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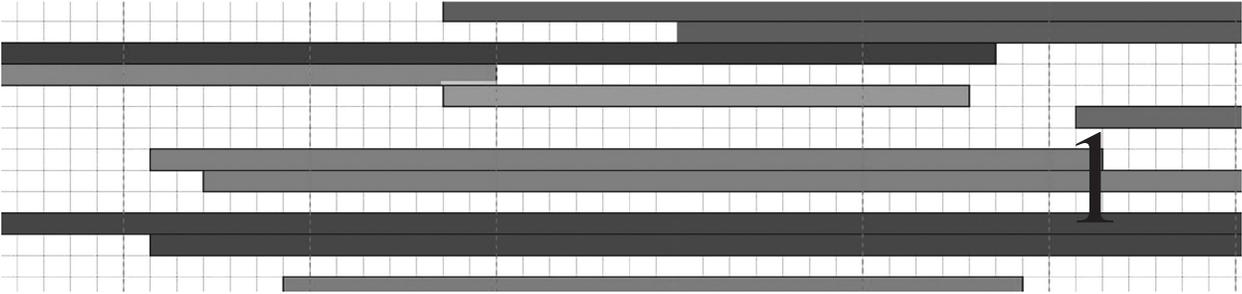
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Introduction

Dominic Wyse, Louise Hayward and Jessica Pandya

CURRICULUM AND ITS MESSAGE SYSTEMS: FROM CRISIS TO RAPPROCHEMENT

The stimulus for a new study of curriculum came initially from an interest to explore the nature and prevalence of challenges, described by some as a ‘crisis’, facing the academic field. One of the most serious challenges perceived by scholars was the unsettling disparity between academic analyses and the rapid and increasingly strong intervention by governments around the world into national curricula. For at least a decade politicians’ perceptions of the risks that accrue if a nation state is ranked too low in the international tables of comparison based on standardised assessments (typically of samples of 15-year-olds pupils in schools) had intensified. The editors of *The SAGE Handbook of Curriculum, Pedagogy and Assessment* saw a need for a comprehensive account of theory and research that would develop understanding of curriculum in the

context of education in different regions of the world, and take account of and provide new perspectives on the *performativity* that was part of a trend in a wide range of international contexts.

It was also the case that there had not been any major comprehensive academic volumes on curriculum for some years. David Scott’s work in the first decade of the 2000s remains important (for example, his historical account from 2003 *Curriculum Studies: Major Themes in Education*). Connelly et al. (eds.) (2008) continued the somewhat distinct US emphasis on instruction in their *SAGE Handbook of Curriculum and Instruction*. This excellent volume makes evident the need to understand traditions of curriculum research from the perspectives of Europe and the UK, and the ways in which these may or may not integrate with US perspectives. Another important recent comprehensive academic volume is William Pinar’s *International Handbook of Curriculum Research* published in 2013 in its second edition. The country-based

chapters of Pinar's edited collection complement the thematic approach to curriculum, pedagogy and assessment in our volumes, which include many country-specific and region-specific cases (we are also delighted that Pinar and Jung-Hoon Jung have written a chapter). The contexts for international trends of scholarship that co-exist and conflict with what some see as emerging global education policies include language as a significant factor. For example, curriculum scholarship in the UK has benefited from interactions with researchers from Australia, New Zealand and other English-dominant nations (including those that are part of the UK's colonial legacy), and yet paradoxically although the US and the UK also share the English language their traditions of curriculum scholarship have been distinct. Similarly, in spite of the UK's geographical and political links with the wider European Union, there have been distinct curriculum trends, such as *didactics*, that have perhaps not had the influence that they might have in the UK. It is also important to note the recent growth of 'home international comparison' in the UK context revealing significant diversity in the national curricula of the four nations of the UK, with England increasingly seen as an *outlier* (Wyse et al., 2013).

The overall aim of the first section of this introductory chapter is to theorise the interconnections and inseparabilities of curriculum, pedagogy and assessment. We begin with a brief account defining our three key terms. This is followed by a review of the methodological thinking that influenced the project as a whole and also this introductory chapter. Next we outline some historical trends in the curriculum field, and then advance our view of a socio-cultural turn in the study of curriculum, pedagogy and assessment, and the possibility of rapprochement in the contested territory of knowledge and curriculum. The second section of our introductory chapter introduces some of the key findings that the authors of the chapters in the volumes identify. We conclude with a brief final view of what we see as some of the

key outcomes for research, policy and practice in future.

DEFINING CURRICULUM, PEDAGOGY AND ASSESSMENT

The etymology of the word curriculum includes its literal meaning as 'course', and figurative meaning 'career', derived from Latin (Oxford English Dictionary (OED), online). The first use of the word curriculum documented by the OED was in 1633, where it appeared in the records of the University of Glasgow (by coincidence editor Louise Hayward's current workplace). The use of curriculum in 'curriculum vitae' is the more common every day usage, but the more technical educational sense of curriculum is also familiar to many in, for example, discussions about national curricula. The academic definition of curriculum is, like most academic definitions, one of contestation. One trend of curriculum conceptualisation has placed knowledge as the central defining feature. In early modern times we see this trend in the work of Tyler (1949) and Bloom (1956); we also note Bloom's professional role in assessment as a dominant influence on his way of thinking about curriculum.

A trend of curriculum conceptualisation and analysis has focused on the links between curriculum aims, power and control. For example, the rationale for a special issue of *The Curriculum Journal* that addressed curriculum aims, power and control was framed around the connections between Dewian pragmatism and Bersteinian sociology of curriculum (Wyse et al., 2014a). Bernstein (1975: 199) identified curriculum, pedagogy and evaluation as three message systems that work to make education 'an agency of socialization and allocation'. For Bernstein, curriculum represents valid knowledge; pedagogy is the valid transmission of knowledge; and evaluation is the valid realization of knowledge. In addition to contributing the idea of three message

systems, and the theories of ‘classification’ and ‘framing’ in curricula, Bernstein also articulated the more prosaic definition of curriculum as ‘the principle by which units of time and their contents are brought into special relationship with each other’ (Bernstein, 1971: 48). It was argued in one of the papers of *The Curriculum Journal* special issue that knowledge is indeed a defining feature of curriculum that requires the foregrounding of the social as part of a complex epistemology that draws upon social constructivism, social realism, epistemic realism, inferentialism and critical realism (Scott, 2014). Another paper, drawing directly on Dewian pragmatism, proposed the idea that knowledge perhaps should be seen as both constructed and real, informed by the ‘transactional theory of knowing’ (Biesta, 2014).

Pedagogy is derived from Middle French (instruction, education), post-classical Latin (school, teaching, education) and ancient Greek (office of a pedagogue, teaching, training) (OED, online). Its current definition is ‘The art, occupation, or practice of teaching. Also: the theory or principles of education; a method of teaching based on such a theory’ (OED, online). Notably a concept of ‘education’ was present from the very first definitions, but more recently the relationship between theory and practice is also evident. Pedagogic traditions in different regions and states of the world are influenced by culture, but the nature of cultural influences is far from straightforward (as the different views in the chapters by Ang (Chapter 9, this handbook) and Care and Beswick (Chapter 57, this handbook) that explicitly consider culture and comparison reveal). Like Alexander (2000), the editors of this handbook conceptualise pedagogy as an intervention in the development of an individual: through teaching that is informed by the history, values and ideas of the culture in which the teaching is enacted. From the late eighteenth century until the early nineteenth century, pedagogy in schools in the UK and the US was linked to a view of learners as passive recipients of knowledge in an education system designed

to socialise citizens and reduce crime. Pedagogy was strongly linked to discipline. Two hundred years later, understandings of pedagogy are more complex and infinitely more nuanced although pupils are still often viewed as passive recipients.

Assessment is the third of Bernstein’s message systems. Its etymology from Old French and Late Latin is ‘to sit by (e.g. as an assessor or assistant-judge)’ (OED, online). By the period of Late Latin the connection with finance, and particularly taxation, had already been made. In view of the significant financial rewards for commercial assessment systems, and the neo-liberal orientation to international comparative data based on pupil assessment, the origins in taxation are not insignificant for our purposes. The tension between assessment as sitting beside a learner supporting learning, and assessment for wider purposes of accountability remains palpable.

Valid realisation of knowledge, as Bernstein articulated, aligns with assessment as reasoning from evidence (Pellegrino et al., 2001) to discern the nature and extent of learning that has taken place; however, valid realisation is also dependent on purpose. Newton (2007) identified 22 main assessment purposes, each of which could individually generate multiple sub-purposes. The tensions that lie at the heart of educational assessment are commonly conflicts of purpose. Assessment information that is appropriate for one purpose may also be used inappropriately to serve other purposes. Thus, for example, data from tests that provide information about limited aspects of the curriculum are used as a proxy for whole system effectiveness, a purpose that goes far beyond the dependability limits of the data. Conflicts of purposes for assessment, and the differing value systems that lie behind their enactment, present education systems internationally with what may be the major challenge for curriculum theory in the twenty-first century, a challenge that is explored in depth in these volumes.

The methodological approach to the volumes was first underpinned by our particular epistemological orientation. As we have

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already indicated, the volumes are built on our interdisciplinary sensibility that draws upon the philosophical and the sociological, and although it is possible to separate curriculum from pedagogy and assessment for the purposes of analysis, it is not, in our view, sufficient if the fullest understanding of curriculum is to be attained, and if consideration of both theory and practice is the key to the fullest understanding. We recognise the limitations of the organisation of sections in the volumes, caused partly by the linear nature of printed materials, but suggest that the structure represents a significant accommodation of both the need for analytic distinctness and analytic integration. Further to the thematic integration of the message systems of curriculum, pedagogy and assessment, the chapters address to varying degrees the four main substantive cross-cutting themes of the volumes:

- 1 The intersections between the curriculum and children's learning
- 2 The agency of teachers as professionals
- 3 Policy and performativity
- 4 Globalisation

Our main attention is to empirical evidence and robust theory in the context of globalisation, in part as counter to anecdotal, ideological and rhetorical accounts of curriculum, assessment and pedagogy.

The process, or methods, of development of the volumes began with the editors' proposal being subject to peer review by seven academics from different countries (to whom we are very grateful for their observations). The high level of support from reviewers (strong support from six out of seven reviewers) resulted in the publisher's recommendation to double the originally intended size of the project as one volume (with approximately 30 chapters) to two volumes (approximately 60 chapters). Key criteria for selection of authors were established and included the following: the expertise of the author was relevant to the volume section and topic of the chapter initially proposed by the editors; if the author(s) had published research of international significance in

the area of their chapter; if the geographical focus of some of each chapter would contribute appropriately to the spread of regions represented in the volumes as a whole; and whether the balance of authors represented a reasonably equitable distribution along the lines of gender and cultural backgrounds.

All chapters were peer reviewed by one of the editorial board (members who were selected for their eminence in the curriculum field) and by at least one of the editors. To ensure reliability of peer review judgements by the editors, a calibration process involved three chapters initially independently reviewed by each editor and then comparisons about judgements made in order to agree on the criteria for review of chapters and also the reliability of editorial judgements. Explicit criteria for review of the chapters were established that included, for example, the need for attention to theoretical framing and the need for authors to review sufficiently empirical studies and/or scholarship internationally in the field of the chapter. Reviewers' comments were related to the criteria, and authors were expected to address reviewers' comments as part of their revisions to their chapters. Final reviews were carried out by the lead editor of the particular section and, if necessary, authors were required to carry out a second round of revisions prior to copy edit and proof stages for the manuscript. The editors' analyses of the chapters included the identification of significant themes. These themes were used to frame the reporting of the findings from the project as a whole, and as the basis for sections of the introduction, subject to review by all editors. The writing process for the editors' introductory sections was a final analytic phase where our emerging ideas were tested and either included or rejected.

HISTORICAL TRENDS IN CURRICULUM AND CURRICULUM STUDY

Long before curriculum was understood as planned human activity intended to achieve

learning in formal educational settings, important thinking centred on curriculum. As McCulloch (Chapter 3, this handbook) makes clear, Plato's *The Republic* was conceived on the basis of an education for three different social groups of learners. The highest group, the philosophers, were to have training in music and gymnastics, and later in courage and self-control. *The Republic* established the importance of grammar, logic and rhetoric, which in the Middle Ages became known as the Trivium. The addition of the subjects of the Quadrivium, arithmetic, geometry, music and astronomy, also recommended by Plato, were seen as the basis of the seven liberal arts.

In modern times, conceptions of curriculum have been influenced by at least two major geopolitical trends. Globalisation has been manifest in political forces of performativity that have resulted in attention to standards, measurement of learning, increased scrutiny of teachers and schools, national curricula and linked assessment, and emphasis on education as driver of economic prosperity. At the same time, the unique cultural, historical traditions of nation states, and the fight for democracy and self-determination have resulted in different perceptions and counter positions to those influenced by performativity. Historical traditions of curriculum in the UK, the other countries of Europe, and in the US reflect these two major geopolitical trends.

Much of what is regarded as contemporary assessment has its traditions in the educational ideas of Galton (1869) and Binet (1905), but Willbrink (1997) argues that the history of assessment can be traced back to the fourteenth century in the Netherlands when Joan Cele, the rector of a popular Latin school in Zwolle, organised pupils into eight streamed classes according to the pupils' perceived ability. Examinations were held twice a year to promote or to demote students. The examination for pupils in the lower classes invited them to recite translated Latin texts; examinations for pupils in the upper classes tested their understanding of the meaning of the translated

Latin text. Students from this school moved to schools and universities across Europe, including the University of Paris. They carried with them Cele's ideas and they influenced practices in many key European educational institutions. Thus, the European traditions of graded examinations for the ranking of pupils on the basis of their performance were born – traditions that although designed mainly for educational élites were inculcated uncritically into mass education systems. In many ways, the historical roots of assessment can still be seen, for example in the idea that assessment is synonymous with testing and with the labelling of learners.

An important historical moment for curriculum study in the UK was the establishment of universal schooling in the nineteenth century. In 1833, the excessive employment of children in factories was restricted, and the government established a grant to be used by the National Society for Promoting the Education of the Poor, and also The British and Foreign School Society, to promote religious and moral education and to extend literacy so that working people could make a full contribution as citizens (UK Parliament, 2015). What can be described as the first national curriculum in the UK was 'The Revised Code of 1862'. The revised code included specifications on reading, writing and arithmetic according to children's age as expressed in 'standards' from one to six, and a system of payment by results by which teachers were paid eight shillings for each child who was judged by an inspector to have passed the examination of the '3Rs' (Reading, wRiting, and aRithmetic) in their standard. A failure in any one of the '3Rs' would mean that the grant was reduced by two shillings and eight pence. Four shillings was awarded for general merit and attendance. The 1870 Education Act was the first legislation in the UK to specifically address education at the national level. This Act established the differences between the religious teaching of the 'voluntary' schools versus the 'non-denominational' teaching of the 'board' schools (UK Parliament, 2015).

Important moments in the modern era of curriculum study and development in the UK include the work of Lawrence Stenhouse at the University of East Anglia and related work (Baumfield, Chapter 10, this handbook). Recently, a growing sense of both the continuing academic importance of curriculum to education and the challenges identified earlier in this chapter in relation to performativity and academic study resulted in the inauguration in 2011 of a new Special Interest Group on Curriculum, Assessment and Pedagogy as part of the British Educational Research Association (BERA). At the same time the long-standing journal *The Curriculum Journal* became part of BERA's portfolio of international journals that includes *The British Educational Research Journal*. *The Curriculum Journal's* origins include its philosophical engagement with the relationships between the theory and practice of curriculum. This engagement continued under the editorships of Mary James (who later became president of BERA) and Bob Moon. Louise Hayward and Dominic Wyse were members of the first editorial team of *The Curriculum Journal* under BERA, a role they continue with Steve Higgins and Kay Livingston.

The North American, Ralph Tyler's (1949) *Basic Principles of Curriculum and Instruction* is regarded by some as the most influential book (in modern times) about curriculum (Pinar, 2013). Tyler made the cycle of curriculum development (planning, evaluating, revising) central to curricular research. It was not until the late 1960s that research in the field shifted from curriculum 'development' to curriculum 'research'. In Pinar's account, politicians and policymakers took over the curriculum development process in the 1960s in a series of events that pushed academics involved in curriculum development to become curriculum researchers, studying what was taught and asking key questions about the content. They began to examine the histories of curriculum, the power dynamics of curriculum research and also the identity of politics involved in curriculum research.

Pinar describes a third turn, starting in about 2001, which was the internationalisation of US curriculum research. In this phase, research about the curriculum (finally) began to extend past US national perspectives and boundaries.

The legacies of this trajectory of curriculum study are now visible in the titles (and course offerings) of many masters and doctoral programs in schools of education in the US. Stanford University has a Curriculum Studies and Teacher Education program; Teachers' College, Columbia has a Curriculum and Teaching program; Michigan State University has Curriculum, Instruction, and Teacher Education; and the University of Illinois at Urbana Champaign, the University of Wisconsin-Madison, and Indiana University Bloomington all have Curriculum and Instruction departments or programs. The contents of these programs (the areas of study and courses on offer), however, evidence the second phase Pinar describes, of curriculum research and examination. For example, the University of Indiana Bloomington's program asks these critical questions:

What should we teach in schools, and how should we teach it? Who decides what should be taught? How does an increasing emphasis on education standards change the way we teach students of different genders, cultures, or socioeconomic backgrounds? How do we provide individualized instruction in a group of students of different abilities and interests? Just as importantly, how should we prepare the next generation of teachers for the 21st century classroom? (Indiana University, 2015)

The internationalisation of curriculum research in the US, the third phase Pinar describes, is still less visible in US curriculum and instruction programs/departments.

The European tradition of thinking about curriculum, learning and teaching has significant differences from the traditions of the UK and the US. Although the UK and the US were developing curriculum studies, continental Europe and the Scandinavian countries were focused on *Didaktik* (Pinar, 2009). In spite of being fundamental concepts in Europe and Scandinavia since the emergence

of public schooling in the fifteenth century (Hillen et al., 2011) the concepts of *Didaktik* and *Bildung* in German-speaking countries and *la didactique/les didactiques* in French-speaking countries have no literal translation in English. Education in France is embedded in encyclopaedism, with a strong focus on rationality and universality building from the values of the French Revolution and its concern with *égalité*: the importance of society acting in the interests of the majority of its citizens. These ideas have influenced the nature of the curriculum. For example, having universality as a guiding principle has led to a curriculum design where all students have very similar curricular experiences at very similar times. Traditionally, the principle of *laïcité* has meant that social, religious and moral education are the responsibility of the home rather than the state, and teachers are primarily concerned with the intellectual development of the child. More recently, changes in society have led to changes in these practices. Education in Germany is embedded in humanistic philosophy, incorporating encyclopaedic rationalism and humanist moralism. The curriculum seeks to bring together academic knowledge and moral education. Education is seen not simply as academic: there is also an emphasis for every child on the importance of other qualities such as commitment and diligence. In Scandinavian countries the attention to social justice has had a longstanding impact on their conception of curriculum, but more recent experience in Sweden demonstrates the impact that neo-liberal forces can have even on what appeared to be such a stable system. Hudson (Chapter 7, this handbook) offers an insightful analysis of differences between traditions in relation to teaching and learning, focusing on the German and Scandinavian traditions of *Didaktik/Fachdidaktik* (general didactics/subject didactics) and the Francophone traditions of *la didactique/les didactiques*. *Didaktik* places the professionally autonomous teacher at the heart of the learning process and provides a frame for teachers to ask questions about their professional practice.

There has been an increasing focus on how the learner makes sense of the content in each area of the curriculum, and methodological tools have been developed to allow comparison of didactical practices at different levels of the system in order to provide an evidence base for reflection. For example, in Action Theory Didactics, emerging from comparative didactics, teaching and learning are seen as joint action with participants who have interdependent purposes and expectations. Dialectical design, a cyclical model of didactical analysis (design, development, interaction and evaluation) is a tool that may be used by researchers or by researchers and teachers working together to deepen understanding of teachers' professional judgement.

THE SOCIO-CULTURAL TURN IN CURRICULUM, PEDAGOGY AND ASSESSMENT

The influence of socio-cultural theory on curriculum, assessment and pedagogy has grown, but this influence is diffuse and complex, embracing sociological and philosophical perspectives. For example, social constructionism with its central idea that 'truths' are held to be social artefacts is a powerful influence. However, this is contested territory because there are some who question socio-cultural theory as the most appropriate way to understand curriculum because of the alleged neglect of realist traditions (for example, Young, 2008). Although there are significant critiques of pragmatism, in Biesta's (Chapter 5, this handbook) view it remains a productive way for engaging with the question of knowledge in curriculum conversations. Based heavily on the work of Dewey, Rosiek and Clandinin's (Chapter 19) use of pragmatism links the ordinary experiences of teachers with an emphasis on inclusiveness and respecting and listening to others' experiences. Used this way, the pragmatist orientation seeks to work towards a better future, engaging with others and

acknowledging the importance of global, local and personal histories.

The impact of neo-liberalism and globalisation on education internationally is clear from the chapters focused on pedagogy and assessment, with the important caveat that the curriculum as planned and the curriculum as lived are important distinctions (Jung and Pinar, Chapter 2, this handbook). The authors of the chapters on pedagogy and assessment frequently interrogate issues of power, empowerment and change. Even in states with a long history of democracy, the democratic roots can be shallow (White, Chapter 4, this handbook). There is little dissent from the view that for educational change to be meaningful, teachers need to be empowered. Alexander (2000: 29) is particularly critical of instrumentalist educational policies where recommendations are made 'that fail to connect with cultural contexts as if they were independent of each other'. In such circumstances, teacher, pupil and community agency are likely to be compromised.

Agency can be understood as an 'emergent phenomenon' (Priestley et al., Chapter 12: 22, this handbook) involving the inter-relationship of the individual, the context, resources and structures. The ecological model of agency adopted by Priestley et al. (Chapter 12, this handbook) concerns how teachers 'might enact practice and engage with policy' (p. 22). Teacher agency appears to be crucial to professionalism, and in particular to the understanding necessary for educators to challenge the hegemony of neo-liberal philosophies implicated in many educational developments. The neo-liberal agenda has consistently underestimated or undervalued the complexity of teaching as a process embedded in theories and values, evidence and justifications. Gardner and Galanouli (Chapter 44, this handbook) suggest that self-efficacy is a critical determinant of self-regulation and, in common with Priestley et al., argue that curriculum innovation depends upon engaging teachers meaningfully in change processes. Hill (Chapter 48, this handbook) reflects on theories of teacher agency in the

context of professional learning communities for assessment for learning, and argues that their efficacy depends upon teachers having a theoretical understanding of learning, teaching and assessment, which can be linked to the enactment of small-scale projects to promote ownership and trust.

Assessment is commonly seen almost as synonymous with the performativities of judgement, ranking, league tables and standardised tests. Wyatt-Smith and Looney (Chapter 50, this handbook) and Klenowski and Carter (Chapter 49, this handbook) use theories of globalisation to analyse the disconnect between assessment of learning and assessment as performativity. Using the concept of reflexivity, and the realist social theory of Margaret Archer, Wyatt-Smith and Looney highlight the tension between policy statements of professional standards in England and Australia and the complexity of putting these ideas into practice. The chapter from Nusche (Chapter 52, this handbook) begins to explore alternative visions of the inter-relationship of learning, teaching and assessment in the twenty-first century. Harlen (Chapter 43, this handbook) builds upon Pellegrino's argument that the role of learning theories in decisions about assessment is often overlooked, and yet the acceptability of using assessment results for purposes of accountability depends upon an understanding of how people learn and how to measure that learning. Black (Chapter 45, this handbook) suggests that, apart from Pellegrino et al. (2001), very little theory on curriculum or pedagogy pays attention to assessment, which is commonly considered to be 'marginal or (an) external necessity and not... an intrinsic feature' (p. 43). Black presents a new model that incorporates instruction, learning and curriculum and relates them in a distinctive way.

If teachers are to resist undesirable neo-liberal influences on their work they may need to become liberatory curriculum activists (Ayers et al., 2008) who are willing and able to challenge policy and to create curricula designed to meet the needs of their

students and communities. Adaptive expertise is needed to use conceptual knowledge to bring new insights help address problems (Le Fevre, Timperley and Ell, Chapter 21, this handbook). There is potentially much to learn from those who have worked with traditionally marginalised groups where communities have taken action using democratic processes to serve the interests of all groups better (Sleeter, Chapter 15, this handbook). Freire and Freire's (1994) dialogical encounter is a central tenet of the Roma Project where young people learn to think together and to live together in inclusive public schools (Melero et al., Chapter 13, this handbook). The Freires' ideas, in common with Habermas's theory of Communicative Action, encourage teachers and learners to work together in different power relationships to plan and enact the curriculum through dialogic consensus. Lundy and Cook-Sather (Chapter 17, this handbook) examine pedagogical encounters in terms of power, position and agency in relation to student voice and curriculum development in particular. They caution that reductionist forms of critical pedagogy can reinforce existing patterns of domination but when 'understood as contextualised efforts to work across differences', critical pedagogy can generate practice that is consistent with children's rights and respects the rights of a diversity of students. Creating more equitable power relationships is a complex process where personal and collective histories matter because learners' engagement with pedagogy is shaped by the gendered present and gendered histories (Elwood, Chapter 16, this handbook) and also by colonial practices in countries that aspire to live in a globalised post-colonial era (Dunne and Adzahlie-Mensah, Chapter 14, this handbook).

The areas of the curriculum addressed in these volumes, including traditional school subjects and cross-cutting elements, are theorised in relation to the social context of learning in the classroom; the ways in which individuals take up curricular knowledge and construct meaning in different subject areas; and the external forces that shape curriculum,

assessment, and pedagogy. For example, the socio-cultural context is central to theorising in performing arts curricula because, as Franks (Chapter 23, this handbook) makes clear, 'Art is the social technique of emotion, a tool of society which brings the most intimate and personal aspects of our being into the circle of social life' (Vygotsky, 1971: 249). Art, which exists at the intersection of the individual and social, of the abstract and concrete, and the intellectual and affective, is a tool with which to develop children's (and adults') communicative and expressive capabilities. As such, performing arts curricula are pre-eminently concerned with learning in, about and through the arts in a variety of social contexts. The 'play' of art is mirrored in the social context of creativity and play. In the realm of play and curriculum development, play occupies the gap described by Bernstein as 'the distance between vertical discourse and the real world', the 'crucial site of the yet to be thought' (2000: 31, cited in Rogers, Chapter 37, this handbook). This crucial site is fundamentally a social one between individuals at play. Ferrari and Wyse (Chapter 36, this handbook) echo many of Rogers' concerns in their analysis of the social context for creativity and the place of curriculum and pedagogy in fostering creativity. In relation to digital developments, Nelson (Chapter 24, this handbook, p. 23) asks us to consider not only the underlying semiotic logics of computers, but also, and more critically, the 'personal and social values...of electronically mediated experience'. Indeed, Nelson's axiological analysis of the use of computers in modern life stems from a socially constructed world view, one in which it is logical and natural to frame an inquiry into technologies around the ways they are socially valued.

The socio-cultural lenses applied by many authors to areas and subjects of the curriculum also address ideologies in the political sphere and in the academy that shape curricula, pedagogy and their attendant assessments. Ideology is particularly strongly linked to language, as research in

multilingual language learning settings has uncovered (Benson and Elorza, Chapter 35, this handbook; Llombart-Huesca, Chapter 27, this handbook). Pan's (Chapter 34, this handbook) argument about the effects of globalisation on the discourse of English language learning in China and the discourse's impact on educational policy is part of a story of globalisation and language, and the teaching and assessment of second and other languages. In multilingual contexts, the learner's habitus – or socially constructed sense of self – is supported, Benson (2013) argues, through additive and dynamic programs. Holistic, communicative approaches to language development frame the language-learning context (see Jessner, 2006). But there is also evidence that the ideologies supporting neo-liberal, standards-based curricula are inimical to the ideal conditions that support multilingual development, and run counter to the conditions necessary for the fostering of creativity in the social context of the school and classroom (Ferrari and Wyse, Chapter 36, this handbook).

The progressive, liberal perspectives of some authors challenge conceptions of reductive standards-based curricula tied to high-stakes assessment and attendant global trends showing movement away from student-centered curricula. Most visibly, Hickman and Heaton (Chapter 22, this handbook) argue that art education is an entitlement of all people, a right that was formalised in a 1990 UNESCO declaration. Similarly, Lambert (Chapter 25, this handbook, p. 23) writes about geographic knowledge as a human right, suggesting that there is an 'emancipatory power and purpose of education in initiating all young people into forms and fields of specialised knowledge and powerful thought' such as modern geographical knowledge and skills. Bell and Skiebe-Corrette (Chapter 30, this handbook) frame progressive science curricula in the context of curriculum ownership and purpose. Who ought to own the content of science curricula? Should science in schools be seen mainly as an economic driver or a tool for lifelong learning about one's world?

The theory that we advance in this introduction is a theory of the inextricable links of the message systems of curriculum, pedagogy and assessment. Pragmatism provides an important basis for understanding curriculum holistically, for example by providing the intellectual tools for systematically linking theory and practice. But this holistic understanding of curriculum is necessarily also understood in its socio-cultural milieu. The marked reaction against neo-liberalism, evident so strongly in the performativity of international comparison based upon pupil-testing in the curriculum field, is underpinned by sensitivity to agency, emancipation and democracy; however, there are risks in these powerful socio-cultural orientations. An undue reaction against 'appropriate' uses of measurement and a lack of attention to the methodological strengths of methods such as experimental work could make the curriculum field vulnerable at a time when interdisciplinarity is likely to be an important means to build new knowledge.

Curriculum, pedagogy and assessment are enacted in the holistic context of the educational experience, and therefore theoretical and empirical work is required that accounts for the relationships between the three message systems. Hence, the structure of the six parts of the two volumes includes the juxtaposition of curriculum and pedagogy (Part II), and the juxtaposition of curriculum and assessment (Part V), but also the selection of major elements that cut across curriculum, assessment and pedagogy (Part III, Part IV and Part VI) to enrich what we see as a necessarily holistic, interlinked perspective.

EPISTEMOLOGY AND METHODOLOGY OF CURRICULUM

The academic and pragmatic need to define areas of study and human activity reveals an epistemological conundrum for the study of curriculum. We have already alluded to the complexity in defining curriculum and have

presented working definitions for the volumes. However, we have to acknowledge the suggestion that it is impossible to define curriculum in ways that can be meaningfully applied to such a wide range of relevant scholarship. However, perhaps more consensus exists in the idea that curriculum is not only the organizational centre of institutionalized education but also the ‘intellectual centre’ (Jung and Pinar, Chapter 2, this handbook). We would even go so far to say that curriculum (including pedagogy and assessment) is one of the defining areas of education as an academic discipline.

The importance of socio-cultural context for all considerations of curriculum is the starting point for Jung and Pinar’s account of the field of study of curriculum whose chapter begins this first part of the volumes. As they argue, context, including global and geographical, is central. Even in their exploration of dictionary definitions and etymology of the word ‘curriculum’, geographical context and interpretation can be seen in Jung and Pinar’s chapter. The selection of information in relation to the definition of the word curriculum is taken from the US-oriented Webster’s Dictionary (rather than the another sources such as the OED) and reflects Jung and Pinar’s claim that although the concept of curriculum was imported from Europe, since the 1970s the US has been ‘the disciplinary home of academic efforts to understand curriculum’ (Jung and Pinar, Chapter 2, this handbook, p. 23). By contrast McCulloch (Chapter 3, this handbook) notes a two-thousand year trajectory of curriculum in England, and identifies Ivor Goodson’s more recent work in the UK as seminal to understanding curriculum in schools, and part of a tradition of the ‘curriculum history’ genre of historical research. McCulloch sees his study of curriculum as social history, and identifies seven key categories emerging from curriculum history: the differentiated curriculum, the liberal curriculum, the vocational curriculum, the academic subject-based curriculum, the mass curriculum, the progressive curriculum, and the imperial curriculum (McCulloch, Chapter

3, this handbook, p. 23). In an attractive metaphor he also notes the way that curricula contain ‘sacred relics from our history’ (p. 23). The similarities and differences between US perspectives on curriculum scholarship and UK perspectives are enriched through consideration of the European tradition of *Didactic*. Hudson (Chapter 7, this handbook) begins his chapter with two important cautions: that understanding of *Didactic* and of curriculum is culture-bound; and comparison of meanings of *Didactic* and of curriculum has to withstand linguistic boundaries, a process fraught with difficulties.

The nature of knowledge and its place in curricula is one of the defining issues of curriculum study and development. A key philosophical point of contention has been the relativism–objectivism binary. Biesta maintains that pragmatism, and particularly John Dewey’s transactional framework, offers many possibilities for better understanding of curriculum, and not least moving away from what he sees as the rather stale opposition of objectivism and relativism. Biesta also reminds us of the important question that Herbert Spencer asked in 1854: ‘what knowledge is of most worth’ – a question that was rephrased by Michael Apple in the 1990s as ‘whose knowledge is of most worth?’ (Biesta, this handbook, p. 23). The questions of what knowledge and whose knowledge should cause us to reflect on the wider purposes of curricula in schooling, including the overarching aims that might be established. The sociological perspectives of Johan Muller and Michael Young have had a significant impact on conceptions of knowledge in curricula. Muller (Chapter 6, this handbook) reminds us of the important sociological traditions of curriculum study, including at the Institute of Education (which became a school and faculty of University College London in 2014) where the Karl Mannheim Chair still exists and where Basil Bernstein carried out most of his seminal work, including on curriculum. In his chapter Muller takes up some of the ideas published in a special issue of *The Curriculum Journal* (Wyse et al., 2014a) and concludes:

It seems that Wyse et al.'s view that knowledge is "both constructed and real" (2014: 5) was right after all. Quite how to establish the reality of "powerful knowledge" while acknowledging its social roots remains a challenge in 2014 as it was in Mannheim's day. What is undeniably underway is a sort of rapprochement, but it remains a work in progress. (Muller, Chapter 6, this handbook, p. 23)

In a robust challenge to some scholars' suggestion that Bernstein's ideas have not been applied in empirical work, Muller provides an extensive list of empirical studies in a range of curriculum subjects and areas; however, the extent to which such work has been carried out in contexts for the youngest children is an important consideration for future research. Such work could accommodate the traditions of child-centred education that have particularly been linked with the early years, as Ang outlines (Chapter 9, this handbook). The links between child-centred theories and child development suggest a challenging context for analysis of appropriate knowledge: liberal philosophies that, as Ang argues, are built upon cultural influences.

Sociological perspectives are not the only ones to have influence in an area, such as curriculum, which could arguably benefit from multidisciplinary understandings. In England's conception of its national curriculum 2014, established by Secretary of State Michael Gove, Gove's appeal to theory (Wyse, 2015, online) included sources that ranged from Matthew Arnold (Arnold, 2009/1869) to modern psychology and neuroscience (where these fitted his ideology). A commonly held view about the contribution of neuroscience to educational practice is that the findings from neuroscience are too abstract to be relatable to the practices of teaching and learning; however, Tolmie (Chapter 8, this handbook) mounts an assertive argument showing that real progress is being made, particularly when building upon the work in traditional psychology. Tolmie acknowledges the need for collaboration between neuroscience researchers and 'educational practitioners'. Perhaps other educational researchers in more applied fields may

also be an important part of both translating and stimulating new curriculum knowledge. Tolmie is forthright in his view that research in literacy, number development, science learning and executive function illustrates the potential of the field to explain both typical and atypical learning in a coherent fashion and to identify novel pedagogical strategies that fully address individual variation in capability' (Chapter 8, this handbook, p. 22)

White's philosophy (Chapter 4, this handbook) directly addresses the practical consequences of curriculum aims considered in the broader context of democracy. White's key question is 'who should decide schools' aims?' (p. 22) The question of 'who should decide' about curriculum knowledge spans both Herbert Spencer's and Michael Apple's concerns. For example, if politicians dictate the knowledge to be addressed in the curriculum, then perhaps they deem that their conception of knowledge is of most worth. This kind of political conception is challengeable on democratic grounds, but is particularly problematic when it is counter to trustworthy evidence that suggests more appropriate conceptions of knowledge and understanding¹. The nature of evidence and its relationship with practice is an important trend in education, and society more widely. 'Evidence-informed practice', 'knowledge mobilisation', 'self-learning teachers' and schools are the modern buzzwords that reflect age-old epistemological questions dressed in new clothing. Perhaps one possible answer to Muller's suggestion of rapprochement and curriculum knowledge as a work in progress', lies in Baumfield's (Chapter 10, this handbook) articulation of practitioner research where teachers engage with traditional research knowledge, and through reflection construct new knowledge through practice.

CURRICULUM AND PEDAGOGY

In his seminal text, *Culture and Pedagogy*, Alexander (2000) argued that pedagogy,

although elusive, is the most important educational theme because pedagogy is embedded in culture, structure and policy. Zyngier (Chapter 11, this handbook) explores pedagogical issues in countries in five continents, exploring what might be done to challenge the view (Villegas, 1988) that White, middle-class culture damages the education of minorities. Zyngier offers ‘pedagogical reciprocity’ as a model where culture and pedagogy are explicitly connected, and where pedagogy seeks to connect and engage with students’ cultural knowledge. All students see themselves represented in curriculum through pedagogy that seeks to respond to students’ lived experiences. The tensions between culture and pedagogy are also explored by Priestley et al. (Chapter 12, this handbook). Their ecological model of teacher agency is used as a lens to explore practice in Scotland and Cyprus. They highlight how personal histories influence teacher agency and illustrate how teachers exercising agency in particular ways can lead to a reduction in their ability to influence policy and practice. They conclude that agency is more than teacher capacity; it is context dependent.

Engagement in dialogic conversation as pedagogy lies at the heart of the chapter by Melero et al., (Chapter 13, this handbook). They explore the concept of an inclusive public school and exemplify ideas through the Roma Project, an ongoing interdisciplinary research and education project. The Roma Project is explicitly oriented around social justice through ‘learning to learn in cooperation’. It is a dynamic process comprising collaborative thought and action: first, the group thinks through what should be investigated and then the group puts their plans into practice. Collaborative exploration and dialogic inquiry are central ideas in the project methodology.

The importance of culture in relation to pedagogy, and the impact of both on student identity, is a key theme of the chapter by Dunne and Adzahlie-Mensah (Chapter 14, this handbook). The authors question the assumptions about transformative

education, reporting on a project in rural Ghana that studied the hidden curriculum and the ways in which students understood their social positioning within the institution. Within an authoritarian school organisation, with strong disciplinary practices and a curriculum based on knowledge production, students positioned themselves as ‘nodies’. Their agency within the institution was extremely limited, but they used silence as an agentic ‘voice’. Understanding why schools and teachers in some low-income nation state contexts appear to limit the agency of pupils also requires attention to the capacity and cultural practices of teachers to counterbalance critical perceptions (Wyse et al., 2014b).

Focusing on ethnicity in the curriculum, Sleeter (Chapter 15, this handbook) compares three countries – the US, New Zealand and Canada – and their origins, political struggles and the reshaping of curricula. She argues that although globally there are frameworks and resources for working with ethnicity in curriculum, national contexts differ and thus terminologies and frames of reference cannot simply be transported across borders without attention to context. Context also plays a crucial role in gender in the curriculum. Elwood (Chapter 16, this handbook) considers how thinking about gender as a dichotomous variable (male/female) has moved to a more socially situated understanding of how boys and girls identify themselves as individuals and as learners, how they relate with subjects, subject knowledge and skills and how these are taught and assessed. The complexities of these inter-relationships are illustrated in the example Elwood cites from **Iverson and Murphy (2007)** where a male science teacher who held strong beliefs about the masculine idea of science tended to align his subject with boys, exclude girls, and attributed their absence as non-participation. Similarly, a female English teacher suggested that creative writing and novels were associated with subjective feminine knowledge and grammar, syntax and structure with objective masculine knowledge. She adapted

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her creative writing course in relation to boys to reflect her standpoint on gender, without reflecting on the gendered nature of that act or engaging with the young people to seek their views.

The importance of student voice is developed in the work of Lundy and Cook-Sather (Chapter 17, this handbook). They argue that respect for the child is fundamental to the enactment of the UN Declaration on the Rights of the Child. Respect involves ensuring that every child has the opportunity to influence matters that affect him or her. The authors propose the development of a rights-respecting curriculum. This model builds upon Dewey's notion of a respected and responsible self, developed through a curriculum constituted by the interaction of teachers, students and knowledge. The model shares many of the features of the Roma Project (Chapter 13, this handbook). Lally (Chapter 18, this handbook) takes forward the theme of enhancing student voice through innovative pedagogies exploring ways in which power relationships between teachers and learners might shift fundamentally using the potential of the Internet to create virtual worlds where the voices of learners are dominant. He described the Inter-Life project and the major challenges experienced by the project participants in their attempts to create a virtual research community with young people. Lally describes a workshop in Trinidad where young people interact in the virtual world and argues that new forms of interaction offer new opportunities to understand issues such as the development of voice.

The growth of instrumental education policies is having an impact on initial teacher education in some countries. Rosiek and Clandinin (Chapter 19, this handbook) show that this movement has affected teacher education programs, which are compelled (sometimes by law) to prepare new teachers to implement curriculum policies. They argue that preparing teachers to be curriculum 'makers' is essential. Teachers are the professionals in schools who stand at the

intersection of all curricular influences, and help guide students to productive engagements with the experienced curriculum. Using autobiographical inquiries Rosiek and Clandinin work with teachers to show that although teachers cannot always control the material and institutional context in which they work, they can control the way they think about students and imagine their possibilities and their future lives (Eisner, 1985).

To counteract instrumental policies, in some countries new curricula are being developed that are built upon theories of learners as autonomous, active and reflective, and with pedagogy seen as an integral part of the curriculum. Le Fevre et al. (Chapter 20, this handbook) argue that teachers and education systems need to visualize themselves as adaptive experts. Teachers, who are adaptive experts, are able to use deep conceptual knowledge to solve problems in differing situations and exemplify how that might be put into practice using a spiral of enquiry. Problems in education that are particularly intransigent are those relating to the learning of the most vulnerable students. Le Fevre et al. identify the need for novel solutions if these problems are to be tackled.

The importance of teachers recognising themselves as lifelong learners is a theme developed by Livingston (Chapter 21, this handbook). She argues that those responsible for teacher professional learning must recognise that teachers are individual learners, influenced by their personal biographies formed by beliefs and experiences that are unique to them. She advocates key experiences for high quality professional learning: building from the theories that teachers bring with them; beginning from student teachers exploring their assumptions and experiences of learning; providing in-school opportunities for teachers to support deeper understandings of the inter-relationship of curriculum, assessment and pedagogy; dialogue as a legitimate form of professional learning; and well-trained mentors to support teachers as learners.

CURRICULUM SUBJECTS

The main foci of chapters in part three include historical trends and potential futures for subjects and their related disciplines. Five chapters centre on humanities and social science disciplines; three more focus on STEM-related subjects (science, technology, engineering and maths), and a final three examine aspects of the visual and performing arts and physical education. Socio-cultural orientations are an important cross-cutting theme for these subject groupings, for example Llombart-Huesca (modern foreign languages, Chapter 27, this handbook), Nelson (computing, Chapter 24, this handbook) and Franks (performing arts, Chapter 23, this handbook). In her chapter on the curriculum and pedagogies of teaching of world languages, Llombart-Huesca discusses trends in US and European foreign and heritage language teaching, not to contrast methods but to trace historical shifts from structuralism to the more current communicative language teaching methods. These methods rely on and are based in socio-cultural understandings of classroom contexts and communication. Issues of proficiency, standards, culture and language ideologies in relation to communicative language teaching for foreign and heritage languages are also addressed.

Although the computer may have its origins in maths and science, its significance is often in creative use, in personal and professional spaces. Nelson's chapter (Chapter 24, this handbook) offers an insightful and original take on a very broad category of ideas and objects grouped under the term 'computing'. Instead of focusing on computing's practical and functional entials, he takes an axiological approach exploring the values computers and computing have for individuals in societies. Such an approach allows him to take a historical perspective on computing in classrooms, and to note their prime value as pedagogical tools. Questions are asked about what it is we do with computers, what they may mean to us and how we as academics,

students and learners value them in different contexts. In addition to the significance of creativity to computing, creativity is also central to performing arts. Franks (Chapter 23, this handbook) links creativity with the personal, social and cultural development involved in the performing arts. He suggests that it is one of the only curricular locations where whole person learning is truly enacted, and that communication and expression, the two most critical aspects of performing arts, should be central to all curricula.

Several chapters in the section reference external forces that have shaped their subject areas, including Somerville (Chapter 32, this handbook) who highlights a major irony of environmental and sustainability education that it is not central to early years and elementary/primary curricula, but that it is – or ought to be – the defining issue of our time. Somerville provides a historical overview of the field, including major debates and some illustrative case studies. She also offers provocative future directions for a subject area that is not only about, but also buffeted by, external forces of all kinds. Hickman and Heaton (Chapter 22, this handbook) trace curricular developments in visual art education in the UK over time, and ultimately argue that an arts education should be one of the basic learning needs described in UNESCO's (1990) declaration of every individual's educational rights. They support a learner-centred view of art education in which learning through and about art takes place at developmentally appropriate times. They also take up the contested issue of the place of assessment in art education, linking growth in assessment in art education to an increased focus on learning and reduced focus on artistic and aesthetic development.

Writing about the subject of science, Bell and Skeibe-Corrette (Chapter 30, this handbook) suggest that complications have arisen from seeing science education as an economic driver, particularly in the developing world where Western models of science are often imported in the name of progress, with not enough space given to local ways

of knowing and living in the world. They advocate a move away from science as an economic driver towards scientific literacy: integrated science education for lifelong learning, addressing big ideas. Finally, they ask readers to consider who owns science education and to answer the pressing question: who is science for? In a related chapter, Teslow et al. (Chapter 31, this handbook) tackle the engineering curriculum, focusing on work in the US but making internationally applicable arguments. They describe current exemplary engineering curricula and provide holistic prescriptions for future improvements to this relatively young curricular subject. They draw upon practicing engineers' perceptions of necessary skills and attributes for the field to suggest future curricular developments in engineering and engineering-related fields.

Jess and Thorburn (Chapter 28, this handbook) take up the complicated positioning of physical education in their chapter. Like Hickman and Heaton, and Franks, these authors remind us of the critical importance of their often-overlooked curricula subjects. This neglect is particularly visible in the case of the field of physical education, which, Jess and Thorburn argue, was unable to influence national policy decisions because of its internal fragmentation, and also because there was little governmental attention to physical education as a subject until relatively recently. The lack of governmental interference did allow the field to develop curricula and assessment practices relatively autonomously, but less national attention to student outcomes meant less of a voice in policy. They also take up difficulties in assessment, especially in relation to integrating physical and cognitive aspects of assessment.

A third subset of subjects concerns curricular knowledge and meaning construction. In his comparison of history curricula in the US and the UK, Keirn (Chapter 26, this handbook) offers brief histories of each, highlighting key internal and external changes that have influenced their content over time. He also discusses the constantly changing

relationships each curriculum has to global trends. Keirn argues that ultimately both US and UK history curricula are dominated by US- and UK-centred versions of their national histories, respectively, rather than a sense of world history.

Unlike the curriculum of history or foreign languages (which, although internally contentious are externally definable – historical periods and dates, linguistic forms and structures), the geography curriculum suffers, Lambert (Chapter 25, this handbook) explains, from being neither fully defined nor fully accepted as a subject, and yet it is seen as integral to learning about the world. Lambert argues that geography was one of the first fields to engage in curriculum theorizing in the 1970s and 1980s, and makes a case for the Future Three Curriculum, arguing that everyone has a right to powerful geographic knowledge and skills.

Franchi et al. (Chapter 29, this handbook) suggest that the key issue for religious education in modern times is the extent to which, or even how, the modern school can influence students' religious and spiritual development. Issues of the appropriate scope and conceptual framework for religious studies remain unanswered, and religious education curriculum scholars often find that they must justify their subject's right to exist. Their chapter explores religious education in religious and secular schools with populations that may be religious or secular, and advocates the study of religious ways of thinking.

AREAS OF THE CURRICULUM

The traditional subjects of the curriculum have links with particular conceptions of knowledge. These conceptions rarely accommodate the transdisciplinary elements of curricula that some regard as more relevant to learning in the twenty-first century. As Albright explains (Chapter 33, this handbook), although 'transdisciplinary' can mean many things, from a vision of knowledge to a

strategy for approaching disciplines, it is fundamentally a transcendental approach to narrowly conceived disciplinary knowledge. Noting that transdisciplinarity has its roots in tertiary settings internationally, he reviews recent transdisciplinary work from early years to secondary education settings (Finland, Australia and New York City). He suggests that Bourdieu's (1989) principles for reflecting on curricula, which were posited in 1984 after Bourdieu led a Mitterrand commission on the future of education in France, may be of use to scholars working in transdisciplinary ways as well as within their own disciplines. Bourdieu's findings, proposed as a series of curricular principles (1989), advocate a curriculum focused on intellectual inquiry and, Albright suggests, are as topical today as they would have been in the 1980s. Albright's questions about the value of disciplines are useful to hold in mind as we engage with the many curricular areas presented in this section.

Creativity in the social context of schooling is a necessary curricular element, and indeed a profoundly human characteristic (Ferrari and Wyse, Chapter 36, this handbook). Ferrari and Wyse establish a tripartite definition of creativity related to originality, value and acceptance, and they take up these three terms in relation to both major creative breakthroughs and everyday creativity. They include a nuanced discussion of the role of creativity in tightly controlled curricula and in classroom contexts where teachers do not value (or even devalue) creative children. Their example of mathematics curricula is illustrative: although mathematicians value and require creative problem solving, teachers in school settings often require correct, but not necessarily creative, problem solving. They also address the complications that arise from attempts to assess creativity in schools. Rogers (Chapter 37, this handbook) addresses related issues in her chapter on play, in which she takes for granted the need for active play-based learning and focuses on the relationship of play to curricula, assessment and pedagogic practices. She explores

definitions of play, the relationship of play to culture, principles for practice and the role of play in pedagogies. Building on Bernstein's work, she argues that play may be the venue through which to bridge the gap between vertical and horizontal knowledge.

In their chapter on Multilingualism Education for All, Benson and Elorza describe multilingual curriculum development across the world, focusing first on theories and then on practices. They take a holistic perspective on multilingualism, arguing that it is distinct from bilingualism, and discuss the implications of adopting a multilingual habitus, including the need for additive, dynamic approaches. They use examples of multilingual curriculum development in low-income and language revitalization contexts, provide detailed curricular examples and discuss the implications of such work in and out of schools.

The idea of external forces influencing subject areas is also taken up in several other chapters in this section. For example, Pan (Chapter 34, this handbook) traces the rise and fall of English language education in China by chronicling changing state language ideologies in the past few decades. She argues that the rise of English education in post-Olympic China is a direct result of the forces of globalization. The changes can be seen in the 2011 national curriculum, which views English as a tool and, paradoxically, views learning English as a way to increase Chinese patriotism and spread Chinese culture.

Mills and Unsworth (Chapter 39, this handbook) tackle the literacy curriculum forthrightly, interrogating its scope, and highlighting key historical and current debates. They review the fundamental paradigms of the field: basic skills, whole language, systemic functional linguistics and critical literacies. Several key issues in the field, concerning the role of orality, the relationships that exist between home and school literacy practices (or that should exist), the role of knowledge of language and curriculum area literacies are also examined. The

future trends and potential areas of research in literacy studies highlighted (especially in relation to the communicative practices of new social media and the materiality of literacy) will be of interest beyond the immediate field. Ultimately, like many other subjects and areas of the curriculum discussed in these volumes, the underlying principle at work in literacy education is a classificatory one, wherein language knowledge is reclassified as literacy curriculum in uneven and unequal ways in schools.

Ruthven (Chapter 40, this handbook) pinpoints the beginnings of the construct 'numeracy' in the 1960s in England and follows it as it spread abroad in the 1990s. It evolved from a concern with basic skills to functional competencies, and then to a concept of foundational capabilities. Ruthven also describes the consequences of the plurality of definitions. Although there have been some efforts to advocate for numeracy across the curriculum, it is more often seen in mathematics, although there are links between numeracy and literacy studies, for example Brian Street's work on numeracy (2005; Kalman and Street, 2012) which exemplifies some of these translations. Ruthven's arguments suggest elements of transdisciplinarity within numeracy and literacy studies. These transdisciplinary efforts signal places where academics are viewing content, as well as pedagogical and assessment practices, from broader perspectives.

The problems inherent in defining STEM, as well as the challenges of integrating content, are covered by Gomez-Zwiep (Chapter 41, this handbook). She includes research on effective instruction within and across maths and science, but explains that there is very little research on STEM as a curriculum area with commonalities. As others in this volume suggest, there are tensions between narrow disciplinary perspectives and calls for more integration. Gomez-Zwiep addresses these tensions and discusses some of the research on identity and persistence in STEM fields. Hernandez-Gantes (Chapter 42, this handbook) describes the roles of career and

technical education in his chapter, focusing in particular on efforts to address career and college readiness in vocational and technical education contexts in the US. He lays the groundwork by framing the policies and structures of current practices, as well as the theoretical grounding of the field, and then focuses on curricular designs. He also offers some implications for technical education in the modern, skill-demanding world.

Finally, one chapter in this section is primarily concerned with subject knowledge, in this case knowledge about children's literature. Smith (Chapter 38, this handbook) explores the marginalization of children's literature in the UK curriculum in tandem with the burgeoning popularity of children's and young adult's fiction in publishing markets. One consequence of the marked growth of the fiction market is an increase in risk-taking in the part of publishers, leading to more innovation and a larger and more durable market than ever. Another consequence is an increase in the study of children's literature in tertiary settings. Why then, she asks the reader, might children's literature be so popular out of schools, but seemingly less valued in them? Her answers to this question lie in the policy context where, at least in the primary setting, literature has been pushed out in favour of a focus on prescriptive literacy teaching strategies. Smith suggests several uses for literature in schooling, from the importance of storytelling to the role that teaching of children's literature can have in reducing achievement gaps and increasing equity in schools.

ASSESSMENT AND THE CURRICULUM

Harlen (Chapter 43) sets out the territory of part five of the volumes by defining terms commonly used in assessment and describes three main purposes, rather than types, for assessment: formative, summative and evaluative. For example, she argues that teacher assessment or specially designed tasks or

tests can be part of formative assessment but only when the results are used to inform the next steps in pupil's learning or to adapt teaching. Questioning the dependability of testing that is common internationally cites the large body of research evidence from many countries on the negative impact of high stakes use of test data (for example, Harlen and Deakin Crick, 2003; Nordenbo et al., 2009). These issues are also taken up by Schleicher (Chapter 56, this handbook), Care and Beswick (Chapter 57, this handbook) and Takekawa (Chapter 58, this handbook) and others. Harlen concludes by offering ten principles that she argues conveys the values to guide practice and the standards by which actions should be judged.

Even the term assessment can elicit strong reactions from teachers. Gardner and Galanouli (Chapter 44, this handbook) explore teachers' perceptions of assessment. They suggest that although much of the thinking about assessment is socio-cultural, many of the practices are essentially reductionist and that concepts such as active involvement have had little impact. Decontextualized standardised tests remain a major driving force. They present evidence illustrating that, driven by accountability systems, teachers commonly engage in practices (for example mandated testing programmes) that they do not believe to be an accurate reflection of their students' learning. Such disconnects contribute to stress, low morale and burnout. Different teachers respond in different ways: resisting or complying. Their analysis leads to the stark conclusion that when compliance is demanded, irrespective of the assessment focus (that is, assessment for learning or 'raising standards'), teachers' perceptions will influence the extent and the ways in which they engage with the proposed change. Innovation in curriculum, pedagogy and assessment must pay far greater attention to teachers' perceptions if innovation is to lead to change.

Assessment for learning (AfL) has been criticized for its lack of theoretical precision (Bennett, 2011) and for the tendency to

over emphasize the difference between formative and summative assessment (Flórez and Sammons, 2013). Black (Chapter 45, this handbook) acknowledges these tensions and, as a contribution to developing theory, presents a model to promote a more coherent understanding of the relationship between the formative and summative aims of assessment and the functions they serve within pedagogy. He argues that any resolution of the formative and summative aims of assessment must ensure that validity is not compromised, that is, teachers' inferences from student contributions about learning should be justified by evidence, assessment as part of pedagogy should make a positive contribution to pupils' learning, and that teachers should find the resolution of formative and summative practices practicable and rewarding.

Smith (Chapter 46, this handbook) argues that AfL can only become an effective pedagogical tool if an appropriate assessment culture is created in schools and in society. Self-regulation lies at the heart of this culture. She argues that for the potential benefits of AfL to be realised, educational stakeholders must deepen their theoretical and practical understanding of assessment, including its potential and its limitations. Smith shares the concerns of many authors in this section of the handbook, believing that the increasing impact of external accountability on students, teachers and schools is a threat to assessment as a pedagogical tool (Crooks, 2011). Smith offers examples of countries – New Zealand and Scotland – where attempts are being made to build more intelligent systems of accountability. Both countries are attempting to develop accountability systems that support the aspirations of the curriculum, for example using sample surveys to provide national data to government and avoiding the creation of league tables. In New Zealand, tests standardised against the New Zealand curriculum are available for teachers to download in ways that relate specifically to their classroom curriculum. They can, therefore, be used to support learners and learning but cannot be used as the basis for comparison.

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Implementing AfL is particularly challenging in strongly examination-driven, teacher-dominated cultures. Although acknowledging the limited empirical evidence on the implementation of assessment for learning in English Language classrooms in Hong Kong, Lam (Chapter 47, this handbook) identifies some indicators of teachers and students becoming more receptive to innovative assessment practices. Hong Kong teachers remain to be convinced of the extent to which assessment reform is possible and of the efficacy of the pedagogical roles inherent in new assessment practices. Likewise, students are challenged by ideas of self-regulation in classrooms where they are used to being passive learners. Lam suggests that for such a significant change in learning culture to take root, whole system action will be required. Hill (Chapter 48, this handbook) explores the potential for learning communities to support the sustainable development of AfL. She reviews studies and identifies themes important to sustainability, including teacher engagement, leadership, collaboration within schools, across schools and with districts, action research within personal practice and alignment with national assessment systems. When these features are not present or only partly implemented the potential for AfL to be sustained is compromised.

Commonly, tensions exist between assessment for formative purposes and assessment for summative purposes (Black, Chapter 45, this handbook). When summative assessment is equated with testing there can be a significant 'wash-back' effect. In classrooms where the focus shifts to what is tested, and curriculum aims are narrowed, teachers teach to the tests. Klenowski and Carter (Chapter 49, this handbook) review curriculum reform internationally, focusing on where there have been increased levels of testing of cross-curricular capabilities. They offer an example of the power of the wash-back effect. In Queensland, Australia, following the introduction of the national testing programme, NAPLAN, some secondary schools suspended their English and Mathematics

curricula for weeks to prepare for the tests. The higher the stakes, the more bizarre the behaviour can become, and the more testing there is the less trust in teachers' professional judgement.

The assessment complexities facing teachers and schools are constantly increasing because assessment is used for so many different purposes in different contexts. Many assessment uses are contentious: the gate-keeping functions of assessment in school and in post-school environments; the use of assessment data to judge teachers, schools and nations; and the use of standardised tests in ways that are beyond the limits of their dependability. To do more than survive in the landscape of twenty-first century education, teachers, parents, employers and policymakers need to be assessment literate. Wyatt-Smith and Looney (Chapter 50, this handbook) explore professional standards in a number of countries internationally and examine how assessment is represented within them. Many attempts to make professional standards explicit, they argue, do not fully recognise either the complexity or the emotional aspect of teachers' assessment work, although they found evidence of such recognition in professional codes in medicine and law.

Looking to the future of tests and examination systems, Baird and Hopfenbeck (Chapter 51, this handbook) identify five challenges currently being faced by examination systems: crises of knowledge, spiralling reform cycles, globalisation, performativity and grade inflation. They explore tensions running through education systems internationally, for example the politicisation of assessment and the emergence of assessment for accountability. They also highlight the power struggles over what constitutes knowledge and the contentious relationship between the nature of knowledge and qualifications, and they predict more tension in the relationship between supranational and local curricula and assessment. These are complex debates, and for teachers to engage critically in them requires a high level of professional

expertise. Critique also takes courage, and Baird and Hopfenbeck anticipate that many of the institutions involved in supranational and national assessment and testing may be resistant to critique. The alternative to a critical stance is one that emerges in many of the chapters in these volumes ^{where teachers are} compliant and deprofessionalised. They argue, that puts the education at risk.

The **OECD (2013)** review of evaluation and assessment policies across 29 education systems highlights the diversity of international practice (Nusche, Chapter 52, this handbook). Although there are transnational trends, for example moving away from transmission models of learning and the emergence in curricula of twenty-first century skills and competences, countries take very different approaches to the way that they design curricula and to the roles that they envisage teachers playing in the process. Nusche argues that assessment innovation often lags behind curriculum innovation, leading to a disconnect between curricular aspirations and classroom practice. She proposes a range of ways in which assessment practices might be developed, including the development of evidence-based learning progressions; supporting teachers in developing expertise in assessment; developing test banks and sample-based assessments to assess broader learning goals; and using ICT to create sophisticated assessment instruments.

A consistent theme emerging from across chapters in these volumes is the impact of accountability systems on the alignment of curriculum, assessment and pedagogy. In the Reith Lectures in 2002, Onora O'Neill (2002) presented a powerful critique of many of the market driven accountability systems in vogue internationally. She offered as an alternative the idea that accountability systems should be intelligent. Johnson explores this idea, defining an intelligent accountability system as one that is perceived to be 'valid, fair, understandable, and sustainable by those most directly affected by it' (Chapter

53, this handbook, p. xx). She explores what remains one of educational systems' greatest international challenges – how to hold systems accountable for educational desirable, ethically defensible practices. Perhaps one of the most hopeful areas for exploration is in the potential of national assessment programmes, particularly surveys, where data can be collected in ways that seek to minimize negative wash-back in schools and classrooms. Johnson explores the role that national assessment programmes can play in serving an intelligent accountability function, but concludes that the winds of political change too often change before the potential of the survey approach can be realised.

THE CURRICULUM AND EDUCATIONAL POLICY

One of the increasingly influential drivers of reform of national curricula, pedagogy and assessment since 2000 has been international comparative systems, which Lingard (2014) sees occupying spaces and places he describes as 'learnification' and 'policy as numbers'. Any political change, of which educational reform is but one, is located in the wider social and political context of nation states. Economics, including the perceived links between education policies and nations' prosperity, is a frame that contextualises the specifics of curriculum, pedagogy and assessment policies. However, as Hermansson (Chapter 54, this handbook) makes clear in his chapter, the research evidence on links between education and national and international economics is very complex, not least because of the range of different channels for education policy impact. There is strong empirical evidence that, in general, qualifications increase the likelihood of employment, and the more qualified the worker, the higher the wages they are likely to earn, but although there is clear correlational evidence, the causes are subject to considerable debate with some even arguing that about 10–15 per

AU: reference missing

cent of the effect of qualifications on earnings could be spurious. This broader macro-economic context of national economics is underpinned by the public versus private discourse of the control of education. Peroni (Chapter 55, this handbook) adds to the work of network analyses, which have shown the increasing influence of international companies, in a description of the impact in Brazil, highlighting the ways in which private companies directly influence curriculum and pedagogy as a result of their educational partnerships with the State.

One of the challenges for curriculum researchers is to rigorously appraise the methodologies of international comparison and disentangle these from the effects on education systems, including politicians' actions on the basis of their perceptions. Schleicher (Chapter 56, this handbook) attributes a range of powerful influences and benefits to international assessments, including the ways in which politicians have increasingly shown interest and even invested resources in the development and implementation of **Programme** for International Student Assessment (PISA). His chapter also reveals some of the sophistication of the particular methodology adopted in international assessments like PISA, including cross-country validity and comparability. The point is made that policymakers tend not to use the findings to challenge existing educational policies, preferring more often to select the findings to support their existing policies. There are of course other long-standing traditions of comparative work, and other critiques of the most well-known international assessments. Care and Beswick (Chapter 57, this handbook) are circumspect in their evaluation of the impact of international comparative assessments such as PISA. They caution that continual in-country reforms of curriculum, for example, challenge the methodological appropriateness of tests that happen at a particular point in time and that are then used as the basis for reform. The issue of cross-sectional versus longitudinal designs also applies to the assessment of pupils' learning

where previous years' learning is so often not accounted for. The important cultural dimensions of curriculum in a global context to which Care and Beswick refer, and that are a challenge for international comparison, are subject to illumination by Takekawa (Chapter 58, this handbook) through an unflinching in-depth analysis of the implication of globalised assessment on Japan. The case for teacher and student agency could hardly be more powerfully made than in the link that is made in the chapter between successful earthquake disaster planning and schools' curricula.

International, national and regional policies depend on their implementation by teachers, and on appropriate whole school leadership. The relationship between national policies and schools brings to the fore issues of agency. One extreme example of this relationship is the top-down cascade model of a national strategy, for example England's National Literacy and Numeracy strategies implemented from 1997 to 2010. Sinnema (Chapter 59, this handbook) identifies the need for curriculum designers to have a clear sense of the place of autonomy that includes how dimensions such as assessment, accountability and teachers' capacity might influence teachers' autonomy. Moore et al. (Chapter 60, this handbook) argue that such autonomy seems to be perilous in the US as a result of the implementation of Common Core State Standards. Sugrue's (Chapter 61, this handbook) chapter powerfully brings together the issues of performativity, agency and globalisation in his attention to leadership. There is evidence that the heterogeneity emerging in relation to curriculum and assessment is also present in leadership development programmes. Sugrue argues on the basis of his review of literature internationally, and on his own research with headteachers, for a better balance between the personal and professional in theorising leadership in order to realise the promise of more holistic and coherent curricula for the benefit of learners – and just as school leaders require appropriate professional development, so do teachers.

Menter (Chapter 62, this handbook) urges us to consider the ways in which schools' curricula, pedagogy and assessment are part of, and influence, the curricula of professional development. He also reminds us of the importance of curriculum study as a part of teacher preparation.

CURRICULUM FUTURES: RESEARCH, POLICY AND PRACTICE

One of the characteristics of the curriculum research field that has intensified in the last 20 years is that of curriculum analyses controlled by entities other than academics in universities. The most prominent example is the field of international student assessment, which aims to evaluate education systems and is having powerful, intended and unintended consequences for the field of curriculum globally, as the new analyses in this handbook have shown. The OECD ownership of PISA resulted originally from member countries' 'demands' for 'data on the knowledge and skills of their students and the performance of their education systems' (OECD, 2015). But knowledge of students is not simply equitable with performance of whole education systems. The international comparisons based on student data provokes questions such as 'who decides the knowledge to be tested' and 'what is the most appropriate knowledge to be tested'. Disaggregating the effects of student testing from the value placed on education systems is a continuing area for curriculum research.

One of the defining political questions for education in the twenty-first century that has received increasing attention is 'what works?'. This is something that has had significant implications for national curricula, particularly in the areas of literacy and mathematics. But more important for curriculum researchers are other questions: 'how should we evaluate what works', 'is it possible to improve state curriculum development through national comparison', and

if so, 'which states should be comparators'. The comparative research tradition in curriculum scholarship should be prominent in seeking to address these questions. How we should evaluate is predicated by some people on the a priori view that standardised student assessment is the most appropriate methodology. But if citizens regard a curriculum with high student test outcomes in relation to other countries in a league table as divisive, unrepresentative of society's values, undemocratically established and elitist, the validity of the comparison by student test outcomes must be in doubt. Researching 'what works' could begin with analyses of the aims that states ascribe to their national curricula. The extent of democratic involvement in the processes that lead to state curriculum aims should be a baseline for analyses. The nature of government sponsorship of, and involvement in, international testing is also an important area for curriculum research.

The complexity and scale of state curricula render them inappropriate for comparison by experimental trial; however, there are enduring elements of curriculum and its pedagogy and assessment that may benefit from experimental investigation. For example, children's agency, linked with the philosophy of child-centred education, could be compared (in conditions of more or less agency) to learning outcomes. Such experimental work at a modest scale could be tried at a larger scale if early work proved useful. At a much larger scale, longitudinal data sets, such as cohort studies, may be amendable to work that seeks to learn about trends in national curricula and the correlations with pupil outcomes in life. Systematic interdisciplinary work, as in so many spheres of research, is another aspect of research that needs to progress if new knowledge about curriculum is to be developed.

There is extensive rhetoric about the importance of aligning research, policy and practice, and the importance of partnership across research and policy communities if improvements in education systems are to be seen; however, collaborations of this kind seem less common in practice than in theory.

The drivers of research and policy communities are different. A key distinction seems to be between quality and quantity. In academia, despite the pressures of publication targets, the demands to bring in funding, project deadlines and the increasing numbers of students, the focus remains on the quality of ideas. For example, the process of peer review focuses attention on depth of understanding, quality of thinking and incisive critique. The focus in the policy world is quantifying problems, demonstrating action and responding decisively. Quality is one consideration but responding to political contexts in ways to 'save face' appears too often to be a greater consideration.

The chapters in this handbook are often marked by a search to improve the educational experiences for learners, to enhance the expertise of teachers, to improve curriculum, assessment and pedagogy, and most important of all to build better societies. These improvements are more likely to be achieved through shared understanding and collaboration between researchers, policy makers and practitioners. It may be all too easy to think that genuine collaboration across research and policy communities is just too difficult; however, the chapters illustrate many examples of the negative impact on education systems and ultimately on the learning of children and young people, and also of the effects of competing ideologies, and researchers, policymakers and practitioners working in tension with one another. If curriculum, assessment and pedagogy are to be brought into better alignment, then more effective collaboration is a necessary condition (Hayward, 2015).

If research and policy communities are to collaborate to change and to improve practices in education there are several implications. First, curriculum innovation is best designed with pedagogy and assessment as integral to the innovation. Curriculum planning without due attention to pedagogy and assessment will lead to problems when curriculum is implemented. Second, innovation has to be built on the best evidence available,



as exemplified for example in the chapters of this handbook, and paying attention not only to research in the area under consideration but also to other broadly relevant research, such as that in curriculum change processes. Third, researchers and policymakers need to become more adept at anticipating the impact of proposed actions, anticipating the consequences and planning to take account of these. Finally, if educational change is to be sustainable, systematic evaluation has to be built into systems development to explore what is actually happening in schools and classrooms as innovations are enacted, and to use that evidence to inform incremental changes to practice and changes to policy over longer time scales than the typical government policy cycle.

NOTE

- 1 In relation to England's national curriculum 2014, see Mary James' account <https://www.bera.ac.uk/promoting-educational-research/issues/background-to-michael-goves-response-to-the-report-of-the-expert-panel-for-the-national-curriculum-review-in-england>.

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