empathy and can correct it. If this area does not function properly, the capacity for empathy is limited. Although "shared neural networks may underlie emotional understanding in some situations", an "additional mechanism" is also "needed to avoid biased social judgments in other situations (Abstract). Singer and Bolz (2013)[181] distinguish empathy – the recognition of others' emotions - from compassion, which involves feeling and caring for the pain of others. The two concepts involve different biological systems and neuronal networks. The authors say that compassion can be trained, reducing stress, and improving mental and physical health and social closeness. Bergland (2013), reporting on Singer's work, wonders if compassion can be trained by meditation, physical activity, and volunteering (p.4).

Executive function and self-regulation

'Executive functioning' is "*an umbrella term for the neurologically-based skills involving mental control and self-regulation*" (sic) (Cooper-Kahn & Dietzel (2008, p.9).[182] Neural executive processes are located in the frontal cortex, and direct brain activity in other functional regions (Krapes-Mackinnon, 2011, p.1, Sousa,

[181] Singer says she hopes the research will "support the development of a more caring and sustainable society which recognizes the importance of secular ethics and the interdependence of all beings" (Institute Introduction, Para.1).

[182] Cooper-Kahn and Dietzel (2008) provide a psychologists' research based list of executive functions.

2011). The Center on the Developing Child (2019) says “Executive function and self-regulation skills depend on three types of brain function: Working memory, mental flexibility, and self-control.” These three functions are “highly interrelated” and required to work “in coordination”. Ryan and Deci (2006) argue similarly: The capacity for autonomy (self-regulation) requires coordination of a number of brain structures and functions involving regulation, motivation, feelings and contextual information: Executive functions must be selective and informed by affective and memory related processes (p.1565).

A neural network of brain processes is also required for executive attention and self-awareness. Posner and Patoine (2009) refer to the “executive attention” neural network of the brain which controls emotions and helps focus thoughts and is “critical to social and academic success throughout childhood”, including empathy and self-control (pp.4-5). They show how the arts support the development of executive attention. Riehl (2012) discusses a recent University of Iowa study showing that self-awareness involves “a complex diffuse patchwork of brain pathways” (Article subtitle). It is not “localized (sic) to a single area of the brain” (para. 5). It emerges from distributed interactions.

The theoretical perspective of self-regulation of most relevance to the thesis is that offered by Shanker (n.d. c. 2012). Self-regulation “is a key factor in wellbeing, learning and development” (p.1). It is the ability to manage energy states, emotion, behaviours and attention in socially acceptable ways for positive ends (p.1). Shanker conceives five domains of self-regulation as: Biological, emotional,

cognitive, social and moral (empathy and values). Shanker (2018) says the domains function in a dynamic system, an integrated web. He comments the domains have similarities “to the holistic worldview of indigenous cultures” (p.4). They reflect the interconnectedness of social, emotional, mental and physical well-being of people. Self-regulation impacts “across the lifespan” (p.4).

Morality

Neuroscientific research of human morality[183] is recent “with the first brain imaging studies of moral development” undertaken in 2001 (Sinnot-Armstrong, 2008, Abstract). The “neural underpinnings of morality are not yet well understood” (Pascual, Rodrigues & Gallardo-Pujol, 2013, Abstract). “The identification of the core features of morality and moral-related processes is needed” (ibid). However, human brains are “wired for morality” (Decety & Cowell, 2016; Tancredi, 2005). “A distinguishing characteristic of human beings is that most of us are moral agents” with the capacity to make moral judgments and act accordingly (Liao, 2016, p.1).

“Morality is supported not by a single brain circuitry or structure, but by several circuits overlapping with other complex processes” regulating other behaviours (Pascual, Rodrigues and Gallardo-Pujol, 2013, Abstract, Conclusion). Research has “begun to reveal the distributed neural networks which interact to implement

[183] The neuroscience of morality is attracting collaborative research in philosophy and psychology (Churchland, 2019; Liao, 2016; Pascual, Rodrigues & Gallardo-Pujol, 2013; Sinnot-Armstrong, 2008; Yoder & Decety, 2017; Will & Klapwijk, 2014).

moral judgment and social decision-making" (Yoder and Decety, 2017, Abstract). Liao (2016) cites Moll (2005, p.799) that a "remarkably consistent network of brain regions is involved in moral cognition" (p.4). Brain regions involved include the orbital and ventromedial prefrontal cortices, the dorsolateral prefrontal cortex and the anterior cingulate cortex. Other regions seem to play a more complementary role (Pascual, Rodrigues & Gallardo-Pujol, 2013, pp.2-4).

Like empathy, both cognition and emotion are involved in moral judgements and decision making (Liao, 2016; Pascual, Rodrigues & Gallardo-Pujol, 2013; Will & Klapwijk, 2014;). Neural systems underlie both "automatic, intuitive and emotional processes, and controlled, deliberative, and cognitive processes" (Will and Klapwijk, 2014, p.10459). The human capacity for moral intuitions, empathy and decision making developed through biological evolution (Churchland, 2019).

Activation of brain networks involved in moral feelings, empathy, judgments and decision-making may nonetheless differ between people, according to individual variance in sense of justice and whether moral action is involved (Will and Klapwijk, 2014, pp.10459-10461). The authors are uncertain of the role of empathy in judging moral actions as right or wrong, but it may still be crucial as a motivator for moral action. Baggini (2019) is adamant that empathy alone is insufficient as a key "to a better world". Both head and heart are needed are needed in moral decision making.

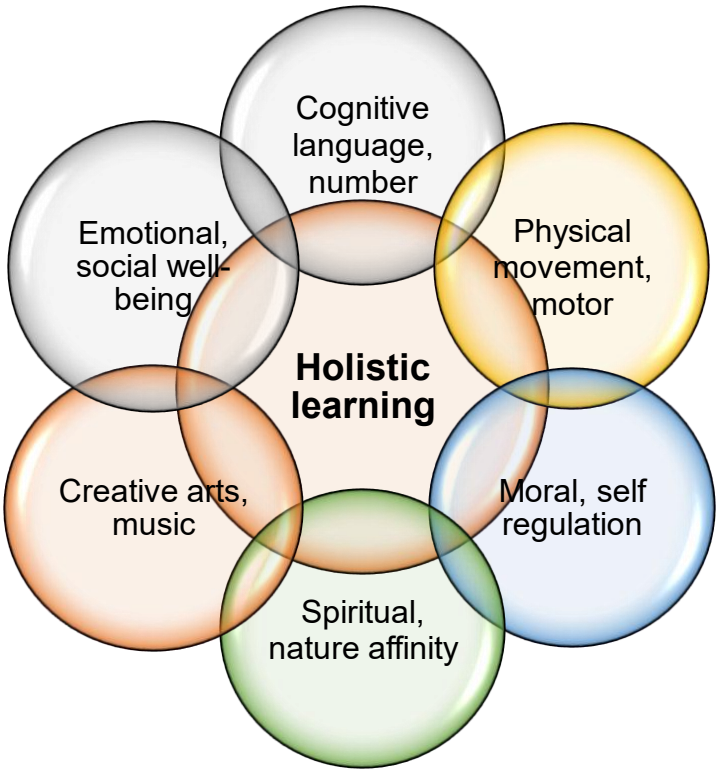
Interim conclusion: Section 5.2

The Section has pursued these objectives:

- To articulate domains of a holistic concept of learning that correspond to domains of a holistic concept of child and human being;
- To show that in each domain of learning, the human brain operates holistically, as a network, involving other domains;
- To show that a concept of holistic learning, has the potential to change the perception of school curriculum as discrete subjects to the perception that each domain of learning is interrelated to others, and needs to be integrated with them for holistic learning to occur.

A model of holistic learning conceived in this way is presented below at Figure 11.

Figure 11 A model for holistic learning



5.3 Examples of holistic learning theory and practice

The intent here is to provide examples of educational theory and practice where learning domains, corresponding to those presented in Section 5.2, are conceived as interconnected, and learning activities are conceived as integrated.

Language and number

Reid and Andrews (2016) describe an Australian longitudinal literacy and numeracy research study which will contribute to educators' and caregivers' understanding of early numeracy development, and consequentially children's mathematical development in school. The authors refer to the activities used in early childhood education contexts to promote understanding of numeracy: Counting, reading and writing numbers. These include counting aloud with gestures and standing in a circle, songs and rhymes, visual number cards, counters, collecting objects, bingo boards, sharing with others, drawing, ordering, pouring, skittles, and stories (pp.5-9). Burke, Sharp and Field (2018) explore pedagogical connections between English language and critical numeracy. The authors assume that rather than treating literacy and numeracy as separate domains, they are relevant to all learning areas of the Australian curriculum and the general capabilities being emphasised.

Movement

Pica (2008a), and Iverson (2010), wish to encourage linkage between movement and language development. Pica (2008a) says "Young people need to physically experience concepts" in order to grasp them, as "recent brain research" confirms

(para. 2). “Research shows that movement is the young child’s preferred mode of learning” (para. 10). Current “approaches to children’s emerging literacy recognize that listening, speaking, reading, and writing overlap and interrelate, each contributing to the growth of others” (para. 6). Pica cites Block (2001, pp.41, 44). Sequencing movement “accesses many learning modes: visual (sic), auditory, tactile, kinaesthetic, rhythmic, vocal, mnemonic … and creative” (para. 9). Rhythm is an essential part of movement and language arts (para. 8).

Pica (2008b) wants movement used, not only to enhance literacy, but across the curriculum to benefit all learning. Lloyd, Eather and Riley (2018) in Australia observe that physical education (PE) programs can impact children’s physical, affective, social and cognitive development. They see links being made to mathematics in PE programs, improving student engagement and numeracy.

Reifman (2013) incorporates elements of movement, music and story-telling in his instructional practices for language arts. He believes students are emotionally involved in the activities, and there is observable difference in their self-esteem, enthusiasm for learning and ‘connectedness’ with each other. Archer (2015) wants to strengthen the mind-body connection by teaching children yoga, breathing, concentration, sense-awareness, to reduce stress, express emotion, experience calm, improve self-awareness and self-regulation. This approach is currently known as teaching ‘mindfulness’.

Dance is a special form of movement, associated with posture, balance,

coordination, and spatial awareness, and with music, rhythm, emotion and artistic performance. Zahrobsky and Covino (2019) advocate dance to support learning. The authors say that each element of modern dance provides avenues for exploration, self-expression, easing of stress, and opportunity to communicate learning in ways other than words and drawing. The authors have provided such links across history, religion, and Latin, with dance promoting engagement, understanding, deep learning, memory and student agency. Roy, Baker and Hamilton (2012) discuss Australian and NZ arts education. They say that dance means to explore the “world with whole bodies” and develop motor skills (p.61). They quote a Hopi Indian saying: “To watch us dance is to hear our hearts speak” (p.61).

Social and emotional learning

Zins, Weissberg, Wang and Walberg (2004) collate integrative, holistic perspectives of social and emotional learning for school practice. The authors believe schools will be most successful when academic, social and emotional learning is integrated (p.3, p.5). Learning is a “holistic process” involving emotional and social outcomes with increased personal responsibility (p.37). Current integrative research is “based on the growing recognition that meaningful, sustained learning is a whole person phenomenon” (p.24).

Payton et al., (2008) report on research into the impact of programs promoting social and emotional skills on children from early childhood to Year 8. The large number of studies involving over 300000 children showed that SEL programs

benefited children with and without behavioural and emotional problems and children from a wide diversity of environments. “SEL programs improved students’ social-emotional skills, attitudes about self and others, connection to school, … social behavior, and academic performance” (Abstract).[184]

Jones et al., (2017) investigated the components (skills, instructional practices, program features and implementation challenges) of 25 evidence-based school and out of school SEL programs that produce positive outcomes for students – improved behaviour and mental health and academic achievement. Some programs target emotion regulation, others target executive function and character traits (p.7). Their study divided core SEL skills into three domains: Cognitive regulation, emotional processes and social/interpersonal skills (p.12). Included in these are character and mindset (p.15, p.17). They identify ‘context’ as one of four key areas affecting SEL: Skills, context, development and outcomes. Child development occurs “in a nested and interactive set of contexts” (p.13). They provide the key features of effective SEL programs in a model (p.22).

Music

Harman (2008) believes brain research and her own practical experience both demonstrate how music and movement support language development in young children. She believes in the value of pre/post-natal song, and of young children hearing music from many countries using different languages. Sounds are stored in

[184] See also Durlak, Weissberg, Dymnicki, Taylor & Schellinger (2011).

the brain for later use. Learning rhythms and beat in early childhood is also significant to language development: The more senses involved in any activity, the better the learning. Harman refers to the use of drama, a recording studio, and making a cover design to send home.

The Department for Education in the UK (2011) developed a national plan to 2020 for music education in and out of schools, in local area hubs. The Department sees “great music education” as “a partnership” of classroom and specialist teachers, performers, community organisations and parents (p.3, p.13). All children should participate in the opportunity to learn an instrument, to make music with others, to sing, and to progress across all age groups (p.7, p.9). The Plan sees the value of music in enjoyment, as a social benefit, and lifelong activity (p.9). Singing particularly improves learning and builds stronger communities (p.11).[185] The Plan refers to particular projects in deprived socioeconomic areas where children have been given an intensive music experience over a two and a half year period (p.19). Students are showing clear improvements in attitude, behaviour and attainment. Music engages students in their learning (p.20).

Visual and creative arts

‘Arts integration’ is a “research-based curricular strategy” in use in the USA for 30

[185] de Jong (2019) and Howard (2014) provide personal and research experience of the impact of singing and music. Gabbard and Rodrigues (2008) advocate learning an instrument for integrating movement, visual and auditory skills.”

years (Institute for Arts Integration and Steam, 2020). Integrating the arts into other curriculum is “the connective pathway toward reaching and teaching every child” (ibid). Ross (2008) refers to 70 years of research showing how the arts benefit students. “When the arts are integrated into core subject classrooms, teachers can present complex lessons that bridge multiple subject areas and encourage critical thinking skills” (Abstract). Greenfader, VanAmburg and Brouilette (2017) argue, for example, that “well-designed arts integration can assist the foundation literacy skills of linguistically diverse students (Abstract).[186] Arts need to be seen not (only) as instrumental to other learning, but as having intrinsic value to human learning {Goodwin & Hubler, 2019}.

Various studies by John Hopkins University (JHU) report on specific programs of arts integration in schools (Hardiman, Mahinda, Carran & Shelton, 2019; Tantibanchachai, 2019). These include rapping, dancing and drawing in science lessons where the researchers are particularly interested in the impact of improved content retention. The report on Margaret Brent School (John Hopkins School of Education, 2018a) refers to a partnership initiative with ten local neighbourhoods. Hardiman has developed a research based teaching model for arts integration which follows guidelines for “whole child” (sic) educational policy – “nurturing empathy, global understanding, and arts exploration” (John Hopkins School of Education, 2018b, Para 7).

[186] Refer also to Duma and Silverstein (2019).

Dickinson (2005) researches arts education and its contribution to learning. She provides “a synthesis of research”, with particular reference to Seattle schools where the arts are integrated across the curriculum as well as being taught as separate subjects (p.2, p.5). The arts yield distinctive understanding and skills and kinds of empathy different from other knowledge (p.2). “The arts provide the means for the human brain to function at its highest capacities” (p.6). Dickinson gives examples of drawing and reading, visual design of drama scenes, posters and historical timeline charts.

Spirituality and nature affinity

There are still challenges as to how to address “student spiritual well-being in a secular education setting”, even if is part of a state education framework (Schwebel, 2018, Abstract). Zakrzewski (2013) offers an approach derived from an international study by the Search Institute (2003-2009), of inner and outward personal awareness and interconnection.[187] Assuming “spirituality is indeed a universal developmental process” (paras. 6, 14), Zakrzewski sees teachers who provide experiences of awe, teach prosocial skills including compassion and empathy, relate classes to students’ lives to cultivate meaning and purpose, and incorporate service into the curriculum, as all encouraging spiritual development.

Awareness of the natural environment is encouraged by individual schools such as the Green Schools of Bali and NZ, The New Forest Small School in New

[187] Zakrzewski (2013) refers also to the Passageworks Program of Rachael Kessler.

Hampshire, and Ngaanyatjarra Lands School in Australia. The Children and Nature Network (C&NN) in the USA wish to build a “world in which children play, learn and grow with nature in their everyday lives” (2020, Vision). Kellert (2009) says “theory and evidence … support the notion that humans possess a biological need to affiliate with natural systems and processes … and this relationship is critical to children’s health” (p.1). “[O]ur physical, emotional and intellectual fitness” relies on “a vast matrix of connections to natural systems … particularly during childhood” (p.2). “A child’s optimal development” relies on “beneficial interactions with the natural world” (p.2). The Child and Nature Alliance of Canada (2020) offers a similar approach.

Morality

Barnwell (2016), a teacher of English in the USA, explores moral issues with his students, commenting that time and standards pressures inhibit what he sees as a “pressing need to integrate elements of character education” into public school curriculum (para. 10). He thinks “the humanity of students” is being neglected (final para.). He gives an example of a Pittsbugh mathematics teacher whose classes grow and distribute hydroponic window farms to the local community. He cites Borba (2017): “[E]mpathy is crucial to developing moral identity” (para. 11).

Meindl, Quirk and Graham (2018) accept the concern (p.3). They conducted a world survey of social scientists to explore “the current state of moral education” and of “recent studies promising behaviour change techniques” applying “to school-based moral education” (Abstract). Their “review suggests that the most

efficient practices for cultivating students' morality might be simply developing caring relationships and fostering a strong school community" (p.5). They recommend story-telling and a limited explicit focus on a few 'master' virtues such as self-control and humility as effective teaching practices (p.7).

Cam (2012) provides an array of activities for teachers to apply across subject areas throughout all stages of Australian schooling (Overview). Curko et al., (ETHIKA, 2018) provide a curriculum outline for ethics and values education in six European countries.[188] Among the methodologies are "holistic ethical learning" workshops (pp.25-30). Early Childhood programs in particular are designed holistically to support children's "cognitive, physical, social and emotional development" (p.21). The authors offer four curriculum models (pp.12-14). The third model (citing Singer, 1981, 2011), situates the individual in the centre of widening ethical concerns embracing domains of society, global and future concerns, and nature and the cosmos.

Conclusion

The vision of Faure and UNESCO (1972) for the world of education was conceived in terms of 'learning to be'. This Chapter has conceived 'learning to be' in terms of holistic learning – cognitive, physical, social-emotional, aesthetic, spiritual and

[188] Values education and values in education are not discussed in the thesis. Discussions may be found in Bantock (1965); Halstead & Taylor (1996); Hill (1991); Lovat, Toomey, Clement, Crotty, & Nielsen, (2009); Stephenson, Ling, Burman & Cooper (1998).

moral learning - where the domains of learning are interconnected. The domains overlay and directly correspond to the domains of human nature articulated in Chapter Four.

The Chapter has explored theory, laboratory research and educational practice to demonstrate the consonance of voices conceiving human learning as naturally 'holistic' – as holistic in principle. It offers the second part of the three part paradigm of the holistic principle proposed by the thesis to address the challenge of educating for humanity. The critical concept here is that educators perceive learning as necessarily holistic and frame their view of children, curriculum, and pedagogy accordingly. Only such a concept has the integrated potential to support 'learning to be' human.

CHAPTER SIX Whole world: Holistic principle (3)

Introduction

This Chapter completes the response of the thesis to the proposition of UNESCO and Faure (1972) of an ultimate aim “for the world of education today and tomorrow” (Title page), conceived in terms of human completeness and world participation. To educate for humanity, the thesis offers a holistic paradigm conceived in terms of whole child, holistic learning, and whole world.

Two elements of the paradigm have been articulated in Chapters Four and Five:

- A concept of ‘whole child’, conceived in terms of interconnected psychological and physiological domains of mind and body for learning and development: The thesis proposition for ‘complete man’
- A concept of ‘holistic learning’, conceived in terms of the same interconnected psychological and physiological domains, where all human learning stimulates and seems to occur through a neurological network of brain and body: The thesis proposition for ‘learning to be’

This Chapter is concerned with a concept of ‘whole world’.

A concept of ‘whole world’ changes the epistemic landscape and the ground of argument of the thesis. To this point, however comprehensive the thesis has sought to be in accumulating voices arguing for a humanist and holistic aim for education – schooling and early childhood in particular - it may be argued that the concept of a holistic principle or paradigm, even an ultimate aim to educate for humanity, is no more than an ideological view to be considered among others.

The ground of argument shifted to some degree in Chapter Five with neurological evidence offering a concerted position that the human brain functions as a network. Research is still exploring how the human brain, nervous system and body functions as a 'whole' and what this means for human development and for educators. What is critical for educators is that the concept of holistic learning is not just another theory, but a concept based on the way *things are* in the physiological and psychological nature of human being. It is becoming a matter of ontological principle.

This Chapter explores an even more fundamental ontological concept: The whole human world as human beings experience it, is 'holistic in principle'. Everything human beings experience is interconnected and interdependent in ways that cannot presently be fully explained. To 'educate for humanity' requires recognition of this principle which profoundly affects the aims and purposes of education in a way no other concept can. It provides the fundamental *raison d'etre* of humanity, and of the education of human beings in their belonging to and participation in the human universe.

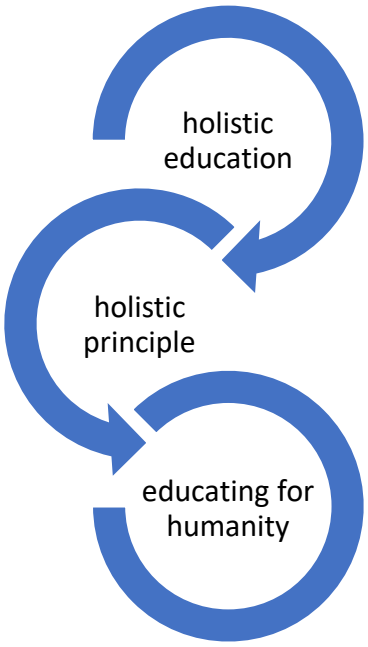
The thesis position is that a concept of a holistic principle is not just an alternative, optional aim for education and its practice. It is existential. The concept has existed for 60000 years from indigenous times. More recently it has arisen in 'web theory' and in concepts of 'holistic education'. The concept of 'holistic principle' is asking the 21st century world of education for fresh, concerted consideration.

The Chapter pursues the conceptual structure shown in Figure 12.

- A review of holistic education
- A review of the 'holistic principle' of the whole world
- A discussion of 'educating for humanity'

It concludes with examples of holistic education practice.

Figure 12 Holistic education, holistic principle, educating for humanity



Before commencing the discussion, further clarification is needed of two related, and potentially confusing concepts - 'a holistic approach' and 'holistic education'.

The phrase 'a holistic approach' has been used in the research literature in Chapters Four and Five to refer to both a concept of whole child, and a concept of holistic learning. The thesis proposed, at the commencement of Chapter Five, that

the phrase ‘holistic approach’ is taken to mean a contextual or ecological approach to concepts of either and both ‘whole child’ and ‘holistic learning’. The phrase is however also used in the research literature to refer to ‘holistic education’.

The thesis proposes that ‘holistic education’, (while not used consistently in the research literature), means the provision of education, premised on concepts of whole child and holistic learning occurring in contexts, but with two additional premises. Holistic education presumes that a ’holistic approach’ to whole child learning and development, will encourage each child’s empathic participation in their social and natural worlds and contribute to the world’s wholeness. Moreover, holistic education presumes the world is holistic in principle. This concept of holistic education is articulated below at Section 6.1.

6.1 Holistic education

Education of the whole child in terms of holistic education is discussed by Kochhar-Bryant and Heishman (2010), and Mayes and Williams (2013). Holistic education, per se, is discussed by Abarbanel (2017), Crawford and Rossiter (1993), Flake (1993), Hare (2010), John (2017), Mahmoudi, Jafari, Nasrabadi, and Liaghatdar (2012), and Saw (2013). Extended discussions and original paradigms of holistic education are provided by R. Miller (1991,1997, 2000), Forbes (2003), Forbes and Martin (2004), J. Miller (1996, 2010), Miller, Irwin and Nigh (2014), and Miller and Nigh (2017). These last, together with Johnson (2013), are discussed at 6.1.1.

Kochhar-Bryant and Heishman (2010), ask “What does it mean to educate the whole child (p.6) and what are the core qualities of holistic education” (p.7)? The authors use language such as that at Figure 5. Whole-child educators are those who see the “overarching goal of education” as promoting “the highest possible levels of cognitive, social, emotional, physical and ethical development for each child” (p.6). Besides preparing “productive participants in the economic system”, education must cultivate spirituality, reverence for the natural environment, a sense of social justice, inspire “creativity, imagination, compassion, self-knowledge, social skills, emotional health” (p.6). Holistic education tries to cultivate the development of the whole human being (p.7).

Mayes and Williams (2012) begin their framework for “nurturing the whole student” with “the assumption that education is at its best – healthiest and most engaging - when it is holistic” (Title page, p.vii). By holistic education, the authors mean “that the various dimensions of the teacher and student are honored and nurtured” in education processes (p.vii). They identify the dimensions as organic (embodied), psychodynamic (emotional), affiliative (cultural), procedural (cognitive), and existential (making meaning). These dimensions must be celebrated by any truly humane educational theory or practice (p.vii). Holistic education is an “antidote” (p.viii) to the standardized approaches to education that breed failure, even illness, in the classroom.[189]

[189] In the review by Ron Miller (2005) of Seymour (2004), holistic education is conceptually contrasted with ‘standard’ education.

There is no single definition for, nor concept of, holistic education (Forbes, 1996, p.1; Hare, 2013, p.3; Johnson, 2010, You Tube; Kobia, 2005, p.9; Schreiner, Baney, & Oxley, 2005, p.15,). Hare (2013) cites Forbes (2003, p.2) that holistic education is "best described as a group of beliefs, feelings, principles" and ideas sharing "a family resemblance" (p.3). Forbes says the vision of holistic education is the fullest possible development of an individual person to be the best they can be (2003, p.17). Johnson (2013, p.1) says holistic education is based on theories of holism – on the one unifying theory that everything in the universe is interconnected. Mahmoudi, Jafari, Nasrabadi and Liaghatdar (2012) see the concept of holistic education as encompassing a range of philosophical orientations and pedagogical practices, all with a focus on *wholeness* (sic). Its main characteristic is to foster a more spiritual worldview (Abstract).[190]

In Australia, Crawford and Rossiter (1993), discussing the future of holistic education, observed that besides "traditional aims for knowledge and skills, there has been an increasing emphasis on education to bring about personal change" (p.37). The concept of holistic education typically expresses aims for schooling in terms of growth and development of the whole person (p.37). The authors believed that at the time these ideas were entering recession. There was more value on the subject matter than the persons subject to it. Little if any value was ascribed to studying "what it means to be fully human" (p.39).

[190] The authors draw on the work of Ron Miller, Scott Forbes, and John Miller.

Flake (1993) explores the principles of holistic education and practices of holistic education programs.[191] She says "Holistic education calls for creating a sustainable, just and peaceful society in harmony with the earth and its life" (Abstract). Flake identifies eight assumptions on which holistic education is based. Those resonating particularly with the thesis are: It cultivates a critical awareness of the many contexts of learners' lives (moral, cultural, ecological); there are different ways of knowing (intuitive, creative, physical); learning is lifelong, both an inner process of self-discovery and cooperative activity, and encouraging of the human spirit; a holistic curriculum is interdisciplinary, integrating both community and global perspectives. The articles of Flake's book advocate educational principles of human development, individuation, earth literacy, global citizenship, spirituality, a new role for educators.

The Global Alliance (GATE) (2014) offers a revised vision statement which declares ten principles for holistic education.[192] The diverse members "share a common concern for the future of humanity and all life on Earth" (para.1). They believe the "predominant industrial/technological world view" has led to a "culture in crisis", whose educational systems are "anachronistic and dysfunctional" (paras 2, 4). They wish to return to the original meaning of education – to "draw forth" (sic) "the greatness within each unique person" (para. 4). Methods and practices of

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[191] Flake's work (of 59 articles) is based on and extends the findings of a 1991 Conference of holistic educators who produced 'Education 2000: A Holistic Perspective'.

[192] The original statement (2000) followed the same 1991 Conference informing Flake's work. John Miller (2011) also refers to the GATE statement.

achieving the vision may vary, but the vision transcends differences and offers a "humane resolution to the crisis of modern education" (para. 5).

The principles of the Global Alliance (2014) include "educating for human development" – the "fundamental purpose of education" (Principle I). Learning must involve relationships to self, family, community, the global community, the planet, the cosmos (Principle 1). Students must be honoured as individuals (Principle II). The educational process must be holistic, "rooted in the assumption that the universe is an integrated whole in which everything is connected" and nurturing all aspects of the individual learner - intellectual, physical, social, moral, aesthetic, creative and spiritual (Principle IV). It is essential to cultivate each educator's own growth and creative awakening (Principle V). The Alliance wishes to educate for global citizenship. "Global education is based on an ecological approach, which emphasizes the connectedness and interdependence of nature and human life and culture" (Principle VIII). Education must promote "earth literacy" and spirituality (Principles IX, X).

Schreiner, Baney and Oxley (2005) provide an "ecumenical" perspective on holistic education, with examples (Title page). Holistic education is "more a set of values and methodologies enabling individuals and communities to learn in integrated ways" relating to their context, than a single pathway (Kobia, p.9, Foreword). The editors refer to the concept of Ron Miller (2000, pp.23-5). Individuals, communities, the global family of humanity and the cosmos are whole systems existing in relationship, in connection (pp.17-18). Holistic education seeks to heal the divisions

between mind and body, intellect and emotion, science and art, humanity and the natural world (pp.17-8). The editors identify eight principles of holistic education, which is “education for transformation” (p.20). A holistic approach is required by our nature as human beings (p.231). Holistic education contributes to the search for the “restoration of the given unity of creation” (p.20).[193]

Saw (2013), in India, provides a summary overview of holistic education. The key principle of holistic education “is a synergistic relationship between the various developmental areas” which “all work in unison” (p.70).[194] John (2017), also in India, sees the principles of holistic education including that it “teaches the young mind to be human” and prepare for life (para. 1). It is “concerned with underlying worldviews or paradigms” attempting to “transform the foundations of education” (para. 2).[195]

Arbanel (2017), drawing on the work of John Miller (1988, 1996) in the *Holistic Curriculum*, presents holistic education as a framework of “balance, inclusion, and connection throughout the school” (para. 10). “Connection is emphasized in six forms: Between linear and intuitive thinking, mind and body, areas of knowledge, self and community, the self and the Earth, and the personal and the transpersonal (the contemplative)” (para. 13). It involves ‘whole child’ and the interaction of body,

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[193] The editors believe the methodology of the mechanistic has become an ontology (p.24).

[194] Saw refers to Flake (1993), Forbes (1996), Miller (1991), and the four pillars of learning (Delors, 1996) (p.71).

[195] John cites Nakagava (2001), Miller, R. (1992), and Forbes & Martin (2004).

mind and spirit (para. 5). It is a “gross fallacy” to treat them as separate which he says schools do “every day” (para. 5). It involves the “whole teacher” personifying patience, presence, care, love, humility (para. 14). The school should be “a beloved community that puts personal and collective flourishing” first (para. 9). Love for the mystery and beauty of life is at the core of the curriculum (para. 15).[196]

6.1.1 Scholars: Ron Miller, Scott Forbes, John Miller, Andrew Johnson

Three scholars, frequently cited, have articulated a concept of ‘holistic education’ over the last thirty years: Ron Miller, Scott Forbes and John Miller. Latterly Andrew Johnson has added his voice. The work of each of these scholars is reviewed individually below, better to identify their particular tonalities.

Ron Miller

Ron Miller (1991, 1997, 2000, 2005a, 2006) is cited above and variously as the voice of holistic education in the USA from the late 1980’s.[197] His conception of holistic education contributes to each of the thesis concepts of whole child, holistic learning and whole world. The main elements of both the meaning and development of holistic education philosophically, as Miller sees them, and of Miller’s own concept of holistic education, are summed below.

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[196] Arbanel describes Equinox Holistic Alternative School in Toronto (para. 17) and refers again to the work of John (Jack) Miller discussed below (para. 6).

[197] Ron Miller founded the Holistic Education Press and edited the Holistic Education Review (1988-1991).

Miller (2000) reviews the development of holistic education over 200 years. He offers a range of historical voices insisting that "education should be understood as the art of cultivating the moral, emotional, physical, psychological and spiritual dimensions of the developing child" (para. 1).

> Holistic education is based on the premise that each person finds identity, meaning and purpose in life through connections to the community, to the natural world, and to spiritual values such as compassion and peace (para. 2).

Holistic education nurtures love of learning, wonder, and helps a "person feel part of the wholeness of the universe" (para. 2). Miller cites Montessori. There is no one way to achieve this goal (para. 2). Holistic education responds to the "diverse learning styles and needs of evolving human beings" (para. 2).

Miller (2005a) sees 'holistic education' having multiple provocations and sources in two contexts of cultural and intellectual belief and thought. First, he situates the emergence of holistic education in the USA at a time of cultural upheaval and urge for social change. He says the term 'holistic education' emerged from a Conference of humanist psychologists and educators in California in 1979. He cites Harris (1980). He attributes its spread to the work of John Miller from 1988 (discussed below), and his own founding of the Holistic Education Review Journal at that time.[198] Despite the growth then and since, it "is still a marginal movement, of interest to only a few thousand educators, scattered across several nations"

[198] John Miller agrees (2011, p.3).

(para. 3). It “has had little influence on the educational policies of any nation in the era of corporate globalization and standardization” which has “followed and curtailed” the earlier rebellion (para. 3). Nonetheless Miller thinks “this countercultural philosophy of education” may still reflect a new civilisation “struggling to emerge around the world” (para. 3).

Miller (2005a) sees the characteristics of the holistic education desired by parents and educators as “cultivating spirituality, reverence for the natural environment, sense of social justice”, inspiring “creativity, imagination, compassion, self-knowledge, social skills and emotional health” (para. 4). It “simply means cultivating the whole person and helping individuals live more consciously within their communities and natural ecosystems” (para. 4).

Miller (2005a) also sees “the roots of holistic education” as “grounded in a synthesis of various philosophical and pedagogical perspectives” from “well before the 1960s” (para. 5). A “holistic epistemology seeks synthesis and integration” (para 7).[199] “Holism asserts that the universe is an undivided, interconnected whole, and that this whole embodies an all-encompassing creative source” (para.

[199] Miller (2005a) cites Whitehead, Jung, Sri Aurobindo, Bateson, Bertalanffy, and Lemkow & Wilber (para. 5). He provides diverse sources of a holistic epistemology for holistic education: Relativity theory and quantum mechanics, ecological awareness, a global perspective emphasising the whole of humanity, feminism and values of caring, and alternative pedagogies (Steiner, Montessori) which he sees as “more genuinely responsive to the natural rhythms of children’s development” and to their individuality.

5). Miller cites Aldous Huxley, who saw this perspective at the “core of most of the world’s mystical and spiritual traditions”, calling it the “perennial philosophy” (para. 6). Miller sees theorists such as John Miller (2000) putting spirituality and “education for the *soul*” (sic), for “the essence of the human being” “at the heart of holistic education”. A holistic “way of knowing” involves “empathic, caring dialogue with the world” (para. 7). Miller cites Parker Palmer (1993).

Miller’s own concept

Miller (1997) wishes to deconstruct the basic assumptions about the meaning and purpose of contemporary education, in America particularly (p.1). He wants to offer an ecological, spiritual, moral perspective of what the aims of education ought now to be and “provide a substantial intellectual foundation for holistic education”, as a “coherent, significant theoretical perspective” (p.4). He believes that the modern world is in crisis, and that “modern schooling is a spiritually devastating form of social engineering that is hostile to human values“ (p.4).

Miller (1997) continues. The “voices of the human spirit” of the past 200 years are calling for a return to a forgotten profound wisdom (p.4). Holistic education is a countercultural movement. Holism literally is a search for human wholeness in a culture that denies it (p.6). “American culture rests on an implicit image of the human being and implicit assumptions about the human relationship to nature and the cosmos” that prevents the “evolution of human capacities” (p.7). Holistic thinking is an effort to regain the spiritual element of our being (p.19). Miller (2006) discusses spirituality in holistic education.

Kochhar-Bryant and Heishman (2010, p.7) refer to Miller's definition (2008) for holistic education. It aims "to cultivate the development of the whole human being". To "become a full person", each child needs to develop intellectual, physical, psychological, emotional, interpersonal, moral and spiritual potentials. The authors assert that Miller identified four characteristic qualities of holistic education: Experiential learning, personal relationships, concern for each child's interior life, an expression of ecological consciousness - of recognition that everything in the world exists in contextual relationship, of respect, even of reverence for the natural world (p.7).

Scott Forbes

Forbes (1996), also observing that holistic education "does not have a single source", nor "major form of expression", nonetheless presents a number of values and perceptions he sees as relatively common to schools claiming to be holistic (p.1). "Holistic education reflects and responds more fully than conventional education to a new and increasingly accepted view of what it means to be human" (p.1). It is however very difficult for schools to hold values and views of human nature different from those of the population they seek to serve (p.1). Yet it is also problematic for "schools to ignore what seems to be a change in humanity's view of itself" (p.1). Nevertheless, Forbes concludes that "traditional ways of understanding and preparing people for life have not solved our personal, social, national and international problems" (p.9). He quotes a school principal saying "I don't know how to educate anyone for today's world" (p.9).

Like Miller, Forbes (1996) focuses his exposition of holistic education on social developments and ideas – on a “cultural paradigm shift” (p.1) - arising from the 1960’s and 1970’s that put “holistic education onto centre stage” (p.2), and made its values and vision of humanity popular (p.1). These include issues the research believes are (still) current: Ecological crisis, and the need for other capacities of thought besides or other than dominant economic, scientific, and technical growth frameworks. Holistic education offers views of human nature, looking at ‘wholes’ or systems and the oneness of all life, a sense of spirituality or transcendence, awareness of community and relationships, respect for individual children, and different modes of pedagogy (pp.2-9).

Forbes (2003) pursues a different historical and conceptual approach, referred to in 1996 (p.1). He explores the development of holistic education through discussion of six authors – Rousseau, Pestalozzi, Froebel, Jung, Maslow, and Rogers. He develops a philosophical framework around ideas of competence based pedagogy drawing on Bernstein (1996). He proposes (1999, 2003) the goal of holistic education be conceived as “ultimacy” – the highest state a human being can aspire to (Forbes & Martin, 2004, p.4; Mahmoudi, Jafari, Nasrabadi, & Liaghatdar, 2012, p.183; English, 2003, para. 15).

Forbes and Martin (2004) report on research they have conducted analysing the literature of 72 diverse schools in the USA which are regarded as at least “partially holistic”. The authors use the philosophical framework Forbes (2003) developed, and discourse analysis to establish possible groupings of holistic education

initiatives (p.3). The authors see one of the difficulties facing holistic education research is the diversity of the historic origins and initiatives, which attract the term, and that they are spread over 250 years, (pp.3-4)

Forbes and Martin (2004) repeat their understanding of the goal of holistic education as expressed in terms of 'ultimacy' of human development (whether in religious, psychological or undefined forms), and of the development of a knowledge-way-of-knowing-wisdom, which Forbes (2003) calls "sagacious competence" (p.4). Forbes sees this competence as having six (but not separate) aspects: Inner freedom, good judgment, meta-learning, social ability, students' development of character (of refining personal values), and self-knowledge (p.4).

John Miller

John Miller has been referred to above as both an original and continuing North American voice for holistic education since 1988.[200] His work is particularly relevant to the thesis and to the holistic paradigm proposed. It contributes significantly to considerations of whole child, to the holistic principle of the interconnectedness of all things, and to holistic curriculum - the approach of educators and a pedagogy seeking to practise holistic education. The thesis paradigm offers a congruent position but is differentiated by the exposition of holistic learning in Chapter Five,

[200] The Ontario Institute for Studies in Education (OISE) in Toronto has a strong tradition of holistic studies. Miller helped found the Equinox Holistic Alternative School in Toronto (originally 'The Whole Child School') (Section 6.4) referred to above by Arbanel (2017).

by the conception of the three part paradigm of the holistic principle forming the central thesis argument, and by the situation of the thesis in the explicit purpose of 'educating for humanity'.

Miller (2010) discusses whole child education. He begins by quoting (1980, p.138) (p.3). The development of mind, physical and spiritual faculties of the child constitutes an "indivisible whole" (p.3). Common education systems have nonetheless emphasised fragmentation rather than connectedness (p.4). *"Whole child education attempts to educate the whole child (body-mind-spirit) and also connect the child to the surrounding community and the world at large"* (sic) (p.8). "The aim of whole child education is the development of children and adolescents who can think, feel and act and whose bodies and souls are nourished" (pp.13-14). Miller traces "teaching from the whole" back to indigenous times, to Roman and Greek thought, to Eastern philosophy. He cites Tolle (2005, pp.275-6). The 'whole' comprises all that exists in the world or cosmos (p.7). Everything that exists is "part of a web of interconnected, multidimensional processes" (p.7).

For Miller (2010), educating the whole child is acknowledging that each person has something of the mysterious within them – a soul, an inner life (p.8).[201] Miller refers to Einstein saying the most beautiful (and fundamental) emotion humans can experience is 'the mysterious" (p.8). It is at the heart of all art and science (p.8).

[201] Miller uses 'self' (1996), but 'soul' (2007) to refer to this inner life.

Miller cites Isaacson (2007, p.387). Miller asks a key question here: How do we nourish the sense of the mysterious, the soul, in young people? Miller sees two essential factors. The most powerful force is the loving presence of the teacher (p.8), and the teaching process must include the *body* (sic). Miller's pedagogy includes handwork, movement, music, sports and yoga.

Miller (2000, p.vii) says that if we imagine a child as a complete human being, born with fullness of spirit and talent in need of unfolding, believing that 'educate' means to 'lead out' rather than 'stuff in', we might be able to educate. "An educated person is someone whose innate being has been led out, enticed, appreciated (p.vii). The "soul stuff" of a child is imagination, heart, creativity, spirit, vision which is nurtured by experiences of earth (Chapter 6), by arts education (Chapter 5), and by the teacher's soul expressed in robust love (p.vi, Chapters 3, 8). Soul education is not perfect, and we don't know exactly where we are going or what we are doing (p.vi), but education as we know it, damages the soul (p.4). We can help the soul to recover, to sing with joy, by recalling and redeveloping our original relationship with the universe (p.12).

Miller (2010) proposes three aspects of whole teaching to be integrated: Transmission, transaction, and transformation (pp.9-11 and pp.15-39), each of which "*is rooted in a world view*" (sic) (p.15).[202] The underlying view of transformational teaching is that everything is connected (p.29). The whole child

[202] Miller (2011) below offers a similar argument (p.2).

and the curriculum are connected (p.11). The whole curriculum is connected (p.12). Miller cites and quotes Senge, Scharmer, Jaworski and Flowers (2005, p.188).

> Connectedness is the defining feature of the new world view – connectedness as an organising *principle* [Italics added] of the universe, connectedness between the 'outer world' of manifest phenomena and the 'inner world' of live experience", and, ultimately connectedness among people and between humans and the larger world (p.29).

The aims of transformative teaching therefore include wisdom, compassion and a sense of purpose in life (p.30).[203] It is transformative teaching that develops self-awareness, empathy, and social responsibility (p.38).

MIller (2010) presents his concept of whole child education in terms of whole child, whole teacher, whole teaching, whole curriculum,[204] whole school and community. Miller's concept of the whole school is that it is a loving and just community (p.12) "caught in an inescapable network of mutuality" (p.81), He cites King (1963, p.22). where whole teachers care for their own minds, bodies, and spirits, and work on themselves lifelong to be more whole, including being reflective (pp.12-13), contemplative, meditative, patient, and "present" (pp.97-9).

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[203] Miller cites Noddings work on caring (1992, p.30, pp.64-6).

[204] Miller's concept of the whole curriculum (2007, Chapter Four) is summed below.

Miller's paradigm of universal wholeness, of interconnectedness and of holistic education of the whole child is presented in three models (2010, pp.10-12) which the research cannot reproduce. Figure 13 provides a thesis representation of Miller's holistic paradigm of interconnectedness for school education.[205]

Miller (2009) discusses holistic education in terms of "learning for an interconnected world" (Article title). He identifies its focus on wholeness (sic), and on the *interconnectedness* (sic) of experience and reality. A primary assumption is that the "spiritual part of being" should be nurtured "as well as the intellectual, physical, and emotional" (p.1). Holistic education therefore "attempts to develop a pedagogy that is interconnected and dynamic and … in harmony with the cosmos" (p.1). It offers "*a curriculum of connections*" (sic) (p.2). All teaching and learning should be "rooted in a larger vision" (p.2). Holistic education should also be inclusive of diverse students and learning strategies (p.2).[206]

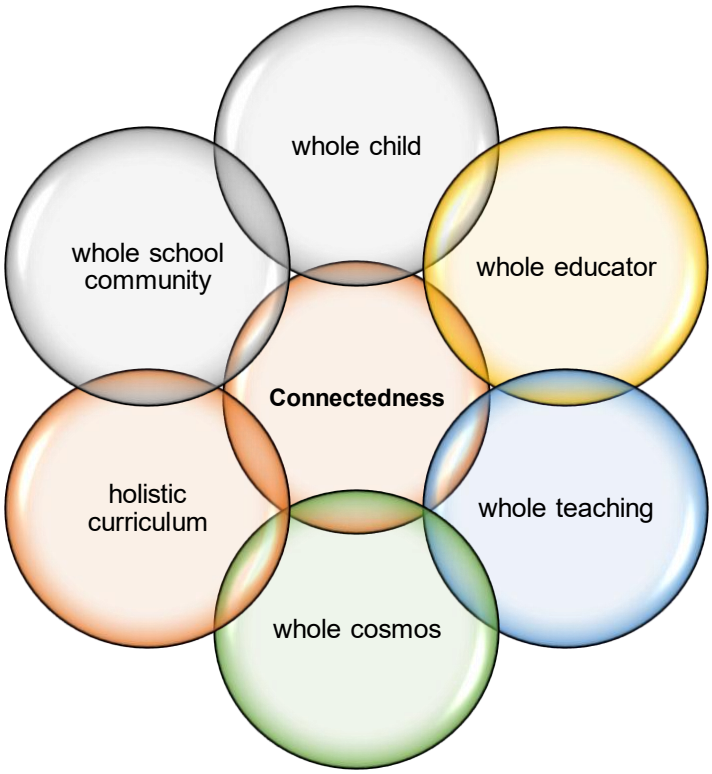
Miller, Irwin and Nigh (2014) say that holistic education has two dimensions – a focus on the growth of the whole person: Body, mind and soul - a capacity within the human psyche which is "unknowable and irreducible" – a mysterious energy giving meaning and purpose to life – a 'spiritual dimension', and a focus on

[205] Miller's models also use overlapping circles.

[206] Miller (2009) refers to the statement of *Education 2000: A Holistic perspective* (p.3) defining the central principles of holistic education. Flake (1993, and GATE (2014) above, refer to the same statement. Miller refers to Montessori and Steiner education.

interconnectedness (sic) between experience and the surrounding environment – community, earth, cosmos (pp.2-3).

Figure 13 A thesis model of Miller's paradigm of holistic education



Miller (2007, 2009) offers a concept of holistic learning which is different from that offered by the thesis in Chapter Five, but still couched in terms of connections and an interconnected world. Miller (2009) focuses on integration and connection of children's experience and reality, so that what children learn becomes part of them (p.5). He offers six types of connections "to facilitate holistic learning" (p.5). These are: Intuitive connections, those of mind and body, between curriculum subjects, between students' selves and the community, students connections with

themselves, and connections with the earth.[207] These connections provide the conceptual framework of Miller's holistic curriculum.

Miller's work, The Holistic Curriculum (1988, 1996, 2007),[208] provides the foundation for his evolving theory and practice summed above. It is conceived in terms of connections and relationships, grounded in the holistic nature of the universe as it is received by human kind. Holistic education attempts to bring education into alignment with the fundamental realities of nature (1996, p.1, 2007, p.3). Miller proposes the educational development of a (the) spiritual/existential "transpersonal self" (1996, p.34) or the "unconditioned self" (2007, p.25), that intuits, mediates and connects human 'being' with the highest principle of the universe (2007, p.25, p.37). To see (newly) the fundamental unity of the universe requires cultivation of intuition through contemplation and meditation (2007, p.20).

A thesis representation of Miller's paradigm of a holistic curriculum, conceived in terms of connections, is provided at Figure 14. Miller (2007) does not use 'teacher connections' when discussing the holistic teacher (Chapter 12), but says the holistic curriculum is rooted in the caring presence of the teacher, whose inner life is awakened to connections with other human beings (pp.190-1), and who is accountable to the communities in which schools reside and to the cosmos (p.194).

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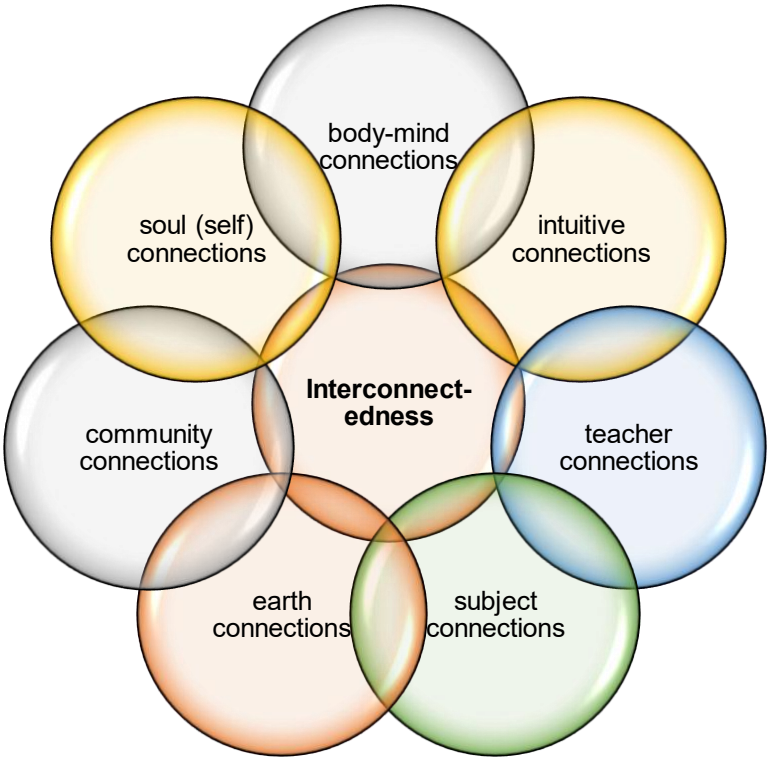
[207] See also Miller, 1996, pp.8-10; 2007, pp.13-14.

[208] Reprint edition (1996), second edition (2007). The references here are mostly from the 2007 edition.

Perhaps then, there are three dimensions to Miller's holistic thinking. His concept of wholeness, of holistic interconnectedness, of human development education, addresses the *what* (whole child), the *how* (holistic curriculum), and the *why* (the interconnectedness of everything). Although his approach is not conceived in terms of 'educating for humanity', it provides a powerful perspective towards such an aim.

Figure 14 A thesis model of Miller's paradigm of a holistic curriculum



In subsequent work, Miller and his collaborators discuss holistic teaching which means "teaching from the thinking heart" (Miller, Irwin & Nigh, 2014), teacher and student embodied learning (Miller & Nigh, 2017), human spirituality and education of the soul (Miller, 2000; Miller and Nakagawa, 2002), a conscious human

relationship to nature and the earth, and educating for wisdom and compassion (Miller, 2006).

Miller, Irwin and Nigh (2014) do not aim to provide a conceptual framework for wisdom and compassion, but provide the voices of 22 teachers with diverse perspectives (many practising Montessori, Steiner, Reggio Emilia approaches), all wanting to engage the whole student – head, hands, heart. Practices teachers use include meditation circles following feelings (p.139), experiences of trees and the moon (p.146), focusing on empathy and compassion (Chapter 14), ensuring "soul" is present in physical education lessons (Chapter 11), a "transpersonal" approach to educating deaf children (Chapter 5), cooking classes (Chapter 3), transformative collaborative learning (Chapter 4), and teacher reflection (Chapter 2). Wisdom and compassion should be at the centre of the secular education system (Miller & Nakagawa (2002, p.v).[209]

Miller and Nigh (2017), discuss embodied learning, where the intellect is connected to the whole being (p.xi). Collister (in Miller & Nigh, 2017) says the baseline of all teaching is "the love of humanity" (p.269). "Our ultimate purpose is to co-create a whole person, a whole community, a whole civilisation, a whole planet and a whole universe" (p.270, citing Hollick, 2007, p.367).

[209] The authors cite the Dalai Lama.

Andrew Johnson

Johnson (2013, pp.1-4) discusses holism and holistic education. His conception and emphases are, like those of Ron Miller and John Miller, highly congruent with the thesis argument and the holistic principle of the universe discussed at Section 6.2. Johnson sees the holistic principle of the universe as embodied in interconnected human experience. He believes in the human capacity for transformation of thought and behaviour through learning.[210]

Johnson (2013) says that theories of holism affirm that each part of something being studied and conceptualised, whether human DNA or particle physics, is a whole part of a larger whole - a human body or the universe - which cannot be reduced to the sum of their parts. Any entity needs to be understood as an integrated, interconnected system. Every part of any 'whole' is interconnected – everything in the universe is interconnected. For Johnson, holistic education recognises and practices the principle of interconnectedness, and seeks to address the whole person - mind, body, emotions, soul and spirit - recognising there are a "variety of ways of thinking, seeing and relating to the world" (p.4).[211]

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[210] The thesis does not consider further Johnson's attachment of 'transformation' to 'consciousness', but accepts that both 'conscious' and 'unconscious' are attached to 'mind' (Chapter Two). Johnson (2013) discusses human *consciousness* (sic) and what he calls the *collective unconscious* (sic), citing Jung.

[211] Johnson (2013) cites the four key characteristics of holistic education of Ron Miller (1991).

Johnson (2013) conceives the curriculum and experiences of holistic education as vehicles to develop three kinds of connections: Intrapersonal (connecting to the central self or soul), interpersonal (connecting to and living with others), transpersonal (perceiving the world in terms of inter-related systems of people and ecology, and students seeing their own interrelatedness and impact). He says holistic education also sees each human entity as a system of interacting dimensions. Johnson says holistic educators “educate” in the true sense of the word – to draw out the potential that is “already there” (p.3). Human beings “are not empty vessels to be filled” with predetermined knowledge, but are “thinking, feeling, emoting, creating, intuiting beings”, using all these interconnected things to learn about and “act on the world” (p.2). Holistic educators educate the whole student in all dimensions: Intellectual, emotional, social, artistic, moral, psychological, physical, aesthetic, creative, intuitive, spiritual, and others. This is transformative teaching and learning (p.5). “The ultimate transformational goal is to become more nurturing human beings who are better able to perceive the interconnectedness of all human, plant and animal life” (p.5).

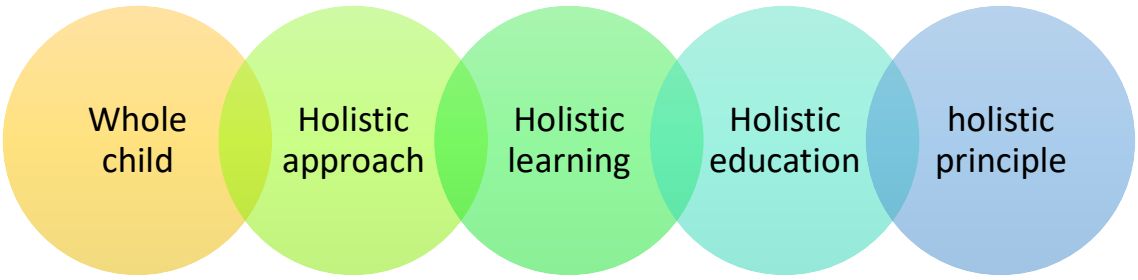
Johnson (2012) juxtaposes holistic learning theory with humanistic learning theory. He makes two points of high relevance to the overall argument of the thesis. “[T]he goal of education should be human development and personal growth”: Human education should align with the natural inclination to learn, grow and develop (p.1). Humanistic learning theory and humanistic education are not the same as secular humanism (p.1). They do not offer a spiritual or religious core position, but the full

development of each human being involves Intellect, emotion, creativity, psychological, social, physical and even spiritual development (p.4).

6.2 The holistic principle

The term 'holistic principle' is used in the thesis with two meanings: The holistic principle connecting concepts of whole child, holistic contextual approach, holistic learning and holistic education – and the holistic principle permeating the human universe. Figure 15 offers a model of the thesis paradigm, connecting the five concepts.

Figure 15 The Holistic principle – connected concepts



Ron Miller and John Miller particularly, have situated their concepts of holistic education in an ontology of the fundamental interconnectedness and interdependence of the universe. Both locate their ontology in indigenous,

philosophic, pedagogic and quantum epistemic traditions.[212] Johnson (2013) posits the universal holistic principle but does not trace its origins.

The research's own tracing of four epistemic traditions postulating a holistic principle of the universe is summed here: Indigenous spirituality, historic classical ideas, a scientific perspective from quantum physics and systems 'web' theory, and contemporary holistic philosophy – particularly with respect to the nature of and acquisition of knowledge, and human sense of nature and earth. The thesis (for reasons of scope) does not offer a perspective from the parallel considerations of universal and human holism and interconnectedness which characterise Eastern religious, philosophic, anthropological, physiological, medical and educational epistemologies.[213] Nakagawa (2002) provides an exposition. John Miller (2010, Chapter 1) makes reference, and Forbes and Martin (2004) say further acknowledgement is needed. Discussion of the world view and vision for education of the Sri Aurobindo Ghose Centre in Chennai, India, is provided in Marshak (1997, Chapters 5, 6).

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[212] A brief summary of Ron Miller's holistic sources was given above (Footnote 195). John Miller's holistic sources include indigenous tradition, the perennial philosophy, quantum mechanics, eastern religious thought, spirituality and diverse scholars.

[213] The work of Jiddu Krishnamurti is referred to by some scholars, but is omitted here. There are Krishnamurti schools based on his philosophy of the 'wholeness of life'. Refer to www.jkrishnamurti.org > schools

A belief in a holistic, creative principle, permeating the universe, is fundamental to indigenous ontology. Congruent belief has surfaced variously in western thought from the Greek classical period of the 5th century BCE. It seems to have dimmed in currency by the 18th century philosophic and scientific age of human reason and enlightenment, but re-emerged in the first part of the twentieth century through quantum theory, and since then from various epistemological perspectives – biological and environmental science, philosophy and theology, social science and anthropology, education and human learning. These different perspectives offer a new collective argument consonant with ancient holistic ontology. There is also an emerging urgent voice that understanding the principle of holism of the universe and what it means for human thought and behavior is critical to the future of the planet and its creatures and life forms.

Indigenous spirituality

The belief that the natural world and universe, and all things within it, are interconnected and interdependent, is attributed to indigenous humanity (J. Miller, 2010, 2009; Forbes, 1996, citing Cajete, 1994; Mahmoudi, Ebrahim, Nasrabardi, & Liaghatdar, 2012). All living creatures, plants, tiny particles, time and place are part of a co-existent 'whole'. In all things, in the whole universe, there is an existential principle of 'holism' which expresses, propagates and maintains existence. Human beings who participate in this existential holism have a unique place as custodians and interpreters of the holistic world as we experience it.

Pattel-Gray (1996a) provides a resource of insights into original indigenous thought. She says that the aboriginal view of the world is so very different to the Western view (p.xi). Aboriginal spirituality “encompasses … perspectives on land, humanity and creation” (p.xi). Land is seen as an extension of physical, spiritual and emotional forms, and as the essence of life-force, to the point where all life and creation are revered and valued (p.xi). For Pattel-Gray, Aboriginal (sic) people are profoundly, essentially connected to the land as a principle of existence, of human ‘being’. When this connection is broken, as it has been, human ‘being’ is also broken, displaced.

Galarrwuy Yunupingu (1996) says that the relationship of aboriginal people with the land is much closer spiritually, physically, mentally than any other relationship. “We can actually feel sorry for land”, he says (p.6). “The goodness that is in the land – in the trees, in the water, in the rocks … – enables us to breathe, live and enjoy” (p.7). His father taught him about how the land should be put into dances, songs and paintings, and how it should be put into the action of ceremonies (p.7). “We sing”, he says, about “love for the land” (p.8).

Rowan (1996) uses similar language. Aboriginal “spirituality is life-minded ... not just in the sense of people’s lives; it is in the lands, the birds, the trees, the rocks, waterholes, mountains” (p.15). There is aboriginal cultural diversity with “diverse experiences of our Spirituality” (sic), because it is an oral tradition (pp.16-17). She expresses concern for Aborigines who cannot “go home”, “who do not have access to their country … to their Spirituality” (sic) (p.19).

Bellear (1996) sees the Creator of the world in Australian landmarks, particularly the rainbow, the rain and thunder and an icon, *Wandjina*, whom he describes as watching from the wall, like the Christ image in Palermo, Italy. “As wanderers in our own land, our people … understood as no other, the cultural antecedents of the Jewish deity” (pp.187-8). Vivienne Sahanna (2001) adds her voice in summary. Well before “the second and subsequent cultures arrived on our shores”, aboriginal people had their own politics, economy, religion, laws and society which all Aboriginal people lived by (p.17). “[We] had the greatest respect for our land, our mother, our father, our all” (p.17).

Influential western thinkers from the 5th century BCE

Bowen and Hobson (1987) provide the key to Greek thought in the 6th to 4th centuries BCE which has underwritten western philosophy and education for over 2000 years. The authors aver that the Greek philosophic tradition from Socrates, as explicated by Plato, came to investigate the nature of the earth and universe, the nature of man, the nature of nature, developing theories of the nature of existence. In this context of inquiry, Plato established a school of philosophy dedicated to the search for the absolute nature of all things.

The authors say that “Educational thought for Plato is tied to the philosophical assumption of the total interrelatedness of the cosmos and the operation in nature of harmony and balance … Man, being part of it, should therefore follow it and strive to utilise its principles” (Bowen & Hobson, 1987, pp.24-5). Individual humans vary enormously but all share in a common element Plato supposed to be the

Form of Man. All forms are elements of the total design of the cosmos and of the one great Form. Plato drew on the Greek philosophical tradition that behind the universe is a principle of balance or harmony that maintains continuity in the face of change and diversity. It promotes the general well-being of the cosmos and is the ultimate Good.[214]

500 years later, Plutarch sought to explicate Plato's whole work and in particular focused on *Timaeus* for his understanding of Plato's doctrines (Karamanolis, 2010, p.1). According to Plutarch, Plato saw the world as having come about in time from two main principles, the creator god and the "Indefinite Dyad", who operate respectively through a cosmic and rational soul (Karamanolis, 2010, p.1). Karamanolis (2010) says Plutarch distinguishes in the world and in human beings, three aspects – body, soul, intellect. Their interaction allows for "badness" and/or "virtue" in human conduct (p.1).

Hoonhout (2010) identifies in Aquinas' theology of the 13th century a respect for "individual integrity", but within "a theological perspective that understands created reality as a multifaceted real relation to God, the originating and sustaining principle of its existence" .. "and the ultimate goal of its perfection" (p.54). This relation is one of "created participation in the divine essence of subsistent

[214] Bowen & Hobson (1987, pp.81-2) explain the principle changed with Aristotle, who is more a 'realist'. Man possesses a soul, but this does not necessarily imply a supernatural connection. Aristotle thought there was no need to posit another order of reality to explain the world we experience.

existence, which implies that God is intimately involved in creation, and creation actively immersed in the divine" (p.54). Hoonhout says that in Aquinas' thinking, space and time are God's creation, not his categories. Aquinas' metaphor for God and his creative, ever present energy in all created things, past, present and future, is "fire' (p.54).

Quantum and systems (web) theories of interconnectedness

The term 'quantum' came into the scientific lexicon through quantum physics[215] (or quantum mechanics) and is attributed first to Planck (1900) (DeGrasse Tyson, 2017, p.18; Krell, 1993, p.11). It is attributed subsequently to Einstein (1905) with some equivocation (Jones, 2015), to Schrodinger (from the 1920s) (Carroll, 2013), and to Bohr (from 1933) (Palermo, 2017). While originally it was applied to the observation of the behavior of matter and energy, 'quantum' has come to be used more loosely in general parlance to refer to everything in the universe being connected (Hindle, 2016, Wood, 2016), by the fundamental way the "fabric of the universe is woven" (Wood, 2016). It is used in this sense of wholeness and interconnectedness by Laura and Cotton (1999) and Ashton and Laura (2012) below.

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[215] De Aquino (2012) believes quantum physics, which discovered the laws that accurately describe the structures of the universe, is suggesting the existence of a spiritual world, not as a supernatural world, but as real as the material world (p.282). It is seriously considering the existence of the human soul (p.418). The soul has or is *quantized* (sic) energy (p.418). She believes this view of science will replace religious belief, and unify with it, but it will take a while to do so (p.304). She anticipates a great transformation of humanity (p.305).

A term in increasing use to present interconnectedness as a (the) fundamental principle of the universe and the way it operates, of the earth and all its inhabitants, is a 'systems' or 'web' view' of life, of which Fritjof Capra is the leading exponent (Capra, 1996, 1997, 2015; Capra and Luisi, 2014). Capra's work integrates perspectives from physics, biology, psychology, philosophy and sociology. Capra (1996) discusses what he calls "a new paradigm", a "holistic worldview, seeing the world as an integrated whole" (p.6). It is an "ecological' view" in the sense of "deep ecology" (p.6, pp.12-13).[216] Deep ecology sees humanity and nature, the world as a whole, as a "fundamentally interconnected and interdependent" network (p.7). Deep ecological awareness such as this, is "spiritual or religious" (p.7). Life is at its centre (p.12).[217]

Capra (1997) says that what was then emerging was a coherent scientific theory offering for the first time, a "unified view of mind, matter and life" (p.2). Capra (1997) believes the new vision and understanding of life will help build sustainable communities (p.2). He says living systems theory emerged in the 1920's simultaneously from organismic biology, Gestalt psychology and ecology, bringing together ideas of integrated wholes, irreducible to parts (pp.2-4). "We need to understand the basic principles of ecology, the language of nature" (p.2). The

[216] Cudmore (2009) says "interconnectedness is a fundamental ecological concept and foundational component of eco-system-based management of natural resources". Ecosystems operate like a woven fabric.

[217] Reviews of Capra (1996) are provided by Oderberg (1997); London (1998).

science of ecology introduced the concept of network and subsequently the concept of food web (p.3).

Capra (1997) says the web of life is an ancient idea conveying the “interwovenness and interdependence of all phenomena” (p.3). It is “contextual thinking and process thinking” (p.4). Systems thinking also invites a shift to a qualitative rather than quantitative approach (p.4), but it has prompted a new mathematical language of complexity (p.4, p.6), which has allowed the mathematical description and modeling of the fundamental interconnectedness of living networks (Capra and Luisi, 2014, Chapter 6).

Capra (1997, pp.7-9) sees living systems theory as having three elements: Pattern (the network of relationships that is self-making), structure (the constituents), and process (the continual embodiment of the system’s pattern of organization). Capra says the new understanding of life process has generated a new conception of mind or cognition (the Santiago theory). “The central insight” of the theory “is the identification of cognition, the process of knowing, with the process of life” (p.9). “Cognition involves the entire process of life – including perception, emotion, behavior” (p.9). For humans it involves “language, conceptual thought, self-awareness, and all the other attributes of human consciousness” (p.9).

Capra (2015) sees the systems understanding of life as integrating four epistemic dimensions: Biological, cognitive, social, ecological. He says “The entire material world is a network of inseparable patterns of relationships. The planet as a whole is

a living self-regulating system. The view of the human body as a machine and of the mind as a separate entity is being replaced by one that sees not only the brain, but also the immune system, the bodily organs, and even each cell as a living, cognitive system. A new science of qualities is slowly emerging (pp.242-3). He says “one of the most radical philosophical implications is a new conception of mind and consciousness (Abstract). Consciousness is “a special kind of cognitive process” emerging with cognitive complexity (p.246). Its characteristic is self-awareness – of the environment and self (p.246). The nature of mind (the process of life) is the key to Capra’s synthesis of systems (network) theory (p.245).

Capra and Luisi (2014), to which Capra (2015) refers, sum and reiterate Capra’s systems view of life. The authors situate systems thinking, which has now been current for 30 years, in a world still preoccupied with an outdated world view. The tension between a mechanistic and holistic view of life has recurred throughout the history of western science (p.63). The authors see the consequence is that all the major world problems are now also systemic – interconnected and interdependent. Energy, environment, finance, climate, and food require systemic solutions (pp.xi-xii). Everything should be designed so as not to interfere with nature’s ability to sustain life (p.xi), which is a property of an ecological system (p.341).

Capra and Luisi (2014) also consider the dialectic relation of science and spirituality which “is responsible for the internal growth of individuals, as well as for ethical constraints on excessive consumption of the planet’s resources” (p.275).

The authors comment that their discussion “includes the spiritual dimension of consciousness” (para. 13).

> We find that the essence of spiritual experience is fully consistent with the systems view of life. When we look at the world around us, whether within the context of science or of spiritual practice, we find that we are not thrown into chaos and randomness but are part of a great order, a grand symphony of life. We share not only life’s molecules, but also its basic principles of organisation with the rest of the living world. Indeed, we belong to the universe, and this experience of belonging makes our lives profoundly meaningful (para. 13).

Contemporary theology, ecology and philosophy: A holographic paradigm

The late Thomas Berry (2018) provides a contemporary theological and ecological perspective of the holistic principle. Berry, according to Webb (2007), believed that all human professions, institutions, and activities must be integral with the earth as the primary self-nourishing, self-governing and self-fulfilling community (para. 1). The way into the future is to integrate human activities within this context of thought (para. 1). Berry articulated a new Earth-based spirituality that integrates the evolutionary perspectives of science with the kinds of feelings that inform religion and the arts (para. 2). He advocated the (re)development of an ecological civilization in which human beings fully recognize and integrate with ‘the Earth community’ (para. 2). Conversely, he believed that the diminution of humanity accompanies and derives from the degradation of nature (para. 3). Humanity cannot exist in the long-term unless it re-joins the community of life from which it

has emerged (para. 3). This earth community has shaped humanity in every aspect (para. 3). It is the revelation of the ultimate and sacred reality contained in the universe (para. 3).[218] Tucker and Grimm (2014) describe Berry's work as articulating a "universe story" (sic) (para. 1).

Another perspective on the 'interconnectedness' of humans and life forms, is posed in terms of an 'ecology' which is both social and environmental. Bronfenbrenner (1994) offers a sociocultural understanding of human learning and development. He proposes an ecological systems theory, which situates individual development in the context(s) in which it occurs. Each child develops in relationships within family, neighbourhood, community and society. These systems are (necessarily) interconnected within each system and across each of the other systems. This view is consonant with the thesis interpretation of a holistic contextual approach to both whole child and holistic learning.

The epistemic context summed briefly above, also informs the contemporary philosophy of Ronald Laura and his collaborators (1999, 2003, 2008, 2012), who explore the principle of the holism of the universe from various perspectives – health, education, technology, the natural environment. Laura, Marchant & Smith (2008) assert and reject what they see as the rampant exercise of human power over the natural world, the loss of relationship and interconnectedness of humanity

[218] A selection of quotations from each of Berry's four main works is not included.

with nature and with its human members, the misuse of “the precious gift of human consciousness” (p.151). This occurs through the manner in which knowledge is conceived, acquired and used. The “conventional way of knowing encourages the learner to seek separation and detachment from the world of nature” (p.151).

Laura, Marchant & Smith (2008, Chapter 9) propose the principle of “empathetic epistemology” to reconceptualise knowledge as connectivity, expressed empathetically. Empathetic knowledge allows and encourages the development of a “participatory consciousness” in all learners which in turn encourages moral reflection and personal immersion in the relationships and responsibility afforded by both natural and human environments. The authors say there is a critical need to redefine humanity’s relationship to nature and to redefine the fundamental concept of educational knowledge such that it dignifies humanity.

Laura and Cotton (1999, Chapter 6) attribute the original use of the term ‘holism’ to Smuts (1926/1973). They say Smuts explains ‘holism’ and ‘holistic’ as the underlying dynamic, creative tendency of nature. “The character of ‘wholeness’ … meets us everywhere and points to something fundamental in the universe” (p.149). The authors say that nature is interested in ‘whole making’. Any ‘whole’ of investigation – such as human life or child cannot and should not be abstracted to its composite parts without losing its integrity and identity. Laura and Cotton (1999) perceive the interconnectedness of the different (but not separate) human capacities of body and mind in each child and human being, and of each human

being and child with all of nature, and of the different bodies of knowledge inviting epistemic holism, as existential principles.

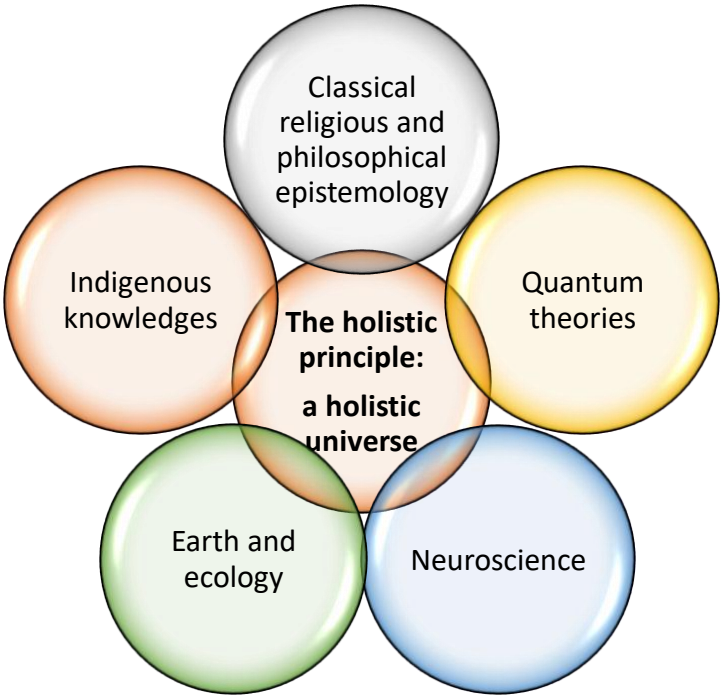
Laura and Cotton (1999) believe that contemporary education supports the uncritical development of technologies and a concept of knowledge that is entrenched in that support. A “different paradigm of learning” needs to be developed and applied which will build a new education framework that will “generate empathy and understanding” of both the natural universe and for fellow human beings (p.3). “Education is about making people whole through finding new ways to live better in nature and with each other” (p.3). Recent developments in the philosophy of science, postulating a (whole) quantum universe, suggest that “participation in nature becomes a pivotal concept for *epistemic holism* (sic) and offers a new paradigm of ecological empathy” (p.4).

Ashton and Laura (2003) propose that the natural world offers prompts that provide deeper understanding of the environmental crisis confronting the modern world and humanity. Nature may be regarded as a seamless indivisible ‘whole’ composed of an intrinsic implicate order. Parts of Nature cannot be manipulated without affecting the whole. They propose that a “*holographic paradigm”* (sic) constitutes a basic principle of nature, such that “the health of any part of nature affects in some way the health of the whole. [E]ach part contains data about the whole” (pp.13-14). The authors offer a blueprint for an appropriate form of interaction with nature conducive to the promotion of health of all living things.

Interim conclusion to Section 6.2

The thesis sees the congruence of these various epistemic perspectives as providing a holistic ontology on which to base the aim and practice of school education, conceived in terms of educating for humanity. As Diamond (2010) asks: *"What would our world look like if we understood everything is interconnected?* (sic) (para. 1). The model at Figure 16 integrates the overlapping epistemic traditions above, and adds the recent tradition of neuroscience, explored in Chapter Five.

Figure 16 The holistic principle – a holistic universe



6.3 Educating for humanity

Relatively little seems to have been written or researched about 'educating for humanity', or 'education of humanity', however they are defined. Contemporary

‘education *of* humanity’ is what the first half of the thesis has described, although early childhood and school education is rarely referred to in these terms. The thesis interprets ‘educating *for* humanity’ as conveying two related (interconnected) meanings:

(1) Educating all students to participate in a conception of wholeness of the human world, and of human ‘being’ framed in terms of domains of self-development and learning, which includes empathy and service towards other human beings and creatures, and

(2) Educating for the survival and future of the human race, on the planet Earth.

The thesis proposes that both concepts are necessary to a paradigm for the education of human beings. The ‘education of humanity’ by formal and informal structures and processes - schools, early childhood centres, families, cultures, media and individual human experience – should be co-conceptual and co-existential with ‘educating for humanity’ – for the collective wellbeing of the web of life on the planet of which human beings are an intrinsic part and for which they are responsible.

Seymour and other scholars

Seymour (with Levin, 2004) believes humanity is at a life and death turning point (p.12). Seymour believes his book offers a “new frame of mind of consciousness” and how education can assist in reaching it (pp.12-13). He sees the “promise and necessity of working toward "a world for all" (sic) as a viable aspiration for education at a time when the worldwide crises in social justice, peace, democracy

and ecological integrity have become the defining issues of our times" (Abstract). Despite the fact that educational policy has veered far away from "educating for humanity", he believes there is "ample evidence from many schools" that the "purpose of educating young people of character, compassion, purpose and commitment is integral with the mastery of intellectual skills and life competencies" (Abstract). Seymour presents the need "to revisit educational purpose" according to what is fundamental to human beings (Abstract).[219]

Seymour (2004, pp.16-19) conceives of an "ecology of learning" for all schools in four interconnected domains: Self, community, earth, spirit. This ecology of learning "renders us fully human" because it says the self and the world are one whole": "To be fully human … means feeling and acting as part of a larger whole". The new paradigm needs to respect the whole of reality. Seymour believes the lesson to learn from the current epoch for humanity is overcoming disconnection from self, and of school subjects: Trying "to learn that all life, human and other, is one interconnected whole", where everything is sacred (pp.22-24). Understanding this will lead to a different 3R's for education: Respect, relationship, responsibility. The ultimate purpose of educating for humanity is realising the connections and responsibilities to each part of his four part paradigm. Each school community must work out its own story to make sense of the world, to find the river of spirit, the common sacred ground for a functional cosmology (p.24).

[219] Seymour's book includes scholars referred to: Capra, Berry, Noddings, Orr, Palmer.

Seymour's global vision nonetheless involves the importance and distinctiveness of the development of each child. Educating for the humanity of one child benefits the whole of humanity. Seymour (2004) believes there is something "so good and unique in each child", which educators are morally obligated to discover through "the adventure of learning" (p.19). Educating for personal development involves not treating children as though they are empty vessels to be filled (p.14).

Ron Miller (2005b) reviews Seymour (2004). Miller says that for over 200 years perceptive inspiring critics of education have offered "visions of education towards the fullness of our humanity" (p.33), yet these have been persistently suppressed. Miller says Seymour (2004) gathers his many voices to "build a compelling argument for a radical rethinking of the faulty assumptions underlying modern schooling" (p.34), and to offer a holistic perspective. Miller notes particularly the emphasis of the contributors on the ecological fabric giving meaning to life, on the meaning of spirituality in human development, community building and service learning, on educating a compassionate heart and cultivating character (p.35).

Miller (2005b) concludes by quoting Seymour in what he sees as a wonderfully clear and succinct statement of a holistic understanding of humanity, and human learning.

> Every epoch of human history has its own lesson for humanity to learn. In our time, humanity is trying to learn that all life, human and other-than-human, is one interconnected whole. This perception invites us into an experience of the sacredness of everything. Understanding one's

> connection to the whole brings an inner realization that each person, animate and inanimate thing has an essence of its own and a vital role to play in the web of life. With this comes a deep sense of respect, relationship, and personal responsibility to the whole (Seymour, 2004, p. 12).

An essay by Stoddard (2004) conceives the practice of American (Utah) school education in terms of “educating for human greatness” (Book title). Stoddard offers six cardinal principles for all those involved in schools, including cherishing the diverse uniqueness of each child, respecting their autonomy and drawing out their natural talents. For Stoddard, greatness seems to be an aspiration for a school community observing these principles. He offers three dimensions of human greatness: Students’ sense of personal identity, inquiry and interaction. He does not otherwise situate his concepts of classroom practice in a vision for humanity.

The Institute for Humane Education (2020) on the other hand, offers a goal for education of creating a just, humane and sustainable world, by developing people who are “solutionaries”, through collaborative engagement. The Institute wants education to develop people who are compassionate, empathic, responsible, and who view the natural world with wonder and appreciation. The Institute teaches that the world is interconnected.

The initial premise of a paper by Blomberg (2006) is: “Education always depends on a view of humanness” (Abstract, p.95). Blomberg cites and quotes Eisner

(2005) (Section 4.2.2) saying that the practice of education always reveals “a conception of human nature”, a “view of the human mind” and a vision for the future (p.91). Blomberg says education requires a vision of “what it means to be a *person* (sic) (p.93). He believes that “proper humanness”, the “flourishing that is appropriate to the kind of beings we are”, is constituted by ‘virtue’ (p.94). Blomberg’s sense of contemporary virtue is that it expresses self-sufficiency and relationality through caring, as well as reason. Human agents need a broad range of “normative properties” which Blomberg conceives as *character* (sic) (pp.93-4). For Blomberg, character is a “life direction animated (“spirited”) by the pursuit of justice” (p.96). He says what is needed now “is a greater understanding of the factors that lead a person to make right judgements and wise decisions” (p.93).

Blomberg (2006) offers a quite explicit Christian understanding of spirituality, which he sees as missing from Gardner’s theory of multiple intelligences. He believes Gardner’s theory focuses on intellectual character to the detriment of moral character (p.93). He asks “Schooling for what?” (p.91, p.97). Is the building of character a legitimate aim for a school? (p.97). Blomberg wants to embed “virtue ethics” and the development of virtues, (notwithstanding the difficulty of definition and the means to achieve it observed by Aristotle (p.92), in a Christian theory of creation and community (Abstract). In places Blomberg speaks in language congruent with the holistic principle of the thesis. He makes statements such as: “Cognition is a whole-person activity” (p.100). “The getting of wisdom” as a goal of learning is a “holy, holistic one” (p.99). “A life of true spirituality” pursues

“wholeness”, a life of holiness (p.97). Spirituality involves being “connected to all things” (p.97).

Interim conclusion to 6.3

These contemporary voices, particularly Seymour (2004), advocate an urgent vision for education and for humanity that is holistic. The vision stipulates the principle of the interconnectedness of everything, of the wholeness of the universe. Individual human beings need to understand the wholeness of the world and their place in and responsibility to it – to develop compassion for it and for fellow human beings. This is how to be ‘fully human’. Human learning is ‘ecological’. The purpose of education needs to be reconceived in these terms.

This global vision of education for the whole of humanity, nonetheless focuses on the development of each individual child, their sense of personal identity, and their sense of connection to the ‘whole’. Educators now need greater understanding of how to support the development of individual human character, of human wisdom, spirituality, and a sense of connection to other human beings and the whole world.

6.4 Schools

In this Section four schools have been selected for the specific statements they make pertaining to the thesis argument, linking their programs with individual student development, and students’ sense of global participation and responsibility. Each is distinctive in its focus: Recognition of the web of life, and compassion for all things; a holistic approach to individual development, with an emphasis on

nature; a holistic, student-guided approach, with integrated learning elements, that educates for sustainable living; a spiral, interdisciplinary curriculum based on world cultural history providing a holistic approach to students' understanding of the world, and their place in it.

The River School in Queensland, Australia (Home page, 2018), offers "neohumanist education for life". It extols "connection, love, compassion and respect for all Beings and the Environment". "Children are encouraged to develop their 'internal life' (sic)", "their already innate capacity for love and compassion", and "to recognise their 'interconnectedness of being' (sic) with the natural world and the planet earth". The goal is gradually to expand "a student's sense of community: from self, to family, locality, country, humanity, life on earth and ultimately the entire universe". The school offers an 'education for the whole child' (sic). The Early Childhood Centre celebrates "the magic of childhood".

The Equinox School in Toronto, Canada, (Welcome, n.d. 2020) draws on "a range of holistic philosophies and approaches" to create the specific holistic approach of the school. It integrates curricula, focuses on nature, and explicitly sets out to develop "the 'whole child – head, hands and heart" as a "full person" – intellectual, physical, psychological, emotional, interpersonal, moral and spirited". Holistic education sees each child as "an intricate and delicate web of vital forces and environmental influences" (citing J Miller as one of the founders). The Holistic Curriculum has seven principles of learning: Narrative, art, experience, and inquiry. It is cooperative, teacher led, and project-based. The figurative model of holistic

education centres on the whole child, and the child's connections with nature and the environment, the integrative arts nurturing head, hands and heart, community and family, and intuitive spirit. An excerpt from the 2007 proposal to develop the school reads: "Holistic education is no longer a niche interest – it is for every child everywhere" (J. Miller, 2010, p.125).

Green School, Bali (2020) is the founding school of what is becoming a "global education network committed to making our world sustainable" (Connect with us). The Bali bamboo campus "ignites the senses" for its global community of students who experience "daily growth as a whole person" (Welcome). The school offers a "Learning Programme with a Purpose": A new kind of education is needed "for children to prosper and humankind to flourish". The principles of learning include being "relationship centred and holistic". The different sections of the school are "learning neighbourhoods". The "Green School Way" educates for sustainability through "community-integrated" learning, where the "holistic, student-centred approach" inspires students "to be changemakers" (About).

Ross School, NY (Upper School, n.d. 2020) fosters "global citizenry". Its Mission "is to change the way education meets the future; to foster interdisciplinary, integrated thinking … ; to engage fully in the global community; and to facilitate lifelong learning". The school is "educating the whole child for the whole world – mind, spirit and body". The "Spiral Curriculum is based on world cultural history and the evolution of consciousness", weaving "knowledge in an integrated manner", "into a rich tapestry". The Lower School (Lower School, n.d. 2020) is "a unique and

enchanting place", where students learn and practice "Core Values", ideals "they aspire to as they strive to make the world a better place for themselves and others". The values and guiding principles include compassion, cooperation, responsibility and mindfulness - "whole body and mind awareness of the present moment".

Suarez-Orozco and Sattin-Bajaj (2010) describe Ross School[220] as an "organic sanctuary for learning" (p.5). Its campus "is embellished with … the world's great art" (p.vii). At Ross there is deep respect for individual students (p.115), who are invited to know themselves in order to serve (p.141). The authors believe that contemporary schooling needs a new agenda that is both local and global (p.1). "The challenge to educators … is to develop models that nurture engaged and ethical citizens" (p.2). The authors believe engaging, vibrant and academically rigorous schools are "typically organized around a master narrative and animated by social practices and cultural models that align to the values, ethics and worldviews encompassed in that narrative (p.4). Ross School does this.

Conclusion

The Chapter has undertaken these things:

[220] The authors note Ross School has a companion school in Sweden (Chapter 13).

- To complete the holistic paradigm of the thesis being offered in response to Faure and UNESCO (1972), and to situate it in an ontology of the holistic principle of the ‘whole world’
- To examine and offer scholarly expositions of holistic education arguing that such concepts are not just alternative ideologies, but grounded in the fundamental nature of the universe, and essential to the future of humanity
- To provide examples of different ways of practising holistic education, and holistic learning, focusing on whole children for a whole world.

The Chapter shifts the conceptual basis of the thesis. Holistic education is more than an alternative ideology. It expresses the holistic principle of the universe which requires that the ‘ultimate aim’ of education is to ‘educate for humanity’.

CONCLUSION: Educating for humanity

The thesis has interrogated the proposition of Faure and The UNESCO Commission (1972) for an ultimate aim for education conceived in terms of human completeness and 'learning to be' in the world. The interrogation has considered the proposition with respect to schooling and early childhood education.

Faure and The UNESCO Commission (1972) offered a humanist vision for education, and assumed four dimensions of human being to be integrated in a lifelong journey of learning. The vision is still current (Bokova, in UNESCO, 2015). However, the UNESCO Commission did not develop a complete conceptual framework to precede their vision. The thesis research has found the world of education has not apparently done so as they suggested. The thesis offers such a framework.

The thesis accepts the ideology of the UNESCO (1972) vision and proposition for an ultimate aim for education conceived in terms of individual human development and participation in the shared human world. It has reframed the terms of the proposition.

- The ultimate aim of education is conceived as 'educating for humanity'.
- The terms 'completeness' and 'integration' of human being are conceived as 'wholeness'.
- Learning to be in the world is conceived in terms of holistic learning and whole world.

In response to the UNESCO Commission (1972) the thesis offers a holistic paradigm for human development, learning and world participation. The paradigm emanates from diverse educational discourse, but fundamentally from an existential holistic principle of the universe.

The thesis has treated the UNESCO (1972) proposition as having five conceptual elements:

- The aim of education, proposed as the 'ultimate' aim
- 'Dimensions' of human being
- Human learning in terms of 'learning to be'
- Human 'completeness' and integration
- An individual sense of belonging to the world

The thesis has explored each of these elements. Human nature and learning have been explored twice – first through the lens of the dominant concepts of educational discourse, and secondly through the lens of concepts of holism. Discussions of 'aims' and 'world' provide the bookends to the explorations of human nature and learning.

These conceptual elements are reframed in the thesis in particular ways summed below.

- The dimensions of human nature to be integrated were initially conceived by UNESCO (1972) as physical, intellectual, emotional and ethical. The thesis terms these 'domains' and extends them to include social, aesthetic, and spiritual/naturalist/ existential domains. Taken together and integrated, they

represent a psychological/physiological concept of ‘whole child’. This concept is more appropriate to schooling and early childhood education than ‘complete man’. For formal education to aim at wholeness of child as human being requires the recognition and development of all these domains, in an integrated way, in each individual child.

- The concepts of whole child offered by the thesis also take into account the contexts affecting each child’s development of wholeness. UNESCO (1972) commented on the influence of contexts but was unable to pursue it. All the contexts – internal and external – of each child, need to be integrated into a developmental holistic framework.
- The domains of human nature are also the domains of human learning. They are all necessarily involved in human learning which occurs holistically. The human brain and nervous system functions as a neurological network. Wholeness of child and human being requires wholeness of human learning.
- The concept of wholeness (completeness) of human ‘being’ is not only an ideological concept to be proposed and adopted as a preference by scholars and schools. It is an existential principle. The conceptual framework of the thesis culminates in this principle.

The fervency of such a vision for educating for humanity - for lifelong education, or for schooling and early childhood education only - does not however guarantee its adoption. Voices arguing for such a vision are still spoken of in the thesis as ‘alternative’. In turn, adopting such a paradigm does not guarantee that in

consequence each individual child, as human being, will become ‘complete’, or ‘whole’ and participate empathetically in human society and the natural world. The following issues are the fundamental matters - to be resolved by the world of education today and tomorrow - that are derivative of the UNESCO (1972) proposition and its reframing in the terms of the thesis:

- The concept of an ultimate aim for education conceived in terms of educating for humanity
- A concept of human wholeness, whether in terms of integrating domains and contexts, holistic learning, or human capacities and personalised learning
- A concept of holistic learning, evolving with the findings of neurological research, as the determining principle of human learning, and how this affects the daily practice of schooling and early childhood education
- The concept of the holistic principle as the defining principle of the universe, requiring all education, but particularly schooling and early childhood, to pursue holistic education as the way to aim to educate for humanity
- Given such a conceptual framework, how then is the development of each human individual to be pursued in ways that allow for individuality, personal autonomy, cultural traditions, and the moral dilemmas of human life experience?

With respect to the last of these issues – individual moral development - the thesis has offered two possible approaches. The first is the concept of self-regulation, the second is the concept of transformational learning, inherent in a concept of holistic

education. Neither approach guarantees outcomes of human wholeness. Both presume a psychological and physiological individual human capacity that can be developed. Transformational learning can lead to a profound change in an individual, provoking a sense of interconnectedness (Miller, J. 2006, p.8). Transformational learning conceived in this way encourages the development of self-regulation that has both a personal and a universal orientation.

That individual human beings are capable of self-regulation – of thought and behaviour - has been proposed by von Glasersfeld (1995, Thesis Introduction), Gecas (1982, Section 2.2.2), Ormrod (2012, Section 3.1), Hattie (2012, Section 3.2.3.3) and Shanker (2012, 2018, Section 5.2.5). It is moreover a neurologically based function of the human brain (Cooper-Kahn & Dietzel, 2009, Section 5.2.5). Archer (2012, Section 5.3) believes mindfulness training improves self-regulation.

The voices of the thesis conceiving education and schools in holistic ways that will prompt individual and societal change towards a global vision, use different language. They describe it as ‘transforming’, or ‘transformative’ (Adams, 2000, Seymour, 2004, Section 1.1; Education Scotland, 2013, Bokova, 2015, Section 1.2; Grinberg, 2013, Section 1.4.2; Scotch College, 2017, Section 1.5.2; Louv, 2011, Section 2.2.3). The term ‘transformational’ is particularly used with respect to learning that involves change in a person’s frame of reference towards themselves and the world (Jarvis, 2006, London, 2012, Mezirow, 2009, Kegan, 2009, Section 3.2.1).

Voices of scholars who conceive education and learning holistically are confident in its capacity to support individual transformation. Johnson (2013) believes in the human capacity for transformation of thought and behaviour through learning (Section 6.1.1). Whole child learning assists transformational learning (Pound, 2013, Section 5.1.1). Holistic education is education for transformation (Schreiner, Baney & Oxley, 2005, Section 6.1). The underlying view of transformational teaching and learning is that everything is connected: Transformative teaching develops empathy and social responsibility (Miller, 2010, Section 6.1.1).

The conclusion to be drawn here is that although individual and collective transformation to live empathetically and contribute to the world's 'wholeness' cannot be guaranteed, it can be deliberately envisioned and pursued by scholars, educators and governments following the thesis paradigm. The thesis paradigm provides the theoretical and practical weaponry (perhaps the only weaponry) specifically aimed towards a vision of as many human beings as possible participating in and contributing to world and human wholeness.

The thesis has sought to identify and collate "the best that has been thought and said" (Arnold, 1869, Preface) in the world of education with respect to the aims and concepts of human being and learning for schooling and early childhood education. In outcome, the thesis offers a mosaic, a 'jigsaw' of theory, research and practice. Highlighted in that mosaic is an integrated paradigm, based on a holistic principle of the human universe, of 'educating for humanity'.

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