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Curriculum Development and Youth Media

A REVIEW OF RESEARCH

Contents

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Introduction

This report, Curriculum Development and Youth Media, argues that curriculum development and youth media need to be seen as parts of a wider social, cultural, political and economic picture. The importance of recognizing youth media within curriculum development strategies is now stated and advocated within educational policy and research, and there are compelling examples of school practices emerging. What are the features of the wider picture within which these developments are taking place? How are features of the wider picture refracted through the minor details? It is the wider picture we attend to mainly.

Lots of research has documented how young people are learning with media both inside and outside school. We reference this body of work, but focus primarily on youth media and learning in its complex social contexts. There is also lots of research on specific curricular changes. Again, we reference some of this work but our main interest is to situate curriculum development in its specific contexts and theories.

Curriculum development and youth media are shown to be areas for educational research that, because they are increasingly being aligned together, need to be studied and understood within the wider picture, at the macro-level, as well as at the meso-level of school organization and classroom practices, and at the micro-level of learning processes.

Aims and scope

The report provides a review of research projects and findings related to the macro-level of curriculum development and youth media. It has involved the collection of published research—including empirical research articles in academic journals, project reports, conference papers, and published books or individual chapters—which has been synthesized to provide an accessible and clearly referenced introduction to the key issues and debates. It is intended to highlight some key messages from the existing research that may be used to inform the development of new educational practices or new lines of inquiry and analysis in curriculum research. We hope therefore that it might be read by educational practitioners and trainee teachers, as well as by other researchers, especially by early-career researchers or students of education.

The areas of curriculum development and youth media are large and diverse. It would be impossible to synthesize everything. We have attempted only to make a start by identifying what we see as important issues, theories, and research findings that will require further scrutiny by anyone involved in curriculum development in schools. The intention has not been to catalogue both domains but to locate their points of mutual contact, identify interdependencies, and track similarities and analytical congruencies.

It is important to note that we are highly influenced by our own contexts. At the time of writing, the daily news is full of reports about economic turbulence and economic reform. A great deal of educational policy text consequently focuses on future economic and occupational demands. There has been a surge of economics thinking and debates related to economics in education, as shown by the frequency of terms like 'market' in education discourse. Economics does not tell the whole story about why and how curriculum change happens, nor does it have all the answers to contemporary curriculum problems, but today we are experiencing heightened sensitivity to economics. That heightened sensitivity is apparent throughout this text. We think it is important to unpack its significance, especially during a global economic recession.

Just at the point of completing this document it emerged that staff from the website Wikileaks had been collaborating with journalists at The New York Times, The Guardian, Der Speigel, La Monde and El Pais to publish a monumental catalogue of quarter of a million political leaks of secret communications from US foreign embassies. Throughout this document, we argue that youth media is related to wider technological and media trends in a 'network society.' Today, the Wikileaks story demonstrates the extent to which networks and media are at the forefront of global movements or flows of information and power. At the same time, British university students have been organizing protests against education budget cuts by mobilizing their social networks and mobile networks. On a different note, only a month beforehand, a music video by Lady Gaga received over a billion hits on YouTube, which demonstrates how popular culture is being experienced globally via media networks too. These are 'spectacular' examples of the power and reach of media networks in politics and culture, but they demonstrate why it is now so important to take account of media networks in education.

Curriculum development will refract and work through the consequences of this massive shift to networks in the daily lives of young people. A concern with youth media is not just a concern with lifestyle, leisure and socializing—of social networks, music downloads, and consumer spending—but with how young people understand the globalization of politics and culture, and figure out the best ways of living in an increasingly networked world.

The educational challenges of networks and economics thinking is brilliantly and vividly illustrated by the American children's novelist MT Anderson, in his sci-fi dystopia Feed, about a future internet that directly 'feeds' youthful consumers:

> School™ is not so bad now, not like back when my grandparents were kids, when the schools were run by the government, which sounds completely, like, Nazi, to have the government running the schools? Back then, it was big boring, and all the kids were meg null, because they didn't learn anything useful.... Now that School™ is run by the corporations, it's pretty brag, because it teaches us how the world can be used, like mainly how to use our feeds. ... It's an investment in tomorrow.[1]

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1 Anderson, MT (2004) Feed (Cambridge, MA: Candlewick Press)

Continuing the curriculum debate

We live in a world of media. Television, print media, computers, video games, the internet, and mobile phones constitute a pervasive and ubiquitous media landscape that is now as recognizable, and sometimes as troubling and unpredictable, as the physical landscape of the globe and its ecosystems. Indeed, the diversity of media from print on paper to bits in cyberspace makes up its own kind of media ecosystem.

Although young people certainly are not unique inhabitants of this media ecosystem, it has become especially important to understand their interactions with it. This is for two reasons. Firstly, it seems that young people are making more use of the newer developments in media, especially those media accessed via new technology such as computers and mobile devices connected to the internet and video games.

Secondly, and perhaps more prosaically though no less importantly, young people are going to spend a lot longer living with advances in media than their parents and their educators. For that reason, the current generation of parents and educators has a responsibility to seek to understand the implications of media, and to educate their children for lifelong interaction with it. 'Youth media' is a shorthand way of referring to the ecosystem of mediated interactions and interdependencies that now courses through many young people's lives and cultures.

For those reasons, now is an important time to query the kind of curriculum that is taught in today's schools. This document, Curriculum Development and Youth Media, is intended to introduce readers to some key trends in recent social science research concerning both the taught curriculum and youth media. In this section we outline the scope of the report, introducing some key arguments and research questions.

What is 'curriculum development'?

The term 'curriculum' originates from the Latin 'currere' meaning 'a course to be run, or the running of a course,' and is usually meant to refer to a course of study at an educational institution. But how a 'course of study' is to be conceived, managed and regulated is more complex. In many countries, for example, there now exists a centrally mandated, implemented and managed 'National Curriculum' that is seen as an equal and democratic entitlement for every learner. In the USA policies such as No Child Left Behind, twinned with state-level standardized curriculum and assessment, have been designed to result in the reduction of variation in educational offerings from one locale within a state to the next, and lead to further uniformity in the evolution of the educational system and its products.

In these contexts, schools are expected to teach a uniform, centrally mandated and centrally regulated curriculum, which comprises of a number of specific subjects each comprising of some key objectives and a prominent body of content pre-defined for study. That makes a curriculum an ideal of the state, a matter of public concern. It also implies that somehow it is possible to select content for a course of study in school that every young person will be able to access. Understandably, this causes a great deal of debate and even outright hostility, as seen especially when elite private schools opt out and create their own high-status curricula.

In this review our focus is on different ideas about the school curriculum, alternative curriculum models, competing curriculum theories, and advocacy of different curricular ideals. Therefore, when we refer to 'curriculum' in this review we do so to refer broadly to the question of 'what' is studied at school, rather than referring specifically to the objectives, subject prescriptions and planned outcomes of any centrally mandated curriculum.

We use the term 'curriculum development' throughout in the sense that the curriculum scholar Lawrence Stenhouse defined in 1975:

> Its object is the betterment of schools through the improvement of teaching and learning. Its characteristic insistence is that ideas should encounter the discipline of practice and that practice should be principled by ideas. The curriculum development movement is an attack on the separation of theory and practice.[2]

2 Stenhouse, L (1975) An Introduction to Curriculum Research and Development (London: Heinemann)

Our contention is that what happens at the level of curriculum development in schools needs always to be understood in the context of changes in politics, economy, society, culture and technology, and that young people's interactions with media and technology are intricately and intimately connected to such contexts. We are not advocating straightforwardly for the development of curricula that feature a stronger emphasis on technology use but for a theoretically rich and contextually situated approach to developing curricula that respond to youth media.

Curriculum development adequate for the 21st century must be informed by a critical understanding of technology and media, its place in the world, and its implications for young people in diverse contexts.

What is 'youth media'?

Modern 'youth' was born after the second world war. During the 1940s the American sociologist Talcott Parsons had described 'youth culture' as a common transitionary adjustment from childhood dependency to mature adulthood. The 'baby boom' of the 1950s and 60s saw an explosion of the youth population, followed by the expansion of consumer industries and the reconfiguration of traditional labour markets, which in turn boosted young people's spending power. Youth had, over the course of a decade or so, been transformed.

Increasingly, the social scientific study of youth has recognized youth as a relative category rather than a universal category, and youth culture not as a singular experience but as a plurality of cultural experiences which are more or less synchronized with the cultural norms and expectations of school. The development of distinctive youth cultures based around media from the 1950s onwards—which were underpinned by an ethos of 'anti-structure' and the dissolution of boundaries—challenged the 'official' culture of the school. The distinguishing features of youth and youth cultures therefore are not universal givens but the product of social, economic and political structures and changing historical contexts. Rather than age and stage of life explaining the ways in which societies operate, it was now understood that changes in society explain the relations between ages.

'Youth media' has emerged as a category or a vehicle for discussions of youth in the context of the proliferation of the mass media and popular culture, especially since the 1990s with the arrival of so-called 'new media.' Youth have been configured as a significant—perhaps the most significant—consumer market and user base for new media products, as shown by the relentless production and marketing of products such as video games for young people's consumption. Beyond a concern in consumption and consumerism, youth media refers to the significant ways in which media have changed the ways in which many (though not all) young people interact with one another (for example, through social networking), access information and knowledge (for example, through television and websites), and engage with culture (for example, though downloading music, film and online written materials).[3] Crucially, youth media is understood to be 'participatory' rather than passive.

More mundanely, in this document youth media also acts as a convenient verbal category to articulate a concern or interest in the interactions of young people with media. It's not to suggest that 'youth media' refers to some distinct technological or media development or generational shift. Youth media is not exclusive. New media don't belong to the youthful domain while adults over a certain age stick to print and analogue technologies. Websites aren't 'youth media' while newspapers are 'old media' (as the 2010 Wikileaks collaboration with The New York Times, Guardian, Der Speigel, La Monde and El Pais newspapers showed); television isn't just for people of parenting age while YouTube is for their kids; the internet itself isn't primarily aimed at young people impatient with the books of previous generations. At the same time, youth media is not responsible for epidemics of crime or cultural degradation, while literature and theatre rise above moral panic.

'Youth media' as a category simply recognizes that the interaction of young people with new technology and new media is an important but highly diverse and endlessly changing area for critical exploration. Many young people still read books and watch TV; it's just that they do so increasingly in the context of a much wider array of new and constantly emerging media. It's the very dynamism, complexity and ambiguity of youth media in all its facets—as consumer market, as cultural experience, as political economy, as civic participation, and as a space of learning that challenges traditional notions of education—that makes it so fascinating and arresting for critical social scientific analysis.

3 For detailed critical analysis of the history, cultures, markets and political economy of youth media see Osgerby, B (2004) Youth Media (Abingdon: Routledge)

The school curriculum and youth media

Are schools out of date and out of touch with the present-day reality of the youth media universe? Is it possible for schools to teach a curriculum that represents and responds to the media ecosystem beyond the school gates, where technologies and media play a growing and increasingly significant role in leisure, socializing, citizenship and work? Or is a school curriculum supposed to do something different, to instil in young people an understanding of national legacy and cultural heritage, allegiance to state citizenship, and a rounded knowledge of the major educational disciplines as defined by the very best experts?

Curriculum debates remain unresolved. But over the last decade the significance of new technology and media has become an increasing source of concern in curriculum research and curriculum development. For some the concern is that the school curriculum fails to help young people make sense of this media ecosystem, or that it doesn't recognize its vast and varied opportunities. For others, the concern is that young people are being seduced by the superficiality of technology and media, by such 'dumb delights' as video games and social network sites, with the consequence that they simply cannot concentrate on or engage with the complexity of the curriculum.

Curriculum extremists on both sides of the debate have unhelpfully polarized opinion on the important curricular issue of how educators are to understand and respond to youth participation in the digital media universe. At one extreme, educators are exhorted to retrench in traditional subject areas or 'proven' techniques; at the other, the curriculum is required to 'catch up and match up' with youth media cultures. This is the so-called 'post-industrial conundrum,' that is, the mismatch between the dominant bureaucratic mode of schooling, a model developed in the 19th and early 20th centuries, and the experiences of children and adults in other sectors of 21st century society.[4]

The main problem with this kind of debate is how it takes place largely at two polar extremes. On the one hand there is a celebration of the power of technology to transform education, and a set of regrets about the supposedly luddite conservatism of schools to keep pace with 21st century technocultural developments, and on the other as a series of suspicions about the depredations and dangers of media.

4 Carolan, B, Natriello, G & Rennick, M (2003) Rethinking the organization and effects of schooling. EdLab research paper (New York: Teachers College, Columbia University)

Our point of departure and return throughout is the growing importance of technology and media in the everyday lives of many young people today. Young people are increasingly understood to be digital participants. The technologies and media they use are understood be to participatory—that is, they afford greater possibilities for taking part in social activity, whether for leisure, civic and cultural life, or learning.

Recent scholarship demonstrates that this concern with technology, learning and young people is a transnational phenomenon, based in a series of rhetorical pronouncements which has sought to encourage the networking of homes, workplaces and educational institutions into a global digital environment.[5]

What we are exploring in this document is the question of how participatory technologies and youth media might influence or play a part in the development of the school curriculum.

Re-politicizing media and technology in education

We also take a rather critical perspective, receptive to Neil Selwyn's important recent reassertion that educational researchers 'take a sustained look at schools and digital technology in terms of some rather unfamiliar concepts in the academic study of educational technology' such as 'issues of power, politics, control and conflict.' For Selwyn, educational use of technology is a largely de-politicized field of academic study based on an 'ideologically invisible' technocratic orthodoxy which assumes technology is a good thing for education. Yet, as Selwyn continues, 'many of the debates are not concerned with the technical capabilities of digital technologies per se—rather they relate to wider imaginings of how schools may be altered and adjusted in line with the needs of contemporary society.' Given these parallels between technology, society, and the 're-imagineering' of school, the study of technology in education is urgently in need of re-politicizing.[6]

Our contention is that the recent political emphasis put on trade, capital market liberalization, de-industrialization, technological change, consumer markets, and the growth of the knowledge economy has exerted effects on the curriculum imagination. That makes a macro-level analysis of curriculum development and youth media issues absolutely essential.

Curriculum development today, then, is not simply an issue of redesigning the curriculum in response to technology and youth media. We don't want to set out a technologically determinist approach to curriculum development. If we are to take participatory youth media and technology seriously as the basis for rearranging the school curriculum—for revising our existing approaches to the dominant organizing device in schools—then we need to better comprehend and appreciate youth media as interdependent with complex global trends and shifts.

We are living through 'digital times' where technologies and media have assumed importance in leisure, social life, work, the economy, civic life and politics. We are living through an era of political and economic turmoil related to global flows of finance, enabled by network technology, organized according to a strong set of messages advocating economic ideals of the future for which 'there is no alternative.' And we are living in an era where ideas about the 'knowledge economy' are held up as the organizing principle for education systems and for curriculum development. It is in these contexts that we need to think about the institutional, organizational and epistemological framing of the school curriculum.

Our argument is that understanding participatory youth media requires an understanding of these digital new times, of such concepts and contexts as globalization, neoliberalism, the network society and of the knowledge economy. How young people participate in the contemporary world—whether in leisure, in social, civic and cultural life, in education, and so on—is interdependent with those contexts. If young people are to be understood as social actors in their own right—as many commentators in the field of youth media suggest—then we need to acknowledge the contexts in which they are able to act, are seeking to act, or are prevented from acting. The school curriculum, we contend, is a powerful mechanism in enabling or impeding young people to exercise their agency as actors in the contemporary world.

5 Sefton-Green, J, Nixon, H & Erstad, O (2009) Reviewing Approaches and Perspectives on 'Digital Literacy.' Pedagogies: An international journal 4(2): 107-125

6 Selwyn, N (2011) Schools and Schooling in the Digital Age: A critical analysis (London: Routledge)

This document provides a review of relevant research and projects which have explored aspects of the links between the school curriculum and how children and young people interact with new technology and media. The key message is that the relationship between curriculum design in school and young people's own uses of new technology and media need to be better understood, and, most importantly, much more strongly contextualized and situated, if educators and researchers are to come up with new ways of designing the school curriculum. This is an important message at a time when educators are being pressured to come up with new ways of engaging young people in school. And although the importance of technology and media in education is regularly restated, there has been surprisingly little effort to explore the deep consequences for the school curriculum. In the last few years new research findings have begun to provide theoretical and empirical support for developing our understandings about redesigning the structure and content of the curriculum.

Centrifugal schooling

Contemporary curriculum debates concerned with youth media return, time and time again, to questions to do with centrifugality, decentralization, and decentring strategies. The tendency is to move centrifugally away or outwards from the center rather than centripetally towards it. In a variety of different ways, technology and media-related curriculum developments have begun to challenge the centralized organization of schooling. Increasingly, a more diverse approach to curriculum organization is advocated, with schools encouraged to innovate locally rather than follow national or state mandates. School knowledge is to be decentralized too, with emphasis given to areas of knowledge beyond the central epistemological concerns of the subject disciplines or the 'core' curriculum.

The ideal is that school is to be decentred as the sole site of learning, and learning is to be understood as more fluid across diverse contexts: from the home and the family, across informal sites of learning such as communities and youth group settings, to the potentially global, interconnected online space of networks. Young people's own knowledge from home and community, and especially from the electronic networks to which they belong, are to be welcomed into the classroom as a source, subject and resource for learning.

Though largely germinal or inchoate at the current time, nonetheless these decentring strategies represent a significant and as-yet under-researched challenge to the dominance of central prescription and uniformity in curriculum design. In short education is to be decentred and education policy is to become 'post-standardized,' as represented by the shift in educational imagery from the red brick Victorian school building to the contemporary vision of schools as networked institutions, and learning as fluid and flexible across sites.[7]

Such decentred ideals, images and strategies represent a turn to what we term 'centrifugal schooling.'

Rather than the curriculum being a self-enclosed and firmly boundaried body of knowledge, internally comprised of strictly defined and individually insulated subject disciplines, within the emerging decentred logic of centrifugal schooling the curriculum is to be penetrated both from outside and within. Subjects are to penetrate one another, while the school curriculum itself it to be penetrated by outside forces and hitherto non-school, 'illegitimate' knowledge. As such, the curriculum is being viewed as a site for multiple kinds of border crossings or boundary penetrations, where the organization and selection of school knowledge is challenged, even transgressed or redefined.[8]

This is a vision of centrifugal schooling more than a reality at present. It represents a new 'imaginary' or a 're-imagineering' of school. This imaginary vision adheres to the decentralized network architecture of the internet and a great shift towards networks as the dominant structuring device in society. The shift to a network architecture is characterized by a greater degree of interconnection, distribution and disorganization in capitalist societies. It fundamentally affects communication, governance, knowledge, identity and citizenship, and power. Such media networks are changing the ways in which societies, economies and politics operate, with profound and complex consequences.[9]

7 Hargreaves, A (2008) The coming of post-standardization: Three weddings and a funeral. Sugrue, C (ed) The Future of Educational Change: International perspectives (London: Routledge); Ferguson, K & Seddon, T (2007) Decentred education: suggestions for framing a socio-spatial research agenda. Critical Studies in Education 48(1): 111-129; Ozga, J (2009) Governing knowledge? Globalization, Europeanization and the research imagination. British Journal of Sociology of Education 30(4): 511-517

8 The concept of 'border crossing' is from Giroux, H (2005) Border Crossing: Cultural workers and the politics of education, 2nd ed (London: Routledge)

9 Ryan, J (2010) A History of the Internet and the Digital Future (London: Reaktion); Mulgan, G (1998) Connexity: Responsibility, freedom, business, and power in the new century (London: Vintage)

At the same time, within economically advanced nations life is less organized or structured, with traditional institutions such as the family and the church losing authority and people identifying themselves from a much more pluralistic and fluid array of lifestyle, civic and consumer choices.[10]

For young people in particular networks have taken on special importance because they, more than any other generation, are living large parts of their lives online; digital networks have become spaces for participation in the contemporary world. The internet makes it possible to participate in networks that are small or large, local or global, intimate or anonymous, and make available a range of different ways of expressing and defining a sense of self and identity. As a consequence, identity is understood as increasingly ambivalent and fluid across multiple sites of culture, especially within electronic networks, rather than wholly defined by traditional institutions, structures and routines.[11] Identity itself has been decentred; the formerly coherent and centred individual is now displaced by a 'centrifugal self' too.

These kinds of changes exert effects on education. Education becomes the site where such changes are worked through and where young people are prepared for a world characterized by them. Thus, the curriculum seems increasingly to be a site for the preparation of young people for a disorganized, fluid, flexible world characterized by decentralization and centrifugality—in short, characterized by 'network logic.'[12]

Yet the understanding of networks in education remains under-developed. Jorge Avila de Lima, for example, claims the network concept mobilized in educational discourse is vague, normative and instrumental, relying on 'faith and fads' from corporate literature and ignoring especially the 'dark side' of dysfunctions, destructive conflicts, exploitation and other negative effects such as enhanced competition between schools comprising the same networks.[13]

10 Bauman, Z (2007) Liquid Times (Cambridge: Polity)
11 Buckingham, D (2008) Introducing Identity. Buckingham, D (ed) Youth, Identity, and Digital Media. The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning (London: The MIT Press): 1-24
12 McCarthy, H, Miller, P & Skidmore, P (2004) Network Logic: Who governs in an interconnected world (London: Demos)
13 De Lima, JA (2010) Thinking more deeply about networks in education. Journal of Educational Change 11: 1-21

The discursive construction of centrifugality and decentralization in education and curriculum discussion is by no means straightforward or politically neutral. Instead, decentralization is a politically contested concept, with no singular meaning. Perhaps fittingly, it has no unified or centralized conceptual anchor. It's ambiguous and contradictory, with certain decentralizations favouring the unregulated free market of flexible businesses, and other forms of decentralization intended to bring about emancipation and greater democratic freedoms, as we will see. Perhaps most notably, schools and curriculum developers are being faced with paradoxical and contradictory messages about decentralization and the shift to centrifugal schooling. Not least of the challenges is that centrifugal schooling does not simply represent a positive step forwards for curriculum development but instead represents added complexity.

These ideas and debates, at least, form the contextual landscape and a reality check to both the more overly optimistic or flamboyant claims made by some commentators and the more gloomy, near-apocalyptic pessimism of others. We view decentralization and ideas about centrifugal schooling as the subject for ongoing curriculum debate, not as a utopian solution.

Scope of the report

This review shows that any conceptual blueprint for curriculum development depends on conducting analysis of contemporary society, of which we regard youth media as an important dimension. A recent special issue of the prestigious European Journal of Education was organized around a cluster of relevant questions concerning how curriculum developers should respond to global economic pressures.[14] Our concerns are inflected by a more explicit concern with youth media and technology, but the main questions we want to address are adapted from that special issue:

- What youth media developments are exerting pressure on the school curriculum? What are the global contexts in which youth media practices are being shaped?
- How do policies and initiatives concerned with youth media affect or influence the knowledge contained in the school curriculum?

14 Yates, L & Young, M (2010) Globalization, knowledge and the curriculum. European Journal of Education 45(1): 4-10

- What new curriculum principles are emerging and how might these exert material effects on classrooms, especially on young people's participation and teachers' professionalism?
- For what purposes—political, economic, social—is the curriculum being reshaped and restructured?

We simply want to bring together some findings from both the field of curriculum development research and youth media research and provide a synthetic overview. The research has not attempted to provide a systematic or comprehensive review of the evidence of how youth media might be most 'effectively' connected to curriculum. Instead, it has attempted to widen contemporary curriculum discussions; to identify the significant debates and theories and to summarize them; and to demonstrate the continuing importance of the curriculum in discussions about education at a time when some technologically enthusiastic educators have suggested its obsolescence.

Digital times

Youth media is a dimension of a broad set of historical processes. Rather than 'periodizing' youth media as a solely 21st century phenomenon, we view youth media as part of social, cultural, economic and political trajectories linked to changes in society since the mid-20th century. These include widespread economic changes diffused around the world through processes of globalization (the so-called 'runaway world' or 'modern world system'),[15] changes in technological infrastructure, and changes in the nature and operations of capitalism, which in turn have been related to changes in how children and childhood are understood and changes in the structures and processes of schooling.

This an important reminder that both youth media and curriculum development are part of a worldwide conversation, not isolated encounters, in an era that is increasingly 'digital' and 'mediated.'

This section provides a summary of recent research literature which contextualizes and situates the ways in which technologies and youth media have been understood in educational debate. It establishes a series of critical arguments and social theories about our contemporary 'digital times' that form the essential underpinnings of 21st century curriculum development.

15 The 'runaway world' idea is from the British sociologist Anthony Giddens; 'world systems theory' originates from the US sociologist Immanuel Wallerstein. See Cohen, R & Kennedy, P (2007) Global Sociology, 2nd ed (Houndmills: Palgrave Macmillan)

Changing economies

By 2010 it had become commonplace to encounter claims that the world was changing, and changing fast. There was a consensus in the social sciences that the period since the mid-1970s represented a transition from one distinct phase of capitalist development to a new phase. Terms such as 'structural crisis,' 'transformation' and 'transition' had become common descriptors, while new epithets such as 'post-Fordist,' 'post-industrial,' 'post-modern,' 'fifth Kondratiev,' 'knowledge economy' and 'information society' had been coined to describe the emerging new age of capitalism. Though sometimes criticized because they appear to imply the inevitable and unstoppable march of history, and especially economic and technological development, such accounts are useful in prompting reflection on the nature of economic and social change.[16] Multiple different epithets have been coined to designate the contemporary period, some of which may endure for decades, while others are fast forgotten, just as popular and enthusiastic 1990s terms like 'weightless economy' and 'friction-free capitalism' have lost currency since the global financial crisis.[17]

Nonetheless, since the mid-1990s, when the internet, home computing, mobile telephones and video games became popular, it has been hard to deny that life in the western world has become increasingly 'mediated.' That is, human experience, culture, economics, politics and sociality take place more and more through various forms of new and emerging media, micro-processed and facilitated by ever-more powerful digital technologies. At the same time, the rise of capitalist economics on every continent, including in communist China, has been enabled by a new form of politics that trumpeted the triumph of deregulated free markets, free trade, private property rights, and policies of state non-intervention across the globe.

Alongside the boom in deregulated free market capitalism and the boom in digital technology came a set of new ideas about the future of work and the future of education. Increasingly, since work would be done using computers, utilizing the new power of communication networks, it would be information and knowledge rather than the manufacturing of physical products which would matter most. The task for education systems would be to make sure that young people were adequately prepared for this

shift from a manufacturing-based economy to a 'knowledge-based economy.'[18]

The argument about how to understand the current milieu, in a number of different and contesting ways, has become the concern of education sociologists, businesses such as computing corporation Cisco, and supra-national organizations such as the OECD.[19]

It ought to be noted, however, that following the 2008 financial crisis, a number of education scholars have begun to query the sustainability of the 'economistic' accounts that proliferated pre-recession. They question the extent to which education can or should refract economic imperatives and interests.[20] Besides being an economic concern, too, the rhetoric about media is also concerned with changing understandings of childhood and youth, particularly embodied by the image of youth as media-savvy.

16 Amin, A (1994) Post-Fordism: A reader (Oxford: Blackwell) Elliott, A (2009) Contemporary Social Theory (Abingdon: Routledge); Kumar, K (1995) From Post-Industrial to Post-Modern Society: New theories of the contemporary world (Oxford: Blackwell)

17 The 'weightless economy' is associated with former UK New Labour advisor Charles Leadbeater: Leadbeater, C (1999) Living on Thin Air (London: Viking); 'friction-free capitalism' comes from Microsoft founder Bill Gates: Gates, B (1996) The Road Ahead (London: Penguin)

18 Halsey, AH, Lauder, H, Brown, P & Stuart, WA (eds) (1997) Education: Culture, Economy, Society (Oxford: Oxford University Press). The Organization for Economic Cooperation and Development (OECD) has been a major supra-national contributor to this vision of a knowledge economy, including its significance for education: OECD (2001a) Knowledge, work organization and economic growth (Paris: OECD); OECD (2001b) What schools for the future? (Paris: OECD)

19 Selinger, M (ed) (2004) Connected Schools (London: Premium Publishing); OECD (2008) Innovating to Learn, Learning to Innovate (Paris: OECD)

20 Goodson, I (2010) Times of educational change: towards an understanding of patterns of historical and cultural refraction. Journal of Education Policy 25(6): 767–775; Hartley, D (2010) Rhetorics of regulation in education after the global economic crisis. Journal of Education Policy 25(6): 785-791; Jones, K (2010) Crisis, what crisis? Journal of Education Policy 25(6): 793-798

Changing childhoods and youth

Just as 'youth' is a convenient category for a wide diversity of young people's experiences, what it means to be a 'child' or to experience 'childhood' is culturally and temporally contingent. Childhood and youth are socially constructed by the values and contexts of society. Historically specific economic, cultural and social discourses deploy preferred ways of thinking and talking about childhood and about the positioning of children in society.[21] The meanings attached to childhood today, in the heavily mediated 21st century, are very different to the discourses and commonsense understandings of childhood that dominated a century ago.[22]

For example, with the rise of age-segregated schooling in the 19th century, childhood was treated as a protected space with a specific nature that was by definition separate from adulthood. In addition, before the abolition of child labour, children were seen as economically useful contributors to society. The advent of schools meant childhood came to be seen in western cultures as a period of 'becoming' during which individuals learn the intellectual, social and cultural practices thought necessary to be a fully-functioning member of society: a mature adult 'being.'[23] This view of childhood as a period of 'becoming' led to children being seen as vulnerable, subordinate to adults and in need of adult protection, especially from 'adult' knowledge.[24]

This was congruent with an understanding of learning based on developmental psychology that sees the gaining of competence and knowledge as a linear process, and childhood as a time for adults (primarily parents and teachers) to prepare children for completion. Curricula were therefore designed and arranged for the purpose of delivering what was seen as important knowledge to children, with complexity of concepts and content gradually increasing in a spiral curriculum architecture throughout the age-progression of childhood.[25]

In the last two decades this paternalistic view of childhood and children has begun to change. In 1989 all member states of the United Nations (except the US and Somalia) ratified The United Nations Convention on the Rights of the Child, which asserts the rights of children to be recognized in international law. The emerging notion of the child with rights and a voice helped facilitate a new sociology of childhood which recognized children as social actors in their own right, with thoughts, ideas and opinions that should be heard and who should be studied from their own perspectives.[26]

The focus of these contemporary theories of childhood is on the competent, active child rather than on preparation for adulthood. This in turn has resulted in changing discourses of schooling. There has been a shift to social constructivist forms of learning that focus on social and active knowledge construction and position children as active participants in creating and designing their own learning. This view also acknowledges the importance of children's experiences of their world and calls for these to be a starting point of learning. It should be noted however that children's rights and participation have been overshadowed by policy focused on the rights associated with provision of service and protection, that is, protection of children from the world and protection of society from children.[27]

21 Austin, H, Dwyer, B & Freebody, P (2003) Schooling the Child: The making of students in classrooms (London: RoutledgeFalmer)

22 Ariés, P (1962) Centuries of Childhood (London: Jonathan Cape); Cunningham, H (1998) Histories of childhood. American Historical Review, 103(4): 1195-1208

23 Qvortrup, J, Bardy, M, Sgritta, G and Wintersberger, H (eds) (1994) Childhood Matters: Social theory, practice and politics (Aldershot: Avebury)

24 Thorne, B (2009) 'Childhood': Changing and dissonant meanings . International Journal of Learning and Media 1(1) URL: **http://ijlm.net/keywords/doi/abs/10.1162/ijlm.2009.00010**

25 Beilin, H (1992) Piaget's enduring contribution to developmental psychology, Developmental Psychology, 28(2): 191-204.

26 James, A and Prout, A (1990) Constructing and Reconstructing Childhood: Contemporary issues in the sociological study of childhood (London: Falmer Press); Jenks, C (1996) Childhood (London: Routledge); Lee, N (2001) Childhood and Society: Growing up in an age of uncertainty (Maidenhead: Open University Press); Prout, A (2005) The Future of Childhood: Towards the interdisciplinary study of children (London: RoutledgeFalmer):

27 Mayall, B (2006) Values and Assumptions Underpinning Policy for Children and Young People in England. Children's Geographies 4(1): 9-17

Fantasies of childhood

At the same time, the media and technology landscape has changed significantly in recent years. Children and young people are engaging with digital media and using a wide variety of technologies at younger and younger ages. Increasing access to the internet, mobile phones and other technologies and media is reflected in many areas of young people's lives, from play and socializing to learning both formally and informally. Making and sharing media has become increasingly important to how young people interact, create, share and communicate with each other, resulting in the emergence of a more participatory culture,[28] while others remain concerned about the seemingly 'toxic' fallout of media exposure.[29]

These debates mirror wider views about childhood, as a major independent review in the UK highlighted:

> At one extreme they appear as suffering innocent or brave little angels in a dark and menacing world. At the other they are portrayed as little devils: the 'tiny tearaways' whose anti-social behaviour is supposedly beyond the control of parents, teachers and the police.[30]

As Marquard Smith points out, this 'pointless debate' over 'the corpse of childhood, looking to explain both the essence and the end of innocence,' is indicative of how questions of childhood have become 'pivotal in this liberal, conservative, humanitarian western culture—this infantilizing self-styled 'nanny state'—obsessed with protecting in general and protecting childhood in particular.' Smith sees 'the problem of childhood' as a 'public spectacle in our historical moment'; a 'fantasy of childhood' that is simultaneously dependent upon both fears and hopes for the future.[31]

David Buckingham, too, has identified the varied 'fantasies of childhood' that course through popular media, notably including those fantastical longings for an earlier 'golden era of childhood' as well as the more current tendency to condemn today's children as consumer-culture 'junkies' dangerously addicted to video games and the internet. Buckingham reminds us that these 'moral panics' about digital technology are not dissimilar from those that occurred in the 1960s over the corruption of children by television.[32] Nevertheless, the 'tiny tearaways' rhetoric has created several moral panics in western nations which in turn has seen pressure put on policy makers to put measures in place to protect children from the potential dangers of the internet.[33]

In the UK this has resulted in 'e-safety' being introduced to the National Curriculum as a statutory requirement and it has also positioned schools as a sanctuary of safety and protection from unsuitable media content. Critics have pointed out that although there is undoubtedly good reason to support young people to become safe users of the internet, the measures that have been introduced, especially the introduction of school firewalls, once again prioritize children's right to protection over their right to participation and do little to support them to gain critical practices that will support them to be safe on the internet outside of school, where there are no firewalls to protect them.[34]

Alan Prout has pointed out that both the 'cyber-critics' who argue that technology and media are destroying childhood and the 'cyber-utopians' who see children as the vanguard of new ways of thinking and learning deny the diversity of young people's experiences of media. They create new, fixed and bounded notions of childhood, underestimate differences between children, and deny children's capacity to be social actors. Prout also highlights the techno-deterministic nature of both arguments. Both views suggest that media and technology are independent external influences on childhood and on society, causing the development of certain dispositions, rather than created within social and cultural contexts.[35] As such, if we are to understand the implications of youth media for curriculum development then we need to understand its cultural dimensions.

28 Wiegel, M, James, C & Gardner, H (2009) Learning: Peering backward and looking forward in the digital era. International Journal of Learning and Media 1(1) URL: **http://ijlm.net/keywords/doi/abs/10.1162/ijlm.2009.0005**; Jenkins, H, et al. (2006) Confronting the Challenges of Participatory Culture: Media education for the 21st century (Chicago: MacArthur Foundation)

29 For example, Palmer, S (2007) Toxic Childhood: How the modern world is damaging our children and what we can do about it (London: Orion)

30 Alexander, R (ed) (2010) Children, Their World, Their Education. Final report and recommendations of the Cambridge Primary Review (Abingdon: Routledge)

31 Smith, M (2004) Fantasies of childhood: visual culture and the law, Journal of Visual Culture, 3(1): 5-16

32 Buckingham, D (2000) After the Death of Childhood: Growing up in the age of electronic media (Cambridge: Polity)

33 Tiny Tearaways was the title of a popular UK TV program in which child psychologist Tanya Byron helped desperate parents control their children; Byron later fronted the UK government's review of internet safety: Department of Children, Schools and Families [DCSF] (2008) The Byron Review: Safer Children in a Digital World (Nottingham: DCSF Publications)

34 Livingstone, S & Haddon, L (eds) (2009) Kids Online: Opportunities and risks for children (Bristol: Policy Press)

35 Prout, A (2008) Childhood-2025 and Beyond. A challenge paper for the Beyond Current Horizons projects (Bristol: Futurelab) URL: **www.beyondcurrenthorizons.org.uk/wp-content/uploads/bch_challenge_paper_childhood_alan_prout2.pdf**

Changing youth media cultures

David Hartley has shown how education is influenced simultaneously by an economic code which emphasizes things like efficiency and effectiveness, and by a cultural code where empowerment, emotions and affect are emphasized.[36] Culturally, schools and curriculum development are being influenced by a cultural concern with young people's technology and media cultures. Young people have been written about as increasingly sophisticated technology users. Whereas young people's media use at home was previously disparaged as culturally degenerate, with television and video games demonized for their negative messages and effects, there has been a shift to recognize media as providing cognitive benefits, even that popular culture is making people smarter.[37]

Youth media research follows some similar trajectories to childhood research with its emphasis on active participation. Instead of understanding media audiences as passive recipients of persuasive media messages, youth and media academics increasingly seek to show how (at least some though not all) young people are active, participative and sophisticated in their interaction with media and technology, not just enthusiastic and engaged consumers. Many young people are assumed to be more technologically attuned than older generations, with lifestyles that are interdependent with a perpetually developing media ecosystem and with seductive media cultures of creativity, communication and collaboration.[38]

Young people have even been referred to popularly as 'digital natives' or as a 'net generation,' as if they possess evolutionarily distinct advantages over their parents and teachers, who are unable to keep up with the fast pace of change in the digital environment or understand its implications for the children in their care.[39] These generational categories are now the subject of widespread critical debate as detailed empirical data is sought to respond to the popular rhetoric and hype.[40]

Sonia Livingstone's recent study of children and the internet, for example, shows that while policymakers, parents and researchers have spent years deliberating over the best ways to maximize opportunities and minimize online risks, for young people the 'always-on' and 'constantly connected' way of life is 'a source of delight,' enabling new forms of affiliation and friendship, social and civic participation, cultural access, and new opportunities for learning; though at the same time these opportunities need to be viewed in the context of cultural and historical shifts in youth culture, consumer culture and the growing commercial children's market, and the domestication and privatization of leisure.[41]

In other words, the task for researchers of children's interactions with technology and media is to situate their empirical analyses in social, cultural and economic shifts in western capitalism, with issues of consumerism and commercialization acquiring special urgency.[42]

36 Hartley, D (1997) Re-schooling Society (London: RoutledgeFalmer)

37 Johnson, S (2006) Everything Bad is Good for You: How popular culture is making us smarter (London: Penguin)

38 Buckingham, D (2007) Beyond Technology: Children's Learning in the Age of Digital Culture (Cambridge: Polity); Ito, M, et al. (2009) Hanging Out, Messing Around and Geeking Out: Kids living and learning with new media (London: MIT Press); Osgerby, B (2004) Youth Media (Abingdon: Routledge); Kenway, J & Bullen, E (2001) Consuming Children: Education-entertainment-advertising (Buckingham: Open University Press)

39 These terms have been popularized in particular by Marc Prensky and Don Tapscott: Prensky, M (2001) Digital natives, digital immigrants. On the Horizon 9, 1–6; Prensky, M (2010) Teaching Digital Natives: partnering for real learning (London: Corwin); Tapscott D. (1998) Growing Up Digital: The rise of the net generation (NewYork: McGraw Hill); Tapscott, D (2009) Grown Up Digital: How the net generation is changing your world (NewYork: McGraw-Hill)

40 Bennett S, Maton K &Kervin L (2008) The 'digital natives' debate: a critical review of the evidence. British Journal of Educational Technology 39, 775–786; Jones C, Ramanau R, Cross SJ & Healing G (2010) Net generation or digital natives: is there a distinct new generation entering university? Computers & Education 54, 722– 732. Jones, C & Czerniewicz, L (2010) Describing or debunking? The net generation and digital natives,. Journal of Computer Assisted Learning 26: 317-320; Bennett, S & Maton, K (2010) Beyond the 'digital natives' debate: Towards a more nuanced understanding of students' technology experiences..Journal of Computer Assisted Learning 26: 321-331

41 Livingstone, S (2009) Children and the Internet (Cambridge: Polity)

42 Buckingham, D (2007) Selling childhood? Children and consumer culture. Journal of Children and Media 1(1): 15–24; Cook, DT (2004) Beyond either/or. Journal of Consumer Culture 2: 147–153

Moreover, with the arrival of social media and web 2.0, there is an increasing tendency to see young people not just as users or consumers but as digital producers in their own right, empowered by technology and the exponential power of digital networks to participate in a huge diversity of cultural and civic pursuits.[43] Indeed, there has been increased talk of 'DIY media' where technology use represents a groundswell of creative, grassroots do-it-yourself activities; as a consequence young people have been dubbed a 'DIY generation.'[44] This DIY culture appears to offer the potential for a revolutionary or transformative pedagogy involving digital media cultures, although as yet this is an unrealized hope.[45]

As a counter-discourse, however, the young journalists Ed Bowker and Shiv Malik have written of a 'jilted generation,' those born since around 1980 with all the luxuries of youth media at their disposal but are also inheriting the financial, political and environmental fallout of baby boomer extravagance.[46]

Therefore, besides the economic imperative, the role of technology in curriculum development has received impetus from the cultural realm of empowering DIY media and from a cultural code with its stress on creativity, and emotional expression. What is especially significant about this debate around young people as digital participants is that whereas previous generational debates worried about the degrading influence of youth popular culture, nowadays youth media networks are providing a template to which education is urged to adapt. Educators are being urged to shift centrifugally, moving outside of school into the disorganized cultural periphery of youth media cultures.

Changing schools?

These changes in childhood and youth suggest implications for what gets taught in schools; or, in other words, for selecting the content and structure of the curriculum. In academic texts, government policy documents, the out-pourings of think-tanks, and increasingly in local curriculum design in schools, a discourse of educational change demands that schooling be reconfigured to meet the demands of life in the so-called new economy. In this discourse, school subjects, learning skills, conventional classroom arrangements, grouping by age, and countless other globally recognizable characteristics of schooling are often seen as a relic of a by-gone age of bureaucracy, centralization and 'sorting.'

Instead, schools are encouraged to decentralize in a number of different ways. One form of decentralization is articulated in terms of loosening up the grip of schools on authoritative and state-defined knowledge to be included in the curriculum and in terms of welcoming a multiplicity of cultural perspectives from outside the classroom. Another form of decentred thinking concerns intelligence. For some educational commentators, we are beginning to understand the cognitive and neuroscientific bases of intelligence more effectively. This coincides with the shift to a fast-changing world which challenges the ways in which intelligence has been approached in schools, namely, as if it's a fixed, one-dimensional and individual commodity or possession when in actual fact it's socially 'composite.'[47] Network-based media support this vision of a shift to centrifugal schooling, 'wider skills,' and multiple intelligences theories.

43 Bruns, A (2008) Blogs, Wikipedia, Second Life and Beyond: From production to produsage (London: Peter Lang); Burn, A (2009) Making New Media: Semiotics, culture and digital literacies (Oxford: Peter Lang)

44 Knobel, M & Lankshear, C (eds) (2010) DIY Media: Creating, sharing and learning with new technologies (Oxford: Peter Lang); Chatfield, T (2010) Debating the DIY generation. Prospect 175. 18 October. URL: **www.prospectmagazine.co.uk/2010/10/debating-the-diy-generation**

45 For an assessment of the potential for participatory media culture to contribute to a transformative or critical pedagogy see Suoranta, J & Vadén, T (2010) Wikiworld (London: Pluto Press)

46 Bowker, E & Malik, S (2010) Jilted Generation: How Britain has bankrupted its youth (London: Icon)

47 Cope, B & Kalantzis, M (2008) New Learning: elements of a science of education (Cambridge: Cambridge University Press); Lucas, B & Claxton, G (2009) Wider Skills for Learning: What are they, how can they be cultivated, how could they be measured and why are they important for innovation? (London: Nesta) URL: **www.nesta.org.uk/library/documents/DisPap%20-%20CRL%20Wider%20Skills%20v6.pdf**; Lucas, B & Claxton, G (2010) New Kinds of Smart: How the science of learnable intelligence is changing education (Maidenhead: Open University Press)

Yet the wider economic and cultural factors that influence this turn to centrifugality have been relatively neglected in critical research on media and technology in education. Neil Selwyn argues that researchers in the field of education and technology focus largely on learning processes or 'state of the art' issues and ignore the 'social milieu' within which technology use takes place. These milieu include educational institutions such as schools and the local contexts of the household, community and workplace, as well as commercial marketplaces, nation-states and global economies.[48] Roger Dale and coauthors have also shown how technology is framed, interpreted, constructed and implemented through a series of different agents (from the supra-national OECD to the micro-level of parental homes) operating at different scales, with different purposes and different levels of influence.[49]

Our point here is that education systems and economies are shaped by similar political and cultural histories; one does not directly influence or determine the other. For that reason it is important to aim for an understanding of their interdependencies and interrelationships. At the present time, changing or developing the curriculum alone cannot overcome the problems with mass schooling; instead, educational change needs to be understood as a societal challenge within which curriculum development is but one activity, albeit a highly important activity. Participatory youth media is in many ways interdependent with these developments, and therefore these contexts must be considered in curriculum development. Both the economic code of technological effectiveness, market choice and deregulation, and the cultural code of creativity and expression need to be considered in 21st century curriculum development.

Any attempt to understand or actively to bring about change in schools, and in the curriculum, therefore depends on a textured understanding of the economic and cultural contexts within which such changes are influenced and shaped. The shift towards centrifugal schooling needs to be understood at the micro-scale of the learner and the middle level of the school as an institution; but it is also a macro-level issue of related social, technological, economic, cultural and political change. Understanding these interdependencies requires an analytical approach to media and technology in society.

48 Selwyn, N (2010) Looking beyond learning: notes towards the critical study of educational technology. Journal of Computer Assisted Learning 26: 65-73

49 Dale, R, Robertson, S & Shortis, T (2004) 'You can't not go with the technological flow, can you?' Constructing 'ICT' and 'teaching and learning.' Journal of Computer Assisted Learning 20: 456-470

Beyond technology epithets

Youth media needs to be viewed in relation to wider technological trends. As we have begun to see, new media and digital technology are now so commonplace, at least in the developed and westernized parts of the world, that they seem easy to accept as just parts of mundane everyday experience. Statistics indicate that personal access to computers, the internet, and mobile telephones is growing all over the world, and not just among the young.[50]

Media and technology have therefore made a significant mark on social, leisure and working life. Steve Woolgar has shown how the contemporary world is characterized now by a range of media and technology related 'epithetized phenomena,' whereby terms such as 'virtual,' 'Interactive,' 'global,' 'mobile,' 'digital,' 'electronic' (or simply 'e-'), 'cyber-,' 'network' and so on are applied as epithets to various existing activities and social institutions. Technology has seemed to be ushering in a new epoch of epithetized developments, such as 'e-commerce,' 'mobile learning,' 'global governance,' and 'information society.'[51]

It is popularly assumed that the sheer volume of technological innovations in this context must be exerting a significant impact upon the social world. But the deterministic 'technological impact' perspective is too simplistic for an analysis of media and technology in society. We need to take a more nuanced view of the interactions between technology and the social world. Technology does not automatically determine society, and nor does it develop somehow autonomously from its social contexts. Technologies and media are valid as distinguishing features of a new society but should not be confused as its main social dynamic. Frank Webster provides five useful perspectives for the analysis of technology: economic, occupational, spatial, cultural, and theoretical:[52]

- **Economic.** Understanding digital times from the economic perspective involves charting the growth in economic worth of informational or technological activities. In the late 1970s the USA was declared an 'information economy' because almost half of US GNP had been accounted for by the combination of information sectors such as publishing,

50 Center for the Digital Future (2010) World Internet Project: International report (Los Angeles: University of Southern California, Annenburg School Center for the Digital Future)

51 Woolgar, S (ed) (2002) Virtual Society? Technology, cyberbole, reality (Oxford: Oxford University Press)

52 Webster, F (2006) Theories of the Information Society, 3rd ed (Abingdon: Routledge). These categories follow Webster's typology although we have identified additional key points and references as appropriate.

media, computing and education. Behind the statistics, however, are a series of interpretations and value judgments about what to include or exclude from the information sector.

- **Occupational.** What does it mean to be an 'information worker,' to be employed in 'informational occupations' in the 'information sector'? Much has been written about changing patterns of work as 20th century physical manufacturing industries went into decline and technology-based informational industries boomed towards the millennium. Thus, it seems that advanced economies are increasingly driven by people whose major occupation is to manipulate symbols and data, create and communicate knowledge, produce and use information: 'knowledge workers' or 'symbolic analysts.'[53]

  Again, however, classifying occupations as informational, symbolic or knowledge-based depends on interpretation, and glosses over huge disparity between high-level and high-wealth creative producers and low-waged service workers. Critical accounts suggest that high-wage symbolic analysts congregate in 'ghettoes of affluence' where they no longer see themselves as dependent upon the society in which they live for their economic livelihoods and where they share no sense of collective purpose with their fellow citizens, particularly those less fortunate than themselves.[54] At the same time, many of the new occupational classifications and structures come from business management which has a tendency towards revisionism and a concern with reinvention, redesign, restructuring and so on: it serves business well to engage in perpetual reinvention and revision.

- **Spatial.** Understanding digital times through space and spatiality means recognizing how 'networks' and 'information highways' and so on affect relations in time and space. With the internet now linking points separated by enormous geographical distances in real-time without delay, there is a compression of time and space. Business, socializing and leisure can therefore now take place at local, national or international scales.[55]

- **Cultural.** In everyday life there has been an enormous increase in technology and information. This seems quite obvious when we consider the ubiquity of TV, radio, computers, the internet, mobile telephones, and all the various media formats they support. We live in a technology, information and media-dense world, constantly surrounded by messages to which we may or may not respond.

  But the information environment is also highly 'intimate' and highly 'constitutive' of people. Modern life is concerned with information and symbols, as shown by the clothes we wear, the fashions we subscribe or aspire to, the means by which we communicate with friends, or present ourselves to others by creating messages about ourselves by manipulating all the symbols at our disposal (through clothing brands, music choices, written text, photographs, and so on). Increasingly it seems that culture in digital times involves each of us constantly 'working' on our own selves and our identities to signify our relations with others, our cultural affiliations, and our unique positions in the world.[56]

- **Theoretical.** Webster's final category is the most complex. He argues that theoretical knowledge is now required in almost any technological application or activity, whereas until fairly recently even highly specialized professions depended more on experience and skill than abstract and generalizable theoretical principles. For example, theoretical principles underpin all innovations in science and technology; theoretical knowledge is at the core of much political debate and policy; more mundanely, theories help us decide on diets and exercise regimes to maintain our physical health.

  Theoretical knowledge therefore permeates areas of professional specialization as well as many aspects of day-to-day life and the ways in which each of us seeks to manage our own lives. That this is not dependent entirely on media or digital technology ought to be clear; but just as obviously, digital technology and media are the instruments by which such theoretical knowledge can be easily packaged, transmitted and learned. In other words, in these digital times we are, more and more, and often without explicit recognition, engaging with a range of theoretical constructs, principles and knowledge that guide us in our daily choices, whether at work, while socializing, or while looking into a mirror.

53 Reich, R (1991) The Work of Nations (New York: Simon & Schuster)
54 Brown, P & Lauder, H (2001) Capitalism and Social Progress (Basingstoke: Palgrave)
55 Harvey, D (1989) The Condition of Postmodernity (Oxford: Blackwell)
56 Bauman, Z (2008) The Art of Life (Cambridge: Polity)

The kind of changes in which technology and media are implicated are more significant and complex than technology development alone. There are economic, occupational, spatial, cultural and theoretical dimensions that need considering in any account of a complex and ongoing shift to increasingly digital times. All of these factors will need to be taken into account in any attempt to modify the school curriculum if it is to respond usefully to the contemporary media-dense world that children are growing up in. These all come together in the decentred centrifugal logics of 'informationalism' and the 'network society.'

Informationalism and the network society

In the last few decades, there has been a major shift from 'industrialism' to 'informationalism' as ways of organizing and constituting capitalism. This era of informationalism has been described through a number of related epithets, including post-industrial society, post-Fordism, and the information age, but there is also compelling empirical evidence rather than mere hype to support it. Where industrialist capitalism depended on the production and consumption of manufactured products for the production and accumulation of wealth, the growth of informationalist capitalism since the 1970s depended instead on processes of production involving knowledge generation, information processing and communication.

Of course, information and knowledge was always required for industrial manufacturing too; the key difference is that in informationalism 'knowledge is enacted upon knowledge,' or, as Manuel Castells elaborates it:

> Information processing is focused on improving the technology of information processing as a source of productivity, in a virtuous circle of interaction between the knowledge sources of technology and the application of technology to improve knowledge generation and information processing.[57]

Therefore, informationalism as a distinct 'periodization' refers to a new and emerging era during which information processing and knowledge production have taken on enhanced importance economically and occupationally, but with spatial and cultural implications too.

The informationalist changes witnessed over the last two decades or so can be organized in terms of a range of factors within all of the economic, occupational, spatial and cultural domains. From the economic, occupational and spatial perspectives, there has been a series of shifts:

- away from old heavy manufacturing toward new high-tech industries
- away from large, hierarchical and bureaucratic forms of mass production toward flatter, leaner networked organizations where individuals are multi-skilled and ready to assume flexible ways of working
- away from economic nationalism toward globalized, transnational corporations, global movements of capital, and the promotion of free trade through internationally agreed deregulation.

In the cultural domain too a series of shifts has occurred:

- away from an emphasis on production toward an emphasis on consumption
- away from standardized mass production toward more differentiated and specialized niche marketing to particular groups of consumers
- away from processes of 'massification' toward difference and diversity and processes of individualization
- away from an old politics of class toward a new 'identity politics' based in gender, ethnicity, sexuality and other forms of association, affiliation and belonging to diverse groups and communities.[58]

For Castells, these informational changes were characteristic of the emergence of the 'network society.'

The network society is a global society structured around networks activated by digitally processed information and communication technologies, though it diffuses selectively throughout the planet. Not everyone is included in the network society, but everyone is affected by the processes that take place in global networks. From the perspective of education and knowledge, understanding the network society is essential because new demands are being made of the education sector as networks proliferate.

57 Castells, M (1996) The Rise of the Network Society (Oxford: Blackwell)

58 Brown, P & Lauder, AH (2001) Capitalism and Social Progress (Basingstoke: Palgrave Macmillan); Moore, R (2004) Education and Society: Issues and explanations in the sociology of education (Cambridge: Polity)

Castells specifically shows how one fundamental divide within the network society is between 'self-programmable labour' and 'generic labour.' This is the economic and occupational structure of the network society. Self-programmable labour refers to the autonomy and 'creative capacity' to search information and recombine it into knowledge. This is where value is derived in the network society.

As a consequence, education and training is required to ensure creative capacity and the ability to co-evolve with changes in organization, in technology, and in knowledge. Generic labour refers to the overwhelming majority of workers on the planet, whose tasks, though necessary, are little valued and easily replaced with machines or shifted to lower-cost production sites.

It is self-programming rather than generic labour that yields the most productivity pay-off, and this value comes from the transformation of the production process that Castells terms 'the rise of the network enterprise.' The network enterprise is characterized by being decentralized and flexible; not by oligopolistic cartelization of multinational corporations but by cooperation in different networks on a variety of short-term projects. The decentralized network enterprise, with its self-programmable labour and its creative capacity, is therefore the main source of innovation and valuation in the network society.

Thus, the network society is structured around the decentralization of production processes and value-creation, but specifically around the creation of value by self-programmable labour searching, processing and recombining information into knowledge. The task for education within the network society must be to ensure an adequate supply of self-programmable labour, as well as the generic labour to execute its instructions.

Castells is a careful and sophisticated empirical researcher marshalling together the documentary evidence that the network has attained such structural significance in economics, the occupational structure, and media. But the theory of the network society is relevant, too, in the cultural domain. Castells offers a detailed empirical analysis of youth media in the network society, which we need to look at next.

The network society and youth media

Castells is especially interested in power and in how issues of power such as autonomy and control are exercised and exerted in the global digital age.[59] Like many other digital age commentators, Castells argues that we now inhabit a convergent communicative universe that is multimodal, multichannel and multiplatform, involving participation in processes of production, editing, and distribution alongside the consumption of information and content. All forms of mass communication have now converged. This includes one-directional societal communication or mass communication, where a message is sent from one source to many, such as broadcast TV, radio, books, and newspapers, and interpersonal communication where the message is sent from one to one.

This convergence has given rise to a new form of mass communication, or 'mass self-communication.' It is mass communication because it can potentially reach a global audience (YouTube video, message to an email list, a blog with RSS links) yet it is also self-communication because its production is self-generated, and because retrieval of content from the internet and communication networks is self-selected ('my time' not 'prime time'). Thus we see the rise of 'creative audiences,' interacting by forming networks of communication that produce shared meaning or even collaborate to produce new 'remixes' and 'mashups.'

However, this potential for creative autonomy is shaped, controlled, and curtailed by a concentration of interlocking corporate media and network operators. These include global multimedia business networks and government-owned media which have taken advantage of deregulation and liberalization to integrate networks of communication, platforms of communication, and channels of communication. They've also sought to control the 'connecting switches' between media and financial, industrial, cultural and political networks. So, in the network society there is a greater degree of decentralization of cultural life, with anybody potentially able to communicate at large with audiences around the world, to form interpretations and produce messages of their own. At the same time this positive potential for a decentred, seemingly democratic approach to media and communication is being shaped and structured to a degree by ongoing attempts by governments and businesses to regulate and control and make money from this massive global structural interconnectivity.

59 All references in this section are to Castells, M (2009) Communication Power (Oxford: Oxford University Press)

Communication and meaning-making, therefore, are matters of constant interaction between communicative subjects and networks. The ways we access and construct knowledge, and to create meaning in our own minds, are shaped by the networks to which we have access, whilst we also enjoy some autonomy to influence and shape those networks in return. As Castells puts it: 'We are networks connected to a world of networks.' In this series of connections, Castells seeks to show how the new global communication system is constituted in and by social relations, culture, finance and capital, politics, the economy, and establishes itself even in the networks of neural patterns that structure our emotions and consciousness.

This analysis of technologies of mass self-communication is extremely important for reconsidering the links between youth media and the school curriculum, not just because it leads to a consideration of how new convergent communication systems interact with human brains in the construction of meanings, but because it links the kinds of communication technologies that young people now take for granted as an everyday part of the social media environment to political, cultural and economic considerations.

Importantly, Castells draws attention to the role of emotions and affect too. This is because the actions of human beings depend on particular neural patterns that allow us to relate to other individuals. These patterns make it possible for us to imitate or empathize with others, and to identify or reject narratives in TV, cinema or literature, and so on. Therefore engagement in networks of communication, and our responsiveness to the messages received through those networks, is fundamentally emotional rather than dominated by rational, self-optimizing choice, as the pro-market enthusiasts would have us believe.

If we are to take seriously the idea that a curriculum can be shaped and structured to take account of the importance of technology in society—with economic, occupational, spatial and cultural implications—then we need to recognize this as a concern with networks. Networks will be part of the economic, occupational, spatial and cultural landscape that the school curriculum ought to be preparing young people for. Networks and mass self-communication are a key part of young people's digital participation in an increasingly decentralized and disorganized world.

We next need to locate the discussion of networks and informationalism in wider sociological inquiries into 'disorganized capitalism,' 'neoliberalism' and the 'knowledge economy' before returning to implications for curriculum development.

Disorganized capitalism

Taking up the challenge of analyzing the recent history and political economy of our present times, Scott Lash and John Urry propose that the final decades of the 20th century were characterized by a shift from 'organized' to 'disorganized' capitalism. Lash and Urry's starting point is Marx and Engels' characterization of capitalism as a revolutionary force, sweeping away older social relations and replacing them with new ways of producing and working and new ways of living.

But towards the end of the 20th century, the capitalism that Marx and Engels were describing had in certain societies come to an end. In the 20th century the rise of organized capitalism meant that money, the means of production, consumer commodities and labour-power came to flow most significantly on a national scale. Organized capitalism was based on:

- the increasing domination of large national economic, social and political institutions over peoples' lives
- increasing average size of workplaces
- rising rates of capital concentration
- forms of corporatism that relied on the banks, industry and the state working together
- the continued growth of the process of urbanization
- collective bargaining taking place on a national (rather than local) scale
- the dominance of the industrial male working class.

The politics of organized capitalism was structured by social class. People lived in class-homogenous neighbourhoods, and their political allegiance was aligned according to social class.

At the end of the 20th century, however, circuits of capital, commodities and money were increasingly taking place on an international scale. In this sense capitalism is 'disorganized' because the flows of subjects and objects were progressively less synchronized within national boundaries.

Consequently, a series of processes have led to the increasing disorganization of capitalism. These include the globalization of economic, social and political relationships which have undermined the coherence, wholeness and unity of national societies; economic changes which have made mass production of standardized products in manufacturing plants a thing of the past, and which have inaugurated significant changes in the structure and composition of the labour force; and geographical changes in the organization of production, whereby corporations operate on a global scale in order to take advantage of wage-differentials to realize profits.

Disorganized capitalism has three dominant characteristics:

- **The semiotics of everyday life.** The ubiquity of representations in television, adverts, popular music, videos, computers and so on comes to constitute a significant portion of the 'reality' that surrounds people. In other words, we increasingly live in 'a world of signs.'

- **The new 'Professional Middle Classes.** Who assume greater importance in disorganized capitalism, use postmodern cultural goods to challenge traditionalist culture. To the extent that this group dominates social and cultural life, then postmodernist culture becomes dominant.

- **The decentring of identity.** The reception of postmodernist culture is enhanced by the decentring of identity. The sense of a unitary self is undermined by changes in the class-structure, the influence of the electronic mass media, and disruptions in our perception of time and space in everyday life.

The result is that culture has changed. The postmodern culture of disorganized capitalism is marked by a strong opposition to the authority of age, a focus on the malleability of identity and self, and a marked suspicion of the centralized organization. What results is a relatively depthless world in which people no longer pursue life-time projects or narratives, and seek short-term advantage in a kind of calculating hedonism. Relatively classless cultural forms have become of greater importance in the structuring of contemporary social life:

> Contemporary culture permits an extraordinary heightened availability of social situations, events, myths and images which cohere around and construct diverse subjects, not merely the class-subject beloved by socialists, or the market-generated subject favoured by neo-liberals.[60]

Here Lash and Urry point to the enduring importance of social class in educational thinking, and to the more recent concern with free markets and choice in educational policy, as we detail below. This analysis is important to put alongside Castells. It emphasizes how decentralization and centrifugality extend well beyond the structural and organizational dynamics of commercial and media networks. Reality itself has been radically decentred and deferred into signs and mediated images rather than centred on or anchored to any significantly 'real thing.' Tradition, too, has been challenged as a unitary way of approaching or understanding culture, and instead lifestyles and culture have pluralized and fragmented. Bureaucratic organizations are no longer understood to be effective, and instead the decentralized architecture of distributed organizations and network enterprises are celebrated. All of this is accompanied by a decentering of identity, with individuals increasingly able to identify themselves with a globalized diversity of cultural forms.

60 Lash, S & Urry, J (1987) The End of Organized Capitalism (Cambridge: Polity)

Disorganized schooling

Although this work makes few references to education and schooling, it is possible to think about the implications of the shift from organized to disorganized capitalism for schooling. The modern school grew up with organized capitalism. The provision of universal education was a response to the twin processes of industrialization and urbanization. The increased rationalization of the school system with its grid of catchment areas and hierarchies, serving the populations of localities, the increased size of the schools in order to realize economies of scale, and the use of bureaucratic management techniques, all reflect the concerns of organized capitalism.

At a finer scale of analysis, the introduction—from the late 1950s to early 70s—of a science of pedagogy with its rational curriculum planning and models for effective learning reflects the concerns of a society in which knowledge was increasingly seen as scientific and rational, and the school curricula was designed to meet the requirements of a modern technologically advancing society. As commentators have argued:

> The modern project of education is to do with the cultivation of reason and autonomy as the condition of and for economic and social progress built upon the cumulative growth of a scientific understanding of the world and its associated technical rationality.[61]

In many ways, these features of organized schooling are still in place and influential. This is reflected by the frequency with which critics point out that young people are being prepared for life in the 21st century in a school system designed for the industrial age.

However, these critiques themselves can be read as a response to the processes of disorganization. In terms of school systems, the monoculture of large 'one-size-fits-all' schools is being replaced by a more diverse range of provision. School management cultures—like the 'network enterprises' Castells has located in the commercial world—are increasingly 'flexible,' 'responsive' and marked by flattened hierarchies, and this is reflected in school design where new schools are marked by open-ness, flexible space and porous boundaries, enhanced by the 'connectivity' offered by networked technology and media.

These developments are reflected in pedagogy and the new affective or emotional 'subjects of the self' which encourage personal responses, a less formal set of relations between teachers and students, and co-creation and collaboration.[62]

As these arguments make clear, our present-day 'digital times' are intimately connected to the social and cultural, economic and political realms. David Hartley argues that education is always set within the realms of the economic and the cultural, shaped and influenced both by an economic code emphasizing efficiency, enterprise and effectiveness, and by a cultural code characterized by ownership, empowerment and affectiveness.[63]

Recent educational theory has had to contend with the growing impact of economics on educational policymaking and practice. The ostensibly 'invisible hand' of economics is now viewed as exerting powerful influences on all aspects of contemporary social life and its institutions. Increasingly, research in both the area of curriculum development and the area of youth media is having to contend with increased 'economization' or 'marketization.' Let us now take a brief look at free market thinking and the knowledge economy, the dominant political-economic mode of disorganized capitalism and globalization of the last few decades and a powerful rationalizing force for technology and media in society and education.

61 Usher, R & Edwards, R (1994) Postmodernism and Education (Abingdon: Routledge)

62 On the 'emotional turn' in education see Ecclestone, K & Hayes, D (2008) The Dangerous Rise of Emotional Education (London: Routledge)

63 Hartley, D (1997) Re-schooling Society (London: RoutledgeFalmer)

Free markets

Free market capitalist economics and politics are now so dominant across the world that it seems to have become 'commonsense' as a mode of thinking. Neoliberalism is often understood as 'market fundamentalism' where the rule of economic markets is a determining force, or an 'invisible hand'; this is the idea of markets as 'God.'[64] However, neoliberalism is now understood not just as an economic doctrine but as a political ideology popularized under Margaret Thatcher in the UK and Ronald Reagan in the US, and continued through the policies of Tony Blair, Bill Clinton and both Bush presidencies, as well as rapidly diffusing throughout the world in the 1990s and early 2000s.

Neoliberalism is based on the theory that human well-being can best be secured through the establishment and maintenance of functioning markets in all spheres of human life, including employment, education, property, healthcare and social security. In free market capitalism the market is understood as a highly complex, interacting latticework of exchanges where terms of exchange, or prices, are determined by the voluntary interactions of suppliers and demanders: this market is 'free' because choices, at each step, are made freely and voluntarily.[65] By bringing all human action into the domain of markets, neoliberalism appears to value market exchange as an ethic and guiding hand (the 'invisible hand') for all human action and for maximizing the social good.[66]

The new 'universal commonsense' of neoliberalism abounds in politics, media and business management literature. It features its own distinct vocabulary, including openness, dynamism, flexibility, new economy, market freedom, transformation, and innovation.[67] It is characterized especially by 'being smart.' Smart business and politics recognizes and celebrates the dynamic and nomadic instead of centralized bureaucracy; dialogue and co-operation rather than hierarchical authority; flexibility over routine; culture and knowledge against old industrial production; and spontaneous interaction instead of fixed hierarchy.[68]

This is the new universal commonsense of business and management, where top-down and centralized control has been relaxed to allow for more distributed and emergent management practices; where capital accumulation has been offset by charity and philanthropy; where successful businesses are seen to 'make a difference,' offer socially responsible market solutions, be environmentally sustainable, employ ethical practices, listen to their customers and offer 'personalization.' This is capitalism with a conscience, or capitalism that cares.[69]

This set of ideas is not, however, restricted to business management literature. It is found in everyday language, the mundane use of words and the contexts in which they are spoken. The language of economics works as a kind of 'code' which is used to explain extra-economic activity such as everyday social relations. As a consequence, neoliberal commonsense exerts a powerful influence on the way that many people think, interpret, live in and understand the world. It's not merely a theory of economics supported by politics but an ideology informing a whole way of life that has been normalized and embedded in everyday social organization and the shared imagination. It presents the world as made up of markets and competition.[70]

64 Frank, T (2000) One Market Under God: Extreme capitalism, market populism, and the end of democratic economics (Paradigm)
65 Rothbard, MN (2008) Free market. The Concise Encyclopedia of Economics, 2nd ed, Library of Economics and Liberty. URL: **www.econlib.org/library/Enc/FreeMarket.html**
66 Harvey, D (2008) A Brief History of Neoliberalism (Oxford: Oxford University Press)
67 Bourdieu, P & Wacquant, L (2001) NewLiberalSpeak: Notes on a new planetary vulgate, trans Macey, D. Radical Philosophy 105
68 Zizek, S (2009) Violence (London: Profile Books)
69 McGuigan (2009) Cool Capitalism (London: Pluto Press); Rojek, C (2006) Cultural Studies (Cambridge: Polity)
70 McGuigan, J (2005) Rethinking Cultural Policy (Maidenhead: Open University Press); Couldry, N (2010) Why Voice Matters: Culture and politics after neoliberalism (London: Sage)

Zombieconomics

'Zombieconomics' is the caricature that Ben Fine applies to this kind of 'economics imperialism.' Zombieconomics represents the inevitable creep of economics discourse and concepts into everyday life and popular culture, as demonstrated, for example, by the popularity of books such as Freakonomics. It has proven to be 'impossible to slay':

> Zombieconomics is alive but it is not well because it is also dead ... it is entirely parasitic upon the living, feeding upon it in order to sustain its own life. It has nothing new of its own to contribute. It can only prosper and must do so by feeding upon the living. On the other hand, in so feeding, it not only degrades whatever it touches but also transforms it into its own condition. The process can only come to an end in that nightmare vision in which we have all become zombies.[71]

In such zombieconomic circumstances, individuals are required to re-educate themselves and become more 'enterprising' to fit the new social arrangements (transformed into zombies in Fine's caricature), as Nikolas Rose has explained: 'The enterprising self is ... a calculating self, a self that calculates about itself and that works upon itself in order to better itself.' Thus the self is now inscribed with an 'ethics of enterprise—competitiveness, strength, vigour, boldness, outwardness and the urge to succeed'—and 'the individual is to become, as it were, an entrepreneur of itself.'[72] Mark Olssen has described the formation of this zombie-like neo-liberal consumer self:

> In neo-liberalism the state seeks to create an individual who is an enterprising and competitive entrepreneur.... The shift from classical liberalism to neo-liberalism involves a change in subject position from 'homo economicus' who naturally behaves out of self interest and is relatively detached from the state, to 'manipulatable man' who is created by the state and who is continually encouraged to be 'perpetually responsive'... In this model, the state has taken it upon itself to keep us all up to the mark. The state will see to it that each one of us makes a 'continual enterprise of ourselves.'[73]

71 Fine, B (2008) Zombieconomics: The living death of the dismal science in the age of neo-liberalism. ESRC Neoliberalism Seminar, Centre for Public Policy Research, King's College, London, April 2008.
72 Quoted in McGuigan, J (2009) Cool Capitalism (London: Pluto Press)
73 Olssen, M (1996) In defence of the welfare state and publicly provided education: a New Zealand perspective, Journal of Education Policy 11(3), 337–362

There is an emerging critical view, then, that economistic thinking is bringing about a change in how individuals are understood, and in how they are encouraged to understand themselves, namely as manipulatable and calculating, individualist, competitive and consumerist, self-enterprising and entrepreneurial zombies.

Zombieducation

Increasingly, these aspects of seemingly zombieconomic neoliberal thinking are credited with (or criticized for) influencing particular aspects of education, such as the dominance of target-setting and league tables or the tendency to treat education as a competitive marketplace modelled on (and in fact intimately related to) the private sector.[74] It is irresistible to term this 'zombieducation.'

In zombieducation consumer choice is paramount. The ideal is that choice is available to parents in selecting schools; to students in what learning 'pathways' and qualifications they take; and to teachers in the choice of what curricula they follow. The zombieducational tendency is shown especially acutely in such educational developments as increased parental choice and the rise of academy and trust schools. The trend is toward less state governance of education and increased powers for sub-national bodies and the private sector, so that schools are positioned as institutions that may, like utilities industries,

be privatized. Young people themselves are positioned as enterprising and entrepreneurial, self-improving and autonomous, self-calculating individuals in a competitive education market.[75]

This is an educational 'world vision' that Ivor Goodson has mapped from available international empirical data, characterized by:

- decentralization
- development of an emphatic discourse of privatization and marketization
- standardization of instruction and assessment

74 Ball, SJ (2007) Education plc (London: Routledge); Stevenson, N (2010) Education, neoliberalism and cultural citizenship: Living in 'X Factor' Britain. European Journal of Cultural Studies 13(3): 341–358
75 Ball, SJ (2009) Privatising education, privatising education policy, privatising educational research: network governance and the 'competition state.' Journal of Education Policy 24(1): 83-99

- sacrifice of the critical mission of professional education/training to practical and technical training in economic interests
- business takeover of education and teacher supply
- the creation of quasi-markets for consolidating the processes of privatization
- a dissemination of a view of learners as economically rational, self-interested individuals and the reconstruction of supply in line with this vision
- a redefinition of democracy in terms of consumer choice
- an increased objectification of teachers and learners and curricula and (increasingly) professional education and educators as factors of production
- increases in quick training programmes to maximise economic gains
- increases in judgement of performances according to consumer values.[76]

In addition, four specifically decentralizing or centrifugal characteristics of neoliberal thinking have been identified:

- democratic, efficient and accountable
- responsive to community and local needs
- empowering teachers, parents and others in the community while improving school effectiveness
- improving school quality and increasing funds available for teachers' salaries through competition.[77]

Stephanie Allais summarizes that many such recent centrifugal trends in educational policies, particularly the 'empowerment' of learners through offering more choice and personalization, are focused on optimizing the economic behaviour of individuals, which involves:

> A rewriting of education according to a very narrow economic script that is dominated by the idea of individuals (learners) making rational self-interested choices, supported by mechanisms such as quality assurance and outcomes-based qualifications which are designed to regulate the 'market in learning.'[78]

Indeed, for Allais there is a 'new education paradigm' emerging which is characterized by outcomes-based curriculum reforms and qualifications frameworks, competency-based training and ideas such as lifelong learning. 'This new paradigm,' Allais writes, 'is positioned against 'traditional' approaches to curriculum and pedagogy':

> Subject-based curricula are criticized as being outdated, irrelevant, and causing a 'mismatch' between the skills produced by education and training systems and those required by the labour market. Problems are attributed to a focus on 'content,' at the expense of 'learning how to learn' or 'skills and competencies,' and much is made of the 'speed of discovery' of knowledge. ... There is an increased emphasis on the link between the 'traditional' approaches to education and economic backwardness, and a renewed attack on education institutions.

For Allais this new educational paradigm is based on the 'apparently 'common sense' popularity of learner-centred outcomes-based curriculum reform' whose 'underpinning logic derives from neoliberalism and the conceptual tools of neoclassical economics.' This is 'economics imperialism' or zombieducational thinking in curriculum development.[79]

The argument therefore is that neoliberal ideals of consumer choice, enterprise and enterpreneurialism are becoming embedded in the everyday organization of education, and by dint of that fact that education is 'acting out' or 'enacting' an economics script which emphasizes learners making self-calculating choices in a marketplace of learning choices. Parents, students and teachers are all positioned as enterprising selves, working reflexively on themselves to ensure they are able to maximize or optimize the potential of the new educational marketplace of consumer choice.

76 Goodson, I (2010) Times of educational change: towards an understanding of patterns of historical and cultural refraction. Journal of Education Policy 25(6): 767–775

77 Astiz, MF, Wiseman, AW & Baker, DP (2002) Slouching toward decentralization: Consequences of globalization for curriculum control in national education systems. Comparative Education Review 46(1): 66-88

78 Allais, S (2009) Smoke and Mirrors: What's really informing the growth of national qualifications frameworks internationally? Paper presented at the 10th UKFIET conference, Oxford University, 14-17 September 2009

79 Allais, S (2010) Economics imperialism, education policy, and educational theory. Paper presented at the Education, Work and the Knowledge Economy seminar, School of education, University of the Witwatersrand, 10 September 2010

This is a 'free market' of education where learners are assumed to possess the capital that can be exchanged for particular outcomes or qualifications. For example, researchers have pointed out how neoliberal ideals such as entrepreneurialism and enterprise have been enshrined within education, with programmes and initiatives set up to ensure that today's learners are tomorrow's creative innovators.[80] Far more mundanely, neoliberalism has also been linked to a huge increase in 'management' and 'performance,' so that teachers' work and students' learning are both subjected to scrutiny and judged from the perspective of ensuring maximum efficiency and effectiveness.[81]

Technological fixes

Most importantly of all, neoliberalism is closely associated with the sophisticated deployment of ICT. Because neoliberalism aims to accommodate all human action within market exchange mechanisms, it requires massive technologies to accumulate, store, transfer and analyse information to guide decisions. This intense pursuit of technological solutions to lubricate complex market processes percolates right through the commonsense ways of doing business, socializing, and learning. Within the 'entrepreneurial commonsense' of neoliberal business and politics, there is seemingly a technological fix for any problem.[82] For capitalism that cares, there must therefore be a technological fix for social problems.

Within schools, ICT has been positioned as just this kind of fix. Not only can ICT help drive up standards, raise levels of achievement, and provide greater levels of motivation, as well as prepare young people for 'smart,' responsible, dialogic, dynamic, and flexible work and labour practices; it can also alleviate social inequality. In other words, it is an ideal medium for encouraging more participation in schools and for changing the education system itself to be more 'smart,' dialogic, responsible, dynamic and flexible.

In condensing some of these points we risk suggesting that political concerns with the economy directly determine the shape and structure of the education system. We recognize, rather, that education is shaped by many mediating influences other than the economy. In fact, parallels between economic organization and the curriculum are related to how the economy and the education system have both been shaped by similar cultural and political shifts.

As such, then, neoliberalism is the dominant political-economic message system emerging from the broader 'informationalist' context of the global digital age. Neoliberalism is structuring the economy at the same time as its messages are structuring aspects of education, and exerting effects on the development of the curriculum. This has proven especially so in the apparent acceptance of neoliberal arguments about the importance of the 'knowledge-based economy' which have very effectively entered educational and curriculum discourse in advanced countries around the world.

Knowledge economy as policy discourse

As we have already seen, the emphasis on 'economy' in knowledge economy points to the fact that it is largely interested in occupational issues, that is, in what kinds of work and occupation are taking precedence in the informational age over the brawn and dexterity with machines that characterized industrialism. To reiterate, the knowledge economy depends on labourers who are skilled in information work, since wealth production in the knowledge economy comes not from physical effort but from ideas, thinking, creativity and innovation. As such, economic value is put on people who have the skills to be knowledge workers, symbolic analysts, or informational labourers. These categories are used to describe anyone who works primarily in the creative industries (film, design, software development, advertising), in research and consultancy, and in most professions involving the production or innovative mobilization of new ICT applications.

It is with issues about the development of a knowledge economy that recent educational debate has been concerned. Indeed, while discussions of neoliberalism are freighted with heavy political baggage, the knowledge economy is often presented in de-politicized terms as if it merely describes a taken-for-granted extant reality, especially so in policy texts. As such the knowledge economy has been deployed as a discursive category in educational policy.

80 Craft, A & Jeffrey, B (2008) Creativity and performativity in teaching and learning: tensions, dilemmas, constraints, accommodations and synthesis. British Educational Research Journal, 34(5): 577-584

81 Ball, SJ (2003) The teacher's soul and the terrors of performativity, Journal of Education Policy 18(2): 215–228; Barker, B (2008) School reform policy in England since 1988: relentless pursuit of the unattainable, Journal of Education Policy, 23(6): 669-683

82 Harvey, D (2008) A Brief History of Neoliberalism (Oxford: Oxford University Press)

Many critical commentators have questioned the material existence of the knowledge economy and suggested that it may be a largely rhetorical device. Bob Jessop has shown that the knowledge economy depends on a particular 'economic imaginary' and the act of 'imagineering,' that is, an imaginatively engineered but more or less coherent set of recognizable signifiers with 'partial' correspondence to the real material world.[83]

As Kenway and colleagues have pointed out, however, even if the knowledge economy is mere fantasy, it has become such a commonplace that it has the potential to exert material effects in the classroom. Indeed, Kenway and co-authors challenge the monopoly position of the knowledge economy in education discourse with counter-discourses of ethics, social justice and responsibility and other 'alternative economies.'[84] Thus, while the knowledge economy certainly should not be viewed as an invisible hand controlling or influencing the direction of education and the organization of the curriculum, it should be understood as an important political construct in the creation of new educational visions of the curriculum of the future. Even imaginaries exert effects.

The knowledge economy is supported by a strong discourse or message system about the kind of education systems and curricula that are now required, and about the kinds of outputs they will produce in terms of people skills (as knowledge workers, symbolic analysts, informational labourers and so on), as well as about the kind of society that is considered desirable for the future. Education is a site where the political imagination exercises these fantasies of economic and social change.

The knowledge economy is often posited as a determining factor in the organization of the curriculum. Owing to the needs of the knowledge economy within a context of international trade and global competition, it is claimed, the education system is required to produce the human capital that can contribute to it in the shape of highly-skilled informational labourers.

Many features of the idealized knowledge economy under neoliberalism—socially responsible, entrepreneurial, flexible and smart—are now therefore being piloted, tried out and eventually acted out in education as part of a 25-year 'Great Experiment' in the educational arena that corresponds directly with the Great Experiment of neoliberal economic policy worldwide.[85]

For critics, it has positioned young people as 'lab-rats in a decades-long economic experiment': 'new recruits for the 'globalized economy' or the 'knowledge-based economy'' which requires flexible labour, transferable skills, and innovative working practices. This experiment produces a constantly changing short-term society composed of episodes and fragments within which it is difficult for anybody to develop a coherent narrative of personal identity and life history.[86]

While policy texts certainly do espouse this kind of direct correspondence between the economy and education, educational research has been more careful to assert that education is shaped by other mediating influences than the economy alone. At the same time, educational policies are not straightforwardly implemented in schools, but diversely and repeatedly contested, interpreted, and variously enacted in original and creative ways within curriculum approaches, institutions and classrooms.[87] It is important, then, to recognize the curriculum not as a straightforward textual manifestation of political-economic doctrine.

That said, as we have seen, concepts such as the knowledge economy and the seemingly commonsense discourse of neoliberalism mean that education and the economy are both being shaped by similar ideals—in much the same way that they shared a similar political and cultural history in the industrial Fordism of the mid-20th century. As such, neither education nor the economy can be isolated from a wider contextual understanding of the contemporary social world.

83 Jessop, B (2009) Introduction. Jessop, B, Fairclough, N & Wodak, R (eds) Education and the Knowledge-Based Economy in Europe (Rotterdam: Sense Publishers)

84 Kenway, J, Bullen, E, Fahey, J & Robb, S (2006) Haunting the Knowledge Economy (Abingdon: Routledge)

85 Fisher, M (2010) Capitalist Realism: Is there no alternative? (Winchester: Zero Books); Klees, SJ (2008) A quarter century of neoliberal thinking in education: misleading analyses and failed policies. Globalization, Societies and Education 6(4): 311–348

86 Bowker, E & Malik, S (2010) Jilted Generation: How Britain has bankrupted its youth (London: Icon)

87 Braun, A, Maguire, M & Ball, SJ (2010) Policy enactments in the UK secondary school: examining policy, practice and school positioning, Journal of Education Policy 25(4): 547-560

Flexibility-on-demand

So where do these discussions of the broader contexts for youth media and curriculum development get us? We've seen how the empirical reality of the network society and informationalism is bringing about a restructuring of economies and media, how social theory is helping to explain the decentring of social and cultural life, and we have seen how political ideologies of free markets have begun to exert effects on educational policies and imaginaries of curriculum development. Throughout, we keep returning to the related notions of decentralization, network logic and centrifugality. So are we any closer to understanding what centrifugal schooling might look like in these conditions of widespread decentralization?

The American education researcher Torin Monahan provides a compelling analysis of the challenges of decentralization in curriculum development as they are played out in the specific educational context of schools in Los Angeles, California. Monahan shows how neoliberal ideals serve as a dominant expression of educational policies, with school districts seeking to restructure themselves as corporations do—projecting positive images while balancing bottom lines—and accommodating industry's need for compliant labour by emphasising entrepreneurial training, flexible multitasking, mundane skills acquisition and apolitical acceptance of the status quo, rather than expressing themselves as democratic institutions.

Technology is the glue that binds these ideals because it is regarded as essential to 21st century economic progress. As a consequence,

> ... technologies alter the very composition of educational institutions. From classroom activities to organizational forms, from policymaking processes to industry contracting, technology integrates into the root structure of public education, hardwiring new power relations that cannot be removed without threatening the viability of the institution itself.

Monahan offers some useful analytical tools for understanding the role of technology and media in public education: built pedagogy, fragmented centralization, and structural flexibility.

- **Built pedagogy.** This refers to the lessons taught by technological systems of any kind. Technologies are always political because they engender certain power relations and are infused with the values and ideologies of their creation. As such, technologies provide built-in pedagogies for school classrooms that are based on ideas and ideals created within the context of political imperatives for economic development. This is continuous with the way in which school building architecture in the early 1900s reproduced the regimentation of factory assembly lines in order to prepare suitable labour for the then-prosperous manufacturing economy, whilst at the same time serving to sort, order and control students, especially those from working class backgrounds or (in the American case especially at that time) to socialize new immigrant populations.

- **Fragmented centralization.** A key feature of educational policies in nations where neoliberal ideals are dominant is decentralization. Large and hierarchical bureaucracies run against the grain of the innovative ideal of smart, nimble and flexible organizations which are able to adapt quickly to changing circumstances in a highly unpredictable and highly accelerated contemporary world. This decentralizing logic also applies in educational policymaking, where individual schools are increasingly encouraged to restructure to enable greater local autonomy and responsiveness. Technology again is the enabler of decentralization, for it makes it possible for schools to become smarter, carry out more local-level analysis and high-level or complex planning, as well as be more interconnected both with national agencies and distributed networks of other schools and education providers.

  Yet at the same time there has been a shift towards greater centralization in education systems, characterized by a proliferation of state education policies, national attainment targets, performance league tables, and specific ICT procurement protocols limiting schools' choices to a narrow list of preferred suppliers. Thus decentralization is rather superficial, with responsibility increasingly distributed but power more firmly and centrally entrenched. In other words, decision-making and policymaking is becoming more centralized while responsibility and accountability for those decisions is distributed or delegated down the hierarchy chain to schools. This is essentially 'centralized-decentralization.'

- **Structural flexibility.** Flexibility, rather than conformity, is the aspirant ideal for students in order to be able to adapt and re-educate themselves throughout their lives to changing labour markets. But flexibility brings about a range of negative consequences, not least of which is the personal anxiety and enhanced individualization and aggressive competitiveness between young people that emerge when flexibility is demanded. Indeed, within education systems, greater flexibility is necessitated of students to adapt to systems and protocols that are increasingly rigid and controlling; this is 'flexibility-on-demand.'

But flexibility may also have positive implications. What Monahan means by structural flexibility is the creation of enabling systems and conditions for marginalized groups to participate fully in democratic processes. Monahan defines structural flexibility in education as contexts that enable (a) alteration and modification, (b) multiple forms of individual action, interaction, and expression, and (c) power equalization among actors in the system.

Examples include 'wide-open classrooms that decentralize power, invite student mobility and collaboration, and support inquiry-driven learning tasks without imposing formulas or rubrics on students,' as well as a 'technology policy that allows personnel at school sites to assess the school's unique needs, decide what equipment should be purchased, and place orders with the vendors or contractors of their choosing.' These approaches value the rhetoric of flexibility but harness different potentialities to those forms of flexibility offered under neoliberal conditions of centralized-decentralization or flexibility-on-demand.

Monahan's three analytic tools are useful in discussing the school curriculum and technology because they provide ways of understanding media and technologies as a 'built pedagogy' which links students and public institutions intimately with processes of change derived from neoliberal knowledge economy rhetoric; offers a conceptual apparatus for understanding the splintered or 'fragmented' forms of centralization (centralized-decentralization) within which schools are delegated responsibilities and accountability for centrally mandated policies; and provides, in 'structural flexibility,' a conceptual model for the construction of alternative and diverse curriculum approaches which are sensitive to these very tensions and, additionally, are democratically motivated.[88]

Liquid digital times

The social theorist Zygmunt Bauman has articulated vividly the implications of the social, political, and technological changes in these fragmented, digital, neoliberal, knowledge-based times. If we accept that the role of education is to help the young learn to navigate in their world, then Bauman's outline of five principal implications is highly significant. Bauman offers us a summary that can usefully serve as a conclusion to this section.

First, Bauman argues, the social forms and institutions that help to regulate and manage everyday life have become increasingly 'liquid' rather than solid. Patterns of acceptable conduct and behaviour, jobs and the companies that provide them, personal partnerships and friendship networks, and our life prospects all seem uncertain, as if resting on liquid rather than firm foundations. This makes it difficult to take a long view of one's own life prospects.

Second, the categories of power and politics, which have long seemed mutually reinforcing, are gradually being divorced from one another. In a world criss-crossed by digital information networks, the power previously assumed to rest with the state has moved away to the politically uncontrolled global space. Meanwhile, politics cannot operate effectively at this planetary level since it is, by default, locally defined and decided. Instead, global power is increasingly 'subsidiarized' and 'contracted out' to market forces.

Third, state-endorsed welfare against ill-fortune and individual failure has been consistently withdrawn over the last few decades, with the consequence of a collapse in the social foundations of social solidarity, collective action, 'interhuman bonds' and community. With the security net of the state now contracted out to commodity and labour markets, pressure is applied to individuals to serve their own interests. This promotes division rather than unity, and competitive attitudes rather than social collaboration. Society is therefore perceived more like a 'network' or matrix of random connections and disconnections and less like a structure standing on solid grounding.

Fourth for Bauman, these changes have brought about fragmentation in political history as well as individual lives, with everything spliced into 'short-term projects' or 'episodes' which do not combine into sequences such as 'development,' 'maturation' or 'career.'

Fifthly, and finally, the responsibility for resolving the problems and challenges generated by these volatile conditions now falls on the shoulders of individuals, who are positioned as 'free choosers' who must bear the full responsibility for their choices without the state or any authoritative endorsements to provide solutions to today's challenges.

88 Monahan, T (2005) Globalization, Technological Change, and Public Education (London: Routledge)

Thus, in a world where life is defined as a series of unconnected short-term projects and supposedly free individual choices made within ever-changing networks and uncertain social conditions, the best way to serve the individual's interests is not through conformity to rules but 'flexibility.' Flexibility is the 'readiness to change tactics and style at short notice, to abandon commitments and loyalties without regret—and to pursue opportunities according to their current availability, rather than following one's own established preferences.'[89]

These social changes are important for education, and for rethinking the school curriculum, because they suggest reorienting what young people learn, and what they learn it for. Bauman is sceptical about 'flexibility' as a human virtue that can be learned over and above conformity, since its implication is that changing one's mind and intentionally forgetting are good assets to possess, alongside the infinite switching of allegiances, loyalties, and the dispensing of any lifelong or at least prolonged commitments.

Bauman's theory of 'liquid times' thus suggests the very real possibility of a 'liquid curriculum' that is endlessly malleable, dehistoricized, and adapted to short-term aims and objectives. Flexibility is increasingly held up as an essential life skill to be inculcated in the young through brand new educational approaches, and is particularly found in documents related to youth media and education. As Bauman sees it:

> In a liquid-modern setting, centres of teaching and learning are subject to a 'de-institutionalizing' pressure and prompted to surrender their loyalty to 'canons of knowledge' (whose very existence, not to mention utility, is increasingly cast in doubt), thus putting the value of flexibility above the surmised logic of scholarly disciplines. Pressure comes from above (from the governments eager to catch up with the volatile and capricious shifts in 'business needs') as much as from below (from prospective students exposed to the equally capricious demands of labour markets and bewildered by their apparently haphazard and unpredictable nature).[90]

On this basis, it might be claimed that any curriculum development of the future would need to confront the multiple challenges of 'liquid digital times.'

89 Bauman, Z (2007) Liquid Times (Cambridge: Polity)

90 Bauman, Z (2005) Education in Liquid Modernity. Review of Education, Pedagogy and Cultural Studies, 27: 303-317 (316)

Youth media—flexibility or flow?

Youth media are sites of permanent interaction with the contexts that Bauman summarizes and which we have encountered throughout this report so far. Rather than an isolated and self-contained set of technologically-enabled practices amongst young people, youth media practices are interdependent with the changes which constitute these liquid times. Liquidity represents the melting of all permanent and solid structures, the shift from centralized structures to flexible, decentralized structures and finally to increasingly fluid and perpetual 'flows' and motion.

Youth media are continuous with this changing current from flexibility to flows. Nadine Dolby and Fazal Rivzi usefully summarize some of these implications for youth in their book Youth Moves:

> Youth, then, must move differently in the world today than they did in previous generations, as the sites in which they live are themselves transformed. Perhaps most significantly ... schools and other educational institutions are both transformed internally within these new contexts, and are also no longer the sole—or even predominant—pedagogical site for youth.[91]

With this shift to movement, perpetual motion and flows in the ecosystem of youth media comes the need for a reappraisal of curriculum organization and development.

91 Dolby, N and Rivzi, F (eds) (2006) Youth Moves: Identities and education in global perspectives (Abingdon: Routledge).

Curriculum development

In a liquid digital ecosystem of youth media, the kind of curriculum that is most appropriate for young people is an open question. Despite the strength of many political, industry and ideological arguments in this space, curriculum development is also influenced and shaped by a longer history and trajectories of thinking amongst educators from across the political spectrum.

This makes curriculum development itself a politically contested activity, a site of argument and of constantly changing emphases. A curriculum, even a mandated National Curriculum, is never static for very long. Curricula are always being subjected to scrutiny, pressured to adapt to changing circumstances, and enacted differentially by educators in different places at different times.

This section connects the theories and research on decentralization, disorganization, networks and liquidity reviewed in the last section with research on the development of the curriculum. It seeks to explore what issues arise if curriculum developers are tasked with responding to youth media and the contexts with which youth media is in permanent interaction. It seeks to examine the implications of a vision of centrifugal schooling.

A historical and conceptual approach to curriculum development

Many diverse factors affect the organization of the school curriculum. Education systems are historical products. In the previous sections we have attempted to identify some aspects of contemporary economy and culture that are contributing to the shaping of the curriculum of the future. Though these factors provide powerful and in many ways complementary message systems that curriculum developers have been encouraged to adopt (as well as other mediating influences which we do not have space to consider), the shape of a curriculum also depends, to a large degree, on the longer history of its development and its relation to particular educational theories.

Curriculum is a vast field of academic inquiry.[92] Therefore we will only review some key relevant and contemporary research and theory on curriculum development, attempting to provide introductory commentaries on some 'complicated conversations' from the curriculum field.[93]

All curricular developments are socially and historically contingent products, the result of multiple contending forces that do not happen in a vacuum; in other words, a curriculum mirrors the surrounding society in complex ways. A curriculum is in this sense a 'text' comprising of political, social, economic and cultural discourses, all of which may be challenged and rewritten in alternative contexts, or interpreted and enacted differently in different school sites.[94]

Therefore, we aim to provide a brief recent history of relevant debates about curriculum development in context, and discuss theories of curriculum change in the context of concerns related to contemporary technology and youth media and society. Our argument is that understanding curriculum change that may be happening today, or which is being advocated and imagineered for tomorrow, depends on an understanding of curriculum change in recent history and on how curriculum change may be conceptualized in different places and at different times. So this section aims to provide some historical context and some conceptual ideas for apprehending curriculum change here-and-now. It also begins to make some connections to arguments and debates about young people's media reviewed in the previous section.

Curriculum conservatism and curriculum progressivism

Debates about the school curriculum today have a very long history. The English National Curriculum, for example, was formally introduced in 1988, comprising of ten core subjects, all of which had been included in the 1904 list of subjects prescribed for the newly established state secondary schools which would later become grammar schools. Over a century later, a very similar selection of subjects is in place as the statutory National Curriculum, with some newer additions such as ICT and citizenship.[95]

Many commentators therefore argue that the shape and structure of the school curriculum has changed very little since Victorian industrialization. We are still sending children to 'factory schools' despite the fact that these have been 'proven' to be long outdated and outmoded in the information age.[96]

By the 1960s, curriculum scholars were able to identify two highly distinctive approaches to curriculum organization. One approach placed the emphasis on content. This approach stated what subjects were to be studied and what aspects of them were to be studied. The alternative approach, often referred to as 'progressive' education, took the form of a more procedures-based or process model of curriculum. The emphasis was on project work, inquiry methods, experiential and discovery learning. This approach to curriculum was predicated on the idea that education is concerned with processes of intellectual development rather than the assimilation of bodies of knowledge or behavioural changes.

92 For a bibliography of over 3,000 annotated citations in the field of curriculum inquiry see **http://education.ucf.edu/cirs/**

93 William Pinar articulated the call for 'complicated conversations' about curriculum in Pinar, WM (2004) What is Curriculum Theory? (Mahwah, NJ: Erlbaum)

94 See Pinar, WF, Reynolds, WM, Slattery, P & Taubman, PM (2008) Understanding Curriculum: An introduction to the study of historical and contemporary curriculum discourses (New York: Peter Lang), especially Chapter 5: Understanding Curriculum as Political Text: 243-314

95 White, J (2004) Rethinking the School Curriculum: Values, aims and purposes (London: RoutledgeFalmer)

96 For example, Seldon, A (2010) An end to factory schools: A manifesto for education 2010-2020 (London: Centre for Policy Studies)

To have been educated means to have been supported to develop intellectual qualities, not merely to have acquired factual knowledge or had one's behaviour modified in particular prescribed ways.[97]

Much of this work was also highly political in its motivation and represented a challenge to education systems around the world—including Europe, north America, and Latin America—from the radical left. It was intended to transform education as a way of combating the widespread failure of mass schooling to meet children's real needs, or even to provoke a revolution against oppressive forms of governance.[98]

This progressive approach in the UK was best exemplified in the 1967 Plowden Report on primary school education, which emphasized experiential learning, more parental involvement, and the creation of social priority zones to develop more opportunities for the less privileged. Its themes were flexibility in the curriculum, the centrality of play in children's learning, the use of the environment, learning by discovery and the importance of the evaluation of children's progress beyond what was merely measurable. The Plowden Report advocated an approach to curriculum which could build on and strengthen children's intrinsic interest in learning and lead them to learn for themselves, rather than from fear of disapproval or desire for praise.[99]

The progressive movement represented a form of decentralized, centrifugal schooling, but its emphasis was on countering totalitarian regimes or authoritarian discourses, and was politically energized by a more hopeful and emancipatory worldview following the trauma of the second world war, Stalinism, and the global deadlock of the Cold War.

Curriculum innovation

Much of the current curriculum debate emerged in the 1970s, at a time when a series of international economic crises and developments was forcing nation states and governments all over the world to rethink the ways in which they were preparing young people for the future. This was, in fact, a period of rapid and radical centralization of education, as the decentralized education period between the end of the war and the mid-1970s was dismissed for its failure to address economic needs.[100]

Nonetheless, the 1970s may be viewed as a period of innovation and experiment that, in Britain at least, was to come to a close with Conservative Thatcherism by the 1980s (in the US, the 1980 election of Ronald Reagan brought about a similar shift—to the right—in educational policy). In 1975 Lawrence Stenhouse published An Introduction to Curriculum Research and Development, which has remained extremely influential in curriculum theory. For Stenhouse, a curriculum must be understood as a process rather than merely an end-product, or an experience instead of an outcome alone. This was famously expressed in the metaphor of cookery:

> A curriculum, like a recipe for a dish, is first imagined as a possibility, then the subject of an experiment. The recipe offered publicly is in a sense a report on the experiment. Similarly, a curriculum should be grounded in practice. It is an attempt to describe the work observed in classrooms that is adequately communicated to teachers and others. Finally, within limits, a recipe can be varied according to taste. So can a curriculum.[101]

Stenhouse rejected the oversimplifications of 'means-ends' curriculum design as represented by 'intended learning outcomes' and 'behavioural objectives.' He argued instead for any curriculum to provide, at a minimum, a number of grounds or principles of justification, for example:

- formulation of the intention or aim of the curriculum which is accessible to critical scrutiny
- principles for the selection of content—what is to be taught and learned
- principles for the development of a teaching strategy—how it is to be taught and learned
- principles for sequencing
- principles for studying and evaluating progress of both students and teachers
- guidance on implementation in varying school contexts, pupil contexts, environments and peer-group situations
- information on variability of effects in differing contexts.

97 Kelly, AV (1989) The Curriculum: Theory and practice, 3rd ed (London: Paul Chapman Publishing)
98 Examples include, in the US, Holt, J (1990 [1964]) How Children Fail, rev'd ed (London: Penguin); in the UK, Blishen, E (ed) (1969) The School That I'd Like (Harmondsworth: Penguin); and in Latin America, Freire, P (1972) Pedagogy of the Oppressed, trans. Ramos, MB (Harmondsworth: Penguin)
99 Central Advisory Council for Education (1967) The Plowden Report: Children and their Primary Schools (London: HMSO) URL: **www.educationengland.org.uk/documents/plowden/index.html**
100 Jones, K (2003) Education in Britain: 1944-present (Cambridge: Polity)
101 Stenhouse, L (1975) An Introduction to Curriculum Research and Development (London: Heinnemann)

Stenhouse was a subtle and politically engaged curriculum thinker, whose views on curriculum research development were informed by the latest thinking in the sociology of knowledge. Following Michael Young's 1971 edited collection Knowledge and Control, Stenhouse regarded knowledge as socially constructed. What this meant was that the knowledge considered valuable for transmission through the curriculum was a matter of selection according to particular powerful interests in society, particularly those interests and needs of the ruling class.[102]

Stenhouse therefore viewed school subjects as determined by particular 'reference groups' for example professional associations and commercial groups who made claims to set the standard in knowledge. Such reference groups represented a strong tradition of aspiration toward absolutes, warranted knowledge and truth values. For Stenhouse this was an essential understanding in curriculum development. It required anyone involved in curriculum to query any particular curricular selections. The 1960s and 1970s was not only a period of technical curricular concerns, but a fertile moment for debate about epistemology and knowledge in curriculum development.

Yet this concern for curriculum innovation in the 1960s and 1970s was not straightforward. John Nisbet claimed in a 1974 lecture that educational 'innovation' had become something of a 'bandwagon'—with educational innovators seen as up-to-date, efficient, responsive, professional and superior to convention—but it could also be a 'hearse.' What this meant was that any attempted innovation would have to fight to survive: Nisbet claimed teachers were already by the mid-1970s showing symptoms of 'innovations fatigue.'[103]

Curriculum change and innovation, then, was a subject of concern for educators and researchers in the 1970s. While there was still a great deal of optimism about possible change, this was tempered with a degree of enervation and even pessimism that was shared not just in the UK but in Europe, north America, Australia and New Zealand. This was also a period when curriculum researchers had become increasingly aware of how the curriculum was subject to control, either from the centralization of policy via agencies such as the Schools Council in the UK—which had been established in the 1960s to promote new, more relevant approaches to the curriculum—or from a more complicated network of formal and informal controls exercised in different places in the system.[104]

By the end of the 1970s, though, it was clear that governments were seeking to exert more control over the curriculum, reluctant to leave education to the discretion of educational professionals alone. Most notably, this concern for educational control was linked to growing economic demands.

Curriculum and industry

Since the period of 1970s innovation, curriculum debates have been increasingly concerned with economic processes, the globalization of markets, and, most significantly, to the necessity of individual nations to ensure they are adequately educating and training the economic producers and labourers of tomorrow. In other words, there was a shift to strengthen the practical usefulness of the curriculum to economic productivity and political ends.

This was made forcefully clear in a 1976 speech by the British Prime Minister James Callaghan on the role of education in securing national wealth. The speech specified that not just teachers and parents but also government and industry had a key part to play in formulating and expressing the purposes and standards of education.

A subsequent Green paper in 1977 stated that the educational system was out of touch with the fundamental need for Britain to survive economically in a highly competitive world through the efficiency of its industry and commerce. Young people, it was argued, were not 'sufficiently aware of the importance of industry to our society,' were 'not taught much about it,' and consequently they left school 'with little or no understanding of the workings, or importance, of the wealth-producing sector of our economy.' After this, education was as much as possible to be concerned with improving industrial performance and thereby increasing the national wealth. Aspects of this argument persist today in the economic and occupational emphasis on technology in much educational policymaking and knowledge economy rhetoric.[105]

102 Young, MFD (ed) (1971) Knowledge and Control (London: Macmillan)
103 Nisbet, J (1975) Innovation-bandwagon or hearse? Harris, A, Lawn, M & Prescott, W (eds) Curriculum Innovation (London: Croom Helm)
104 Harris, A, Lawn, M & Prescott, W (eds) (1975) Curriculum Innovation (London: Croom Helm)

105 Quoted and discussed in Davies, M & Edwards, G (1999) Will the curriculum caterpillar ever learn to fly? Cambridge Journal of Education 29(2), 265-275

Curriculum restorationism

By the 1980s the dominant curriculum mode in the UK, as well as elsewhere, was content-based. The curriculum to be taught in schools was now a matter of state intervention, not just political influence, of assertion and prescription rather than mere guidance. One way of describing the school curriculum that emerged in this period is as a collection-type curriculum rather than an integrated-type curriculum, as Basil Bernstein put it. A collection-type curriculum is based upon highly prescribed content as well as strong boundaries and insulation between subjects. Students encounter the curriculum as an impersonal mystery which is to be revealed through long apprenticeship.[106]

During the 1980s it became received wisdom amongst hardline New Right politicians that the curriculum was out of control, with hard-left political slogans instead of real knowledge being espoused by extremist teachers. Consequently, in the highly conservative UK and US at least the curriculum in the 1980s and 1990s had more of a rearward-looking cultural restorationist character which revalorized traditional forms of education.[107]

This kind of restorationism sought to protect and reproduce the historic virtues of Western culture, and restore particular forms of social authority through curriculum, pedagogy and discipline. Thus, to take the humanities subjects in the English National Curriculum as an example, in restorationist history Britain was positioned at the centre of history as a benign and progressive influence on the world, while in restorationist geography Britain's imperial tradition was asserted and celebrated over contemporary issues of ecology and economic globalization.

Writing in the mid-1990s, a few years after the introduction of the National Curriculum in England, Stephen Ball described this restorationist approach as 'curricular fundamentalism' featuring clear and absolute moral positions and leaving no room for professional judgment or compromise. It produces a 'regressive fantasy education, the school as historical theme park,' which is removed from its contemporary context and based instead upon the reproduction of a 'curriculum of the dead,' a 'pastiche, an edited, stereotypical, unreal, schoolbook past,' or 'edited highlights from the glossy mirage' of tradition.[108]

106 See Quicke, J (1999) A Curriculum for Life: Schools for a democratic learning society (Buckingham: Open University Press)
107 Jones, K (1989) Right Turn: The conservative revolution in education (London: Hutchinson Radius)
108 Ball, SJ (1994) Education Reform: A post-structural and critical approach (Buckingham: Open University Press)

Curriculum futurism

Two decades on, what is the current state of curriculum change debate? Rearward-facing restorationism has been augmented by a more forward-facing or futurist set of educational policies dedicated to realizing the development of the knowledge economy. Increasingly a range of ideas and rhetorical arguments about the knowledge economy have entered everyday debate about education, to the point that they have become accepted as part of the commonsense vocabulary of education in the 21st century.

The curriculum is of particular importance in this commonsense educational discourse. John Morgan has argued that the curriculum is now the concern of particular 'curriculum entrepreneurs,' a loosely affiliated network comprising of commercial businesses, think tanks and policy advisors who jointly put pressure on the curriculum to be transformed to meet the future requirements of increased entrepreneurial activity.[109] These curriculum entrepreneurs use the curriculum politically as a policy device to align schools with global policy, commercial and societal issues, not least of which, according to Neil Selwyn, are:

> global economic concerns of national competitiveness, the up-skilling of workforces, performative logic of the labour market, the dynamics of global capitalism and the intensification of the economic function of knowledge.[110]

The new 'consensus' about the curriculum in the knowledge economy is that prescriptive content, reproduced in authoritative texts and transmitted to students as a one-way broadcast, is outdated.

Instead, it is claimed that what really counts for a successful life is the ability to be creative, innovative, and interactive. It is 'soft skills' that really matter, alongside and augmented by a range of 'high skills' or competences involving technology and media. The primary interest is in ensuring individuals' employability and organizations' commercial competitiveness into the future.

109 Morgan, J (2010) The 'cultural democracy' of children and their popular media cultures in a UK 'curriculum experiment.'Paper presented at Media Literacy Conference, QEII Centre, London, 19-20 November 2010
110 Selwyn, N (2011) Schools and Schooling in the Digital Age: A critical analysis (Abingdon: Routledge)

This is well illustrated by the Partnership for 21st Century Skills, a global alliance of commercial organizations convened to put pressure on education systems.[111] In a critical discussion of this new consensus about education under neoliberalism, Nick Stevenson claims that schools no longer look like factories: instead they resemble corporations.[112]

The concern to ensure that education met the needs of industry first articulated in the 1970s, and the cultural restorationist perspective that accompanied it, are being continued in contemporary education policy and articulated through the shaping and structuring of the school curriculum. The principal modification has been the development of alternative curricular provisions, focusing on '21st century skills' or on taxonomies of 'competencies' and the production of 'human capital' for the technology-rich 'always-on' era—and this has been taking place worldwide.[113] The emphasis is firmly on consolidating the close compatibility of education with rapid, market-based change in the context of neoliberal politics and economics and the knowledge economy.[114]

This has been articulated as the shift towards a 'Curriculum 2.0,' defined by an 'interest in enabling all young people to live and succeed in the complex spaces of the knowledge economy', through which 'experiences such as collaborative learning, personal development, self-monitoring, 'creativity' and 'thinking' skills are developed as a matter of course in schools.'[115]

Stephen Ball summarizes how contemporary education policy simultaneously faces towards 'an imaginary past' of 'heritage, traditional values and social order and authority' and an 'imaginary future of a knowledge economy, high skills, innovation and creativity and a meritocracy within which social boundaries have been erased.'[116]

This double-vision in education policy, with its implications for curriculum organization, reminds us of the distinction between Ford and Cisco, where Ford's business was based on plant-based assembly-line mass manufacturing and Cisco instead based its business almost entirely online. These different forms of business require very different forms of labour. Ford requires manual labourers who can produce physical goods; Cisco requires knowledge labourers who can produce seemingly 'weightless' products in the shape of ideas, reports, websites, designs and so on (although Cisco does, of course, also rely upon the physical manufacture of computing machinery and hardware, which it outsources to sites of lower-cost 'generic labour').[117]

Schools therefore are required to make the curriculum meet the needs of an increasingly weightless age by ensuring they produce the human capital required of the economy. Children, according to this kind of narrative, are tomorrow's knowledge workers, symbolic analysts, informational agents and so on. The theorist Gilles Deleuze, back in 1992, anticipated what this kind of imagination would mean for schools:

> Indeed, just as the corporation replaces the factory, perpetual training tends to replace the school, and continuous control to replace the examination. Which is the surest way of delivering the school over to the corporation.[118]

At the current juncture in curriculum development, then, ideals from business management appear to be exerting as much authority as texts written by curriculum experts, if not more. At least within policy discussions, the curriculum is suspended between two ideological poles, one facing backwards and seeking to restore traditional forms of education, and one facing forwards and seeking to install a new consensus about '21st century skills' in a knowledge-based economy.

111 Partnership for 21st Century Skills (2006) Learning for the 21st Century (Washington, DC: Author): **www.21stcenturyskills.org**

112 Stevenson, N (2010) Education, neoliberalism and cultural citizenship: Living in 'X Factor' Britain. European Journal of Cultural Studies 13(3): 341-358

113 Allais, S (2010c) The implementation and impact of qualifications frameworks: Report of a study in 16 countries (Geneva: International Labour Office)

114 Jones, K & Thomson, P (2008) Policy rhetoric and the renovation of English schooling: the case of Creative Partnerships, Journal of Education Policy 23(6): 715-727

115 Facer, K & Green H (2007) Curriculum 2.0: Educating the digital generation. Parker S, & Parker, S (eds) Unlocking Innovation: Why citizens hold the key to public service reform (London: Demos)

116 Ball, SJ (2008) The Education Debate (Bristol: Policy Press)

117 Cisco publishes a number of white papers, reports and resources for education, with a particular focus on 'the learning society,' 'education3.0' and 'social entrepreneurs': **www.cisco.com/web/about/citizenship/socio-economic/globalEd.html**

118 Deleuze, G (1992) Postscript on the Societies of Control, October, 59: 3-7

Others have suggested that the curriculum could be organized around 'thematic disciplines'—that is, themed areas that cut across many disciplines which share a range of intellectual resources and concepts and require clusters of interrelated skills—or to reflect interdisciplinarity—the merging of subject areas to explore a problem or issue that a single discipline cannot resolve.[119]

In the analysis provided above, both the restorative and the futurist perspectives were challenged as imaginary, as acts of imagineering. Instead of representing some empirical reality, they simply reflect a set of changing ideas and ideologies which, over time, can be seen to be exerting more or less authority in educational policymaking and on classroom enactment. If these are mere imaginaries, then it is therefore important to consider an alternative range of theories, concepts and ideologies for curriculum development.

Curriculum ideology

Historical accounts of the development of school curricula show clearly how concepts and ideology are used to reinforce or influence different curriculum models. Different curriculum conceptions give authority to particular selections of worthwhile knowledge and represent specific visions of desirable qualities or values, while curriculum ideologies have a more overtly political dimension. There are at least six different curriculum conceptions or ideologies available to the curriculum developer:

- **Intellectual-rationalist ideology.** The earliest known conception of the curriculum, associated with the development of the Greek and Roman empires and subsequently the early universities in Europe, and based on the seven liberal arts (the Trivium and Quadrivium). Intellectual-rationalist curricula are intended to cultivate the intellect, requiring the passing on of an elite selection of true knowledge and the best of the cultural heritage.

- **Theo-religious ideology.** Curricula that are based on religious training or church doctrines.

- **Social-romantic ideology.** Rather than focusing on the subject to be taught, social-romantic curricula focus upon the needs and interests of the child, readying them for democratic and sociable interaction with others. This child-centred curricular ideology is associated with 'progressivist' educators, including John Dewey, Maria Montessori and A S Neill, all of whom saw the role of the teacher as more facilitative than directive, advisory rather than judgmental, and the learning process as inquiry-led instead of content-centred.

- **Technical-behavioural ideology.** Students are positioned as consumers and producers in the capitalist system and as contributors to the globalised market economy, emphasising preparation for work and economic participation.

- **Personal-caring ideology.** Concerned with the growth of the student as a person, emphasising self-actualization, self-respect, personal identity construction, and focusing on helping students to learn to make moral choices and decisions based on an appreciation and understanding of alternative values.

- **Critical-political ideology.** Critical ideology seeks to expose the underlying values of the curriculum, especially the inequalities it produces and maintains, and a critical-political approach to curriculum view schools as agencies of political and cultural renewal rather than conservative reproduction.[120]

Any curriculum will feature aspects of various elements of these ideologies, and the strength of the ideologies will vary over time depending on a complex mix of external factors. For example, strong emphasis has been placed on technical-behaviourist approaches at the current time as economies are said to rely more and more on highly educated, technologically-able labourers and producers. In the immediate aftermath of the second world war, however, there were stronger strains of social-romantic ideology as curriculum theorists and educators sought to implement curricula that would counter the barbarity and totalitarian impulses of the previous decades.

119 Gee, JP (2010) New Digital Media and Learning and Worked Examples as One Way Forward (Cambridge: MIT Press)

120 McKernan, J (2008) Curriculum and Imagination: Process theory, pedagogy and action research (Abingdon: Routledge)

Alongside these formal curriculum concepts, it is also worth pointing out the importance of the 'hidden curriculum.' In contrast to the overt curriculum constituted by what schools intend students to learn and what teachers intend to teach, critical curriculum scholars have insisted that the hidden curriculum has two main characteristics: it is unintended, and it is transmitted through the everyday goings-on of schools. It deals with the tacit ways in which knowledge and behaviour are constructed outside of the normal course materials or scheduled lessons, forming part of the bureaucratic and managerial forces of the school which induce students to comply with the dominant ideas and social practices related to authority, behaviour and morality.[121]

The hidden curriculum operates by transmitting to students a set of strong message systems about normal and acceptable behaviour, attitudes, values and so on. It is a form of covert curriculum ideology. Critics of the curriculum have shown how the hidden curriculum, despite its unintended nature, exerts significant and powerful material effects on students, inculcating in them norms of acceptable conduct in society and functioning to reproduce political, social and class structures.

Thus curriculum—whether overt or hidden—may be seen as consisting of rituals, practices, message systems, processes and codes that carry specific meanings and importance in society, assuming the legitimacy of everyday taken-for-granted assumption, and which structure the way in which students come to apprehend and comprehend the world they encounter.[122]

Although much of the original work that contributed to this understanding has since been advanced and diversified—particularly concerning the correspondence of education to the economy—its important contribution was to establish a critical understanding of the school curriculum as a conduit for a range of forces, factors, assumptions and norms in the wider society. While the 'hidden curriculum' may not have quite the critical force that it possessed in curriculum studies in the 1980s, it remains important to query or challenge contemporary developments in the curriculum in order to reveal their underlying premises, assumptions and roots.

121 McLaren, P (1994) Life in Schools: An introduction to critical pedagogy in the foundations of education, 2nd ed (New York: Longman)

122 For the original thinking on matters of correspondence and reproduction in the curriculum see Apple, M (2004) Ideology and Curriculum, 3rd ed (London: Routledge); Giroux, H (1981) Ideology, Culture, and the Process of Schooling (Philadelphia: Temple University Press)

Reflexivity and the curriculum

Since the 1990s the curriculum field as an array of intellectual tools, methods and theories has diversified considerably. The historical narrative of curriculum development suggests that at the present time we are encountering new ways of conceiving and understanding the role of the curriculum. Similarly, the broad contexts we have established in previous sections demonstrate how curriculum debate and curriculum development needs to be sensitive and responsive to a wide range of challenging trends and changes in the contemporary world. As such, there is a need for a range of alternative curriculum theories which can help us to make sense of the curriculum in relation to society and culture, the economy and politics.

John Quicke provides a conceptual blueprint for curriculum redesign for 'new times.' By 'new times' he is referring to the contemporary pressure on people to 'turn round' upon themselves, critically examine their own lives, and if necessary deliberately reorder or reinvent their identities and structures. The sociological term for this is 'reflexivity.' For many sociologists this kind of reflexivity is a key characteristic of modern advanced societies, where individuals have increasingly to take responsibility for all aspects of their own lives while ideals of social cohesion, welfare, community and so on are melting away (or turning to 'liquid,' to use Bauman's term once more). Within highly technologized societies, as we have also seen, individuals are urged to constantly re-educate themselves to ensure they are equipped and able to adapt to changes in the labour market or the processes and procedures of knowledge production.

The sociological narrative on reflexivity follows these contours. Early in the 20th century, the traditional structures which characterized social life, such as the church, the extended family, and the rural village community, largely broke down. These were replaced by new structures and practices such as the capitalist economy, the suburban nuclear family, mass communication and science. The new structures have themselves now come under pressure from global free markets, individualization, consumer lifestyles, and digital networks. Indeed, in this latter period the individual, as a freely choosing agent, supersedes social structures, so that life is seen not so much as patterned by social institutions, conventions and traditions, but as matter for individual creativity and the unconstrained democratic flourishing of new communities. This is a highly positive perspective espoused by liberal commentators, but the rhetoric of autonomy and democratic community disguises how the old structures of inequality and oppression remain and continue to be influential.

John Quicke suggests that a curriculum for reflexive 'new times' like these would need to take account of both the dangers and opportunities afforded by the changes that have taken place, which he organizes into six key themes:

- **Self-identity.** The need for the individual to find an identity in a complex, increasingly differentiated, pluralistic and rapidly changing world.

- **Collaboration.** A commitment to collaborative, democratic relationships and social arrangements in wider communities as bureaucratic forms collapse and more democratic and collaborative organizational forms emerge, including more open, innovative and diverse models of school and college.

- **Family.** Changes brought about in the 'structures of intimacy' between people in close personal relationships (ie attitudes towards formal marriage, divorce, cohabitation, single-parent families and reproduction outside marriage) bring about a requirement for new reference points for identity and support for individuals to make personal choices.

- **Cultural pluralism.** As the scope for cultural interaction increases in a multiplicity of contexts via new communication systems, there is a proliferation of new cultural forms and expression, including those associated with ethnic diversity, relations between sexes, and consumption, tastes and fashion.

- **Work and economic life.** The new economy requires new workers to be flexible and adaptable, to be creative and responsible for their own work; but the extent to which new technologies and new work organization have generated a highly-skilled, reflexive workforce have been exaggerated, and there is evidence that workers still have little control over production processes or decision-making.

- **Knowledge.** There have been changes in how we understand the nature of knowledge and what it means to know. The most prestigious type of knowledge, science, has become less secure as its 'old truths' have given way to anxieties about their contribution to human well-being (ie science as a contributor to environmental degradation and ecological disaster). All knowledge is now understood as located within particular 'paradigms' with their own rules, criteria and symbolic representations, and are thus constructs involving particular modes of interpretation rather than theory-free descriptions of the world.

For Quicke, these six areas comprise both an analysis of contemporary society and a conceptual blueprint for curriculum development in reflexive 'new times.' Clearly, there is much of substance within these six themes that resonates with arguments we have encountered about 'digital times' and participatory youth media and technology. Quicke imagines that such a curriculum would be integrated, since each theme could only be taught and thought about in ways which link to the other themes, and relatively non-prescriptive with the actual selection of a wide variety of content dependent on what was considered appropriate for the particular students and teachers involved.[123]

Curriculum as process-inquiry

James McKernan, too, offers useful theoretical ideas for the future of curriculum development. A curriculum for McKernan is always first imagined as an ideal. A particularly popular ideal at the beginning of the 21st century was to redesign curricula to include key concepts and electronic student portfolios; another ideal was inquiry-discovery pedagogy. McKernan, following Stenhouse, sees the curriculum as a grand experiment and as a practical matter involving the actions of humans that will make a difference. He therefore follows in the footsteps of the American pragmatist tradition, focusing on curriculum as practical action with impact and consequences that can be re-traced. In other words, any curriculum development needs to answer key questions of who, when, why and how:

> The curriculum is created, tried and judged. As such it is above all an idea worth testing—a hypothesis the rational educator might proffer. ... [A] curriculum is created, shared and transmitted to others embodying values and knowledge and skills and a host of dispositions. ... The curriculum is concerned with what is planned, implemented, taught, learned, evaluated and researched in schools at all levels of education. To experience a curriculum is not to arrive at a particular destination, but to have travelled with a different view. It is in the journey and its experiences that a curriculum is realized, not in the act of alighting from the train.

123 Quicke, J (1999) A Curriculum for Life: Schools for a democratic learning society (Buckingham: Open University Press)

Therefore McKernan is interested in curriculum as process and inquiry, rather than as prescription or in terms of predetermined objectives (he identifies 26 criticisms of an objectives-based approach to curriculum). The process-inquiry curriculum model comprises the following characteristics:

- content selected on basis of procedures and criteria embodied in discipline, not on exit outcomes or statements of what students will come to 'know'
- open-ended inquiry/discovery strategy, instead of sequencing of content into micro-units
- teaching is viewed as reflexive practice, instead of the management of content sequences
- understanding and not mastery is the aim
- creative, unique and 'unanticipated' responses are valued
- divergence and depth of views are encouraged
- different outcomes are valued
- assessment and evaluation by teachers making qualitative judgements instead of by objective testing.[124]

This approach to curriculum as 'process' rather than 'race course' is informed by a shift in curriculum thinking in the 1990s, a 'reconceptualization' in curriculum theory, as it was termed in the USA, characterized by an emphasis on the verb form of curriculum instead of on its etymology as a noun.

This shift in focus to the active process of learning does not deny that the texts, materials, and lessons that comprise a curriculum are important, but shows that they are not the substance or the purpose of curriculum. Curriculum development after such a reconceptualization was not be to understood in terms of the design of innovative courses, new set texts, behavioural objectives and so on, but focused upon the learner seeking understanding and meaning, on the curriculum as the interpretation of 'lived experiences.'[125]

Postmodern curriculum deconstruction

Patrick Slattery draws on this reconceptualization to offer a different perspective on the curriculum informed by postmodernist theory. This is an important contribution which, like the critical approach to the hidden curriculum, seeks to query how different curricula are constructed and interpret the meanings produced by what they include or exclude. Slattery's method for approaching the curriculum is 'deconstruction.'

Deconstruction originates in the work of theorist Jacques Derrida. For Derrida the writing of any text always means that something gets left out, and these exclusions can become repressive. Every structure that organizes human experience, whether literary, psychological, social, economic, political, or cultural, is constituted and maintained by acts of exclusion and by bifurcations of what is 'in' and what is 'out'—by including something at the expense of something else, or something 'other,' something 'different.' Structures cannot reproduce reality; they will always be different from it; indeed, instead of a stable or totalized understanding of a reality which these structures describe, there is only difference and the continual production of different and changing meanings.[126]

Derrida's approach was developed in the post-war years in response to repressive totalitarianism at both ends of the political spectrum (fascism on the right and Stalinism on the left) so deconstruction sought to challenge all ideologies, beliefs or repressive structures that divide the world into diametrical opposites. Deconstruction was concerned not with destruction, relativism and nihilism as Derrida's critics charged, but with recognizing the limitations and contradictions of the ideas and norms that structure everyday action and keeping them open to constant questioning and revision.

Consequently, a deconstructionist approach to the curriculum would seek to challenge the divisive dualisms and bifurcations which pervade society in 'us vs. them' forms. These are represented in schools through such opposing categories of gifted and remedial, athletic and academic, compliant and behaviourally disordered, and other bifurcations based on class, ethnicity, gender, intelligences, learning styles, and so on.

124 McKernan, J (2008) Curriculum and Imagination: Process theory, pedagogy and action research (Abingdon: Routledge)

125 Pinar, WM (2004) What is Curriculum Theory? (Mahwah, NJ: Erlbaum)

126 A discussion of deconstruction and postmodernism in relation to curriculum theory is supplied in Pinar, WF, Reynolds, WM, Slattery, P & Taubman, PM (1994) Understanding Curriculum: An introduction to the study of historical and contemporary curriculum discourses (New York: Peter Lang), especially Chapter 9: Understanding curriculum as poststructuralist, deconstructed, postmodern text: 450-514

Rather than destruction, then, Derrida sought to advocate respect for others whom we do not understand; embracing uncertainty and the unknown instead of establishing exclusive divisions, separations and oppositions.

But what does deconstructionist postmodernism offer as an approach to practical curriculum development? It suggests:

- linking the autobiographical to broader concepts, engaging the participant in shaping outcomes and processes; rejecting hierarchical, authoritarian, patriarchal and hegemonic ideologies
- evoking ideas and representations, multiple views, a multiplicity of interpretations and encouraging exploration; rejecting behavioural objectives, supposedly 'value-neutral' or 'theory-free' empirical-analytical methods, rote memorization and competitive assessment, inert ideas and dead knowledge
- approaching curriculum as a verb, a process of inquiry; rejecting curriculum as a noun, a fixed compilation of sources, set texts, lesson plans and schemes of work
- embracing ambiguity and uncertainty as generative for democratic participation; rejecting the predictability of modern, corporate rational systems
- encouraging eclecticism, many styles, multiplicity, dialogue, interaction and interdisciplinarity; rejecting static bifurcation, dualisms and disciplinary insularity.[127]

This useful list suggests that postmodernist theory might be applied in curriculum development. Indeed, the curriculum theorist William Doll has convened many aspects of postmodernist thought into a postmodern vision of curriculum that rejects the 'machine and productivity' vocabulary of curriculum discourse and focuses on dialogue, inquiry, and personal transformation; such a curriculum would be organized according to the new '4 Rs':

- **Richness.** Depth and layers of meaning, indeterminacy and anomaly, multiple possibilities, dialogue, hypothesis generation, pluralistic interpretations
- **Recursion.** Reflect on one's work, discuss, combine, explore meanings
- **Relations.** Recognize cultural relationships influencing our views, both local in origin and global in interconnections
- **Rigour.** Mixing indeterminacy with interpretation, critically evaluating all (hidden) assumptions, valuations and judgments.[128]

From these readings, a postmodernist understanding of curriculum would be based on recognizing the verbal character of knowledge and the problem of representation—that language cannot accurately reproduce some outside reality—as well as the contested nature of contemporary knowledge. A postmodernist curriculum would be characterized by the way it responded to the following features of contemporary culture:

- **Difference.** Deconstruction, deferral of meaning, interpretations-of-interpretations
- **Eclecticism.** Heterogeneity, multiplicity, interdisciplinarity, confluence, pastiche
- **Entertaining.** Engaging, evocative, playful, absurd
- **Expressive.** Emotional, affective, imaginative
- **Fluidity.** Ephemerality, ambiguity, complexity
- **Fragmentation.** Atomization, conflict, contest
- **Commodification.** Commercialization, consumption, consumerism
- **Uncertainty.** Disequilibrium, instability, discomfort
- **Non-representational.** Discursive, imagistic, self-referential
- **Mediation.** Simulation, hyper-reality, artificiality, hallucinatory, spectacle, re-mediation.

For educators concerned with postmodernism, the challenge is what sort of curriculum and what sort of knowledge is appropriate for young people to make sense of the postmodern condition, not, as its critics suggest, to celebrate the 'nihilism' of abandoning any attempt to know. Importantly, a postmodernist approach would recognize that any prescriptive kind of curriculum is itself a form of representation, a body of knowledge which has been reconstructed or reconstituted and is therefore assumed to be fixed and eternal.

127 Slattery, P (2006) Curriculum Development in the Postmodern Era, 2nd ed (London: Routledge)

128 Doll, W (1993) A Postmodern Perspective on Curriculum (New York: Teachers College Press)

Postmodernist thinking disputes this static understanding of knowledge, and supposes instead that knowledge is dynamic, intertextual, always a matter of interpretation, continually being remade; and that all of this takes place within the context of the exercise of power. It might be suggested that this shift to postmodernist thinking about knowledge could help schoolteachers overcome the false certainty and stability that underpins objectives- or outcomes-based curriculum approaches.

Curriculum cosmopolitanism

This small selection of theoretical perspectives on curriculum development represents a sanative to the overly instrumentalized approach to the curriculum assumed by policies yoking it to economic outcomes and objectives. These theories provide curriculum developers with alternative ways of understanding and approaching the school curriculum which see it not merely as a correspondent to the economy but as a conduit for a multiplicity of practices, ideas and sources of knowledge.

The principal contribution of such work is to show how the curriculum can be decentralized, loosened and devolved from central bureaucracies and managed, orchestrated and developed at a more local level. Andy Hargreaves suggests this may mark the 'coming of post-standardization,' a process whereby many developed countries are abandoning policies that force up standards and results at any cost. In their place, new decentralized initiatives as well as recycled innovations from former eras have begun to emerge to manifest as a culture of curriculum experimentation within which traces and legacies from the past are wedded to new imperatives, theories and practices.[129]

But the turn to decentralization, as we saw earlier, is by no means straightforward or politically neutral; it's ambiguous and contradictory, with certain decentralizations favouring the free market logics of flexible businesses and other forms of decentralization intended to bring about emancipation and greater democratic freedoms. The challenge of course is that decentralization is a politically contested concept, with no singular meaning, no unifying or central conceptual pole.

Thomas Popkewitz sees this as an 'age of school reform' based on the principles of 'cosmopolitanism.' Concerns with cosmopolitanism are increasingly entering curriculum development debates, but the intents of a cosmopolitan curriculum, like decentralization, are ambiguous. Cosmopolitanism celebrates notions such as empowerment, voice, and emancipation from traditional habits and attitudes; it is embodied in talk about autonomy, self-responsibility, respect for diversity and difference, and participation and collaboration in communities; and it focuses on the creation of a 'good' or 'ethical' future. Cosmopolitanism is interdependent with decenteredness in many dimensions. In this sense, for Popkewitz, the kinds of curriculum developments outlined above could be categorized under the rubric of a 'new cosmopolitanism' for the 21st century.[130]

According to the curriculum scholar John Meyer, curriculum developments worldwide in recent years have followed similar general ideas about education as preparing both the individual and the nation state to become part of a world society. The modern world society builds on the idea of an 'expansive conception of the individual human person, being a member of a human society as a whole rather than a member of a nation-state.'[131]

What this means is that the curriculum is involved in the making of certain kinds of people, on people who exhibit a particularly cosmopolitan orientation towards the world and towards the making of the future. As such, young people are to be seen as what Popkewitz calls 'unfinished cosmopolitans,' engaged in a never-ending process of making choices, innovations and collaboration in diverse communities, developing cosmopolitan identities which are tolerant of differences, genuinely curious and willing to learn from other cultures, and responsible towards excluded groups.

129 Hargreaves, A (2008) The coming of post-standardization: Three weddings and a funeral, in Sugrue, C (ed) The Future of Educational Change: International perspectives (London: Routledge)

130 Popkewitz, T (2008) Cosmopolitanism and the Age of School Reform: Science, education, and making society by making the child (London: Routledge)

131 Cited in Karseth, B & Sivesind, K (2010) Conceptualising Curriculum Knowledge Within and Beyond the National Context. European Journal of Education 45(1): 103-120

LEGOsmopolitanism

One key manifestation of these hopes for the cosmopolitan curriculum of lifelong learning is educational new media. Processes of online learning seem to unlock the potential for the new cosmopolitan citizen of the world. Such ideals rest on a utopian view of new media as transcending distance and time, compressing the diversity of the globe into a single worldwide networked community. Formally, many curriculum developments are increasingly legitimated not by reference to national structures so much as through inclusion in international comparative studies like the OECD Programme for International Student Assessment (PISA).

Popkewitz warns that this new era of decentered cosmopolitan education merely brings to fruition the hope of free-market neoliberalism in which cosmopolitan ideals of a more equitable society and enlightened individuals are to be produced by offering more choice to consumers (students and their families). For the social theorist Ulrich Beck, cosmopolitanism refers to 'the globalization of politics, economic relations, law, culture, and communication and interaction networks.' The 'cultural mixture' of cosmopolitanism is now represented by the 'fragmentary composition' of human identity:

> One constructs a model of one's identity by dipping freely into the LEGO set of globally available identities and building a progressively inclusive self-image. The result is the proud affirmation of a patchwork, quasi-cosmopolitan, but simultaneously provincial, identity whose central characteristic is its rejection of traditional relations of responsibility.[132]

For Beck, the global ideal of world citizenship is compromised by what we might neologize as 'LEGOsmopolitanism' where global cultures are understood as LEGO block construction toy sets.

The metaphor of LEGO toy sets is significant. Jane Jenson and Denis Saint-Martin have conducted an analysis of the LEGO toy corporation and identified the characteristics of a 'LEGO™ paradigm' for education:

> First, it clearly focuses on learning over the life course. Play is educational, and such play is invaluable for the future; it fosters individuals' capacity for continuous learning, flexibility and adaptability as an adult. This metaphor of constant learning, knowledge acquisition, involvement and engagement as well as the notion of open-ended results and variety is particularly appealing in the 'knowledge-based' economy. Second, this philosophy is future-oriented. Children now are already creating the future. And finally, it suggests how activities in the present are ultimately beneficial not only for individuals themselves, but for the community as a whole.

The LEGO™ paradigm represents the ambiguous cosmopolitan ideals of lifelong learning and the acquisition of creativity and innovation (as 'human capital' required in the global knowledge economy), a future-orientation to educational interventions (to achieve 'socially optimal investments'), and a commitment to community and collective well-being (in order to maintain 'working capacity' and social cohesion).[133]

Steven Camicia and Barry Franklin, investigating cosmopolitanism in curriculum reform, conclude that there are two competing discourses of cosmopolitanism. One is a discourse of democratic cosmopolitanism which defines global citizens as a community that behaves optimally when government regulations support cultural representation, human rights and social justice; the second, more dominant discourse is neoliberal cosmopolitanism which defines global citizens as a community of self-starting entrepreneurs who function best when government regulations support market rationality. This is cosmopolitanism as market decentralization and the optimizing of individual free choice.[134]

132 Beck, U (2006) Cosmopolitan Vision (Cambridge: Polity)

133 Jenson, J & Saint-Martin, D (2006) Building blocks for a new social architecture: the LEGO™ paradigm of an active society. Policy & Politics 34(3): 429–51

134 Camicia, SP & Franklin, BM (2010) Curriculum reform in a globalized world: the discourses of cosmopolitanism and community, London Review of Education, 8(2): 93-104

Curriculum fragmentation

Research on the history and theory of curriculum development has led to some new but fragmented ways of thinking about the role of curriculum. Although the curriculum is part of a complicated conversation involving technology and the economy, we have seen that a vast array of other concerns must be taken into account in curriculum development. While it might be possible to push these aside in current efforts to create curricula that are engaging and relevant to young people whose out-of-school lives are increasingly shaped by participatory media, our argument is that this would create an artificially compartmentalized curriculum, demarcated not so much by a traditional approach but by technological concerns. To appropriate the vocabulary of Zygmunt Bauman, we see the curriculum as taking increasingly fluid or 'liquid' form, being recast or remoulded according to diverse contexts, and dependent upon the exercise of social forces.

To this end, we have seen how curriculum development theorists have attempted to redefine the curriculum according to centrifugal 'post-standardized' ideals of inquiry, democracy and deconstruction. Finally, we have shown how two competing ideals of 'cosmopolitanism' have entered into curriculum developments debates in very recent years. The first cosmopolitanism is a democratic cosmopolitanism concerned with human rights and social justice, while the other is a more neoliberal cosmopolitanism which defines global citizens as self-initiating and enterprising entrepreneurs constructing lifelong learning identities for themselves from a global LEGO set. These alternative discourses suggest two very different approaches to a decentralized 'cosmopolitan curriculum.' As a consequence, curriculum is a site of fragmentation and contestation. This is especially clear when we examine how 'knowledge' is to be defined in any curriculum.

Knowledge

Youth media and curriculum development debates convene around notions of decentering and decentralization, contributing to a new understanding of young people as cosmopolitan citizens of a globalized world. Such cosmopolitan and decentered ideals, however, are complicated and perhaps compromised by the ease with which the emancipatory discourse of decenteredness has been allied to a free market discourse of individual free choice and deregulation. This is a problem which exerts effects on the ways in which knowledge is conceptualized.

The current challenge of knowledge in schools and curriculum development is to do with epistemic boundary penetration. Contemporary approaches to epistemology increasingly show how the insulating boundaries between knowledge domains have been punctured. This is represented by professional interdisciplinarity with its emphasis on subject blends, and by knowledge embodied in different cultural practices, but also by the penetration of the formal curriculum by mediated knowledge from the youth media ecosystem. As such youth media epistemology is continuous with wider epistemological debates. Our survey of the recent research again shows how a set of concepts and analyses originating in contemporary economics has become central to debates about school knowledge.

In this section we examine how curriculum development that pays attention to young people's interactions with technology and media affects the ways in which educators must approach issues of epistemology.

The perpetual beta

How 'knowledge' is conceptualized and understood has been challenged by the shift to centrifugal forces in the rise of social networks, blogging, wikis, web 2.0 and other networked technologies of self-expression and 'mass self-communication.' Increasingly, audiences now have the capacity to become authors and editors and publishers of internet content too, so that the notions of authorship, editorial control, and publication have been decentred. These centrifugal trends are characterized by the 'perpetual beta' status of social media and by the alleged 'plasticity of information,' with any definitive edition of any text permanently deferred. In the era of the perpetual beta, the seemingly passive audiences of the 20th century broadcast age are transforming themselves into producers of content online.

These changes have been informed by a much longer debate predating the internet. Internet historian Johnny Ryan provides a compelling narrative which demonstrates how the centrifugality of the social web was anticipated and modelled much earlier in economics theory. In 1945 the economist Friedrich Hayek was trying to work out how to perform economic planning when a society's knowledge was so diverse that it couldn't be adequately marshalled by conventional means. For Hayek, the problem could not be solved by 'communicating this knowledge to a central board which, after integrating all knowledge, issues it orders. It could only be solved by some form of decentralization.' The preferred form of decentralization for Hayek was deregulated free market capitalism, where the market was understood as a latticework of exchanges where terms of exchange, or prices, were determined by the voluntary interactions and freely made choices of suppliers and demanders.

Half a century later the American entrepreneur Jimmy Wales was inspired by Hayek to develop an internet-based, free encyclopaedia. His Nupedia was launched in 2000, followed by its successor Wikipedia in January 2001. Wikipedia not only provides 'free access to the sum of all human knowledge' but promotes mass collaboration between users, and peer power rather than sources of authoritative expertise. According to Ryan, this was 'a price mechanism along the lines Hayek had discussed that worked not only for market information but for all kinds of information.' Decentralization discourse and networks, then, operate as a 'free market' for the voluntary exchange of knowledge. In this context, knowledge assumes 'perpetual beta' status as its completion is constantly deferred and distributed.[135]

135 Ryan, J (2010a) The Internet, the Perpetual Beta, and the State: The long view of the new medium. Studies in Conflict & Terrorism 33(8): 673 – 681 ; Ryan, J (2010b) A History of the Internet and the Digital Future (London: Reaktion)

Information and knowledge

How does it affect curriculum development when information and knowledge is available online as a 'perpetual beta' in a market of exchange? At the current time, in the context of social and technological trends dubbed the 'information age,' there is fierce debate about what constitutes valuable knowledge to be learned via the school curriculum. This is partly an issue of school subjects and about how disciplinary information and sources are to be transmitted to students as knowledge to be learned.

It is also part of a broader challenge concerned with shifts in contemporary culture. In a cultural context characterized by increased fluidity and liquidity, by fragmentation and decentralization, by hybridity and diversity, knowledge too is understood in more fluid, fragmented, decentred and hybrid terms. Rather than the Enlightenment ideal of universal truths heralded by legitimate authorities, in today's media-dense culture knowledge is increasingly uncertain and unstable, with its authority resting in the quality of its presentation and not its moral qualities or the qualifications of its author. The previously elevated knowledge of the priesthood, for example, has been discredited by heightened secularism and claims of malpractice, while the truth claims of scientific knowledge have been brought into question by revelations of corporate interference, media misreporting, and political manipulation.[136]

The teaching profession is at the sharp end of debates about knowledge. Teachers are frequently lambasted for their 'wild and wacky' methods and their political allegiances to progressivist educational theories, not least from politicians who disagree with their intellectual sympathies and are hostile towards many educational institutions.[137] Therefore, what may seem like arcane postmodernist debates about truth and epistemology are clearly central to contemporary curriculum development, not least when curriculum matters take into account the fluid, plural and decentred character of participatory digital media and its potential for more creative learner-led approaches to knowledge production.

Arguments along these lines have been developed throughout the 1970s, 80s and 90s as education systems have come under constant pressure to reform to meet the new demands

136 For an accessible introduction to significant knowledge debates for education, see Curtis, W & Pettigrew, A (2009) Learning in Contemporary Culture (Exeter: Learning Matters)

137 Paton, G (2010) Michael Gove's attack on 'wild and wacky' teaching, The Telegraph, 20 Sept, URL: **www.telegraph.co.uk/education/educationnews/8013973/Michael-Goves-attack-on-wild-and-wacky-teaching.html**

of a changing world characterized increasingly by changing forms of industrialization, new forms of corporate power, migration, the growth of popular and consumer cultures, and new systems of mass communication. There has been a shift in the very authority of knowledge. Whereas high-status knowledge used to be the elite preserve of the university and the academy (sometimes known as 'Mode 1 knowledge'), nowadays the high-status knowledge ('Mode 2') is said to be 'applied' to specific problems and to the innovations process. Consequently, knowledge-producing sectors like education and research are encouraged to participate in knowledge-based interventions such as the:

- creation of research 'clusters' and 'centres of excellence' to assist with the generation of new knowledge and critical mass
- formation of transdisciplinary and transnational networks to assist with access to the best knowledge
- promotion of collaborative relationships between educational institutions and industry to help spread risk and resources and to assist with the commercialization of research
- identification of national research priorities
- innovation and entrepreneurial activities at all levels of knowledge production
- acquisition of generic 'employer-friendly' skills, including communication skills, learning ability, problem-solving skills, the ability to work in teams, and self-management
- development of ICT skills and lifelong learning for all.[138]

These changes have all had major implications for the kinds of knowledge to be taught at school, and for the kind of curriculum which could impart that knowledge to students. At the same time, these changes have brought with them a range of consequences in terms of issues of class, gender, ethnicity, location, and so on: if what counts as valuable knowledge to be included in the curriculum is to be changed, then who are to be its beneficiaries?

Consequently, there have emerged into curriculum debates a range of different knowledges. There is, for example, the disciplinary and highly insulated knowledge contained in the subject-based canon; the 'soft skills' and procedural knowledge required in the new economy; the popular unofficial knowledge associated with media and culture; and the indigenous knowledge of local cultures, neighbourhoods, communities and homes.[139]

So what are the main characteristics of knowledge and information in these digital times and how do they pertain to attempts to change the curriculum? In this section we examine some problems with knowledge in curriculum scholarship, and explore some new ways of thinking about knowledge in a decentralized 'informational' context where creativity and knowledge production have taken on enhanced importance over 'canonical' knowledge.

Problems of knowledge in the curriculum

Debates about the knowledge contained in the curriculum have been ongoing for several decades. Rob Moore claims that curriculum debates on the question of 'what should we teach?' raise a number of 'problems' to do with knowledge. This is because whatever is intended by education occurs by virtue of the transmission of knowledge intended to transform the learner. The problems of knowledge are therefore much broader than an issue of teaching method; they impact on the organization of society:

> A curriculum is an organization of knowledge involving the selection of content and also the structuring of the relationships within the content. The distinction between 'traditional' and 'progressive' forms of education, for instance, depends not just upon what is taught, but upon how the different elements are interrelated. Typically, a traditional curriculum is organized by well-defined subject categories with strong boundaries, whereas a progressive curriculum promotes integration and has weak boundaries. ... The traditional form could be seen as instilling respect for the purity of categories and hierarchy, keeping things apart and in their proper place, and the progressive form as celebrating the mixing of categories and seeking innovative reconfigurations. In this way different forms of curriculum might be seen as representing different principles of social order.[140]

These different ways of organizing the curriculum, represented by the dichotomy of traditional-progressive, assume very different conceptions of what knowledge is to be taught and have different implications for the kinds of people, citizens and workers we want and expect children to become.

138 Kenway, J, Bullen, E, Fahey, J & Robb, S (2006) Haunting the Knowledge Economy (Abingdon: Routledge)
139 Morgan, J & Williamson, B (2008) Enquiring Minds: Schools, knowledge and educational change (Bristol: Futurelab)
140 Moore, R (2004) Education and Society: Issues and explanations in the sociology of education (Cambridge: Polity)

Whereas a traditional epistemologically organized curriculum of strongly insulated subjects planned as a temporal sequence is understood as a way of regimenting and sorting young people, the more progressivist approach is understood as more diverse, open to penetration from beyond the school or the epistemological boundaries of the curriculum.

In most schools, in reality, these problems of knowledge are played out in everyday practice as teachers work with curricular and epistemological resources which young people act on and interpret according to their pre-existing knowledge or their distinct contexts and backgrounds. The task for educators is to work upon a central core of knowledge, whilst accounting for the contexts in which it is to be encountered and the diversity of existing knowledge at the periphery. This means that school knowledge is highly political, as was shown by curriculum debates that proliferated in the 1970s.

Particularly influential in school knowledge and curriculum debate in the 1970s was the work of the sociologist Michael Young, who argued there was a strong connection between what knowledge is valued and taught in schools and the distribution of power in capitalist societies. Primarily, Young argued, what counts as knowledge is defined by particular powerful ruling groups, and is distributed unevenly, resulting especially in socially stratified, unfair and unequal access to knowledge by children and young people from poorer backgrounds. What this meant was that knowledge was to be regarded as 'socially constructed' and always open to contestation; it did not always or unproblematically reflect empirical truth but represented different and often conflicting interests in society, particularly those of the middle class at the expense of less affluent students.[141]

Reflecting on this insight over 25 years later, Young remarked:

> Developing the curriculum of the future depends on building on this insight. It involves being willing consistently to question the extent to which any curriculum is based more on the preservation of 'interests' than on promoting learning. It also involves asking whether a particular form of curriculum organization, such as that based on school subjects, provides reliable frameworks for young people to make sense of the world they face or the extent to which it is primarily a leftover of past traditions which have come to be seen as the only way of organizing knowledge.[142]

141 Young, MFD (ed) (1971) Knowledge and Control (London: Macmillan)
142 Young, M (1998) The Curriculum of the Future: From the 'new sociology of education' to a critical theory of learning (London: Falmer)

This remains an important starting point for analyzing the selection of knowledge within any curriculum, showing how the 'knowledge of the powerful'—that authorized by those in power—comes to dominate in the organization and content of the curriculum. In the current context of knowledge economy and neoliberal discourses and imaginaries, the knowledge of the powerful often means the knowledge of economic elites or 'curriculum entrepreneurs', which replace the specialized language of education with the language and concepts of economics, as in markets, choice, outcomes, targets, efficiency and so on. At the same time, we need to remember that the dominant means of arranging school knowledge remains through subjects and the school subject cultures that manage them.

School subject cultures

Starting from the assumption that school knowledge is the product of intentional human action, Ivor Goodson pioneered the historical study of curriculum subjects. This is not simply a historical project, but one concerned to bring to the fore the question of how and why school subjects do (or do not) change. Importantly, Goodson's studies reveal that school subject cultures are not monolithic entities, but contain dominant and subordinate sub-groups who struggle over the meaning and definition of subjects.

One of the most important insights of this work is its insistence on understanding that school subjects are a complex mixture of ideologies, some of which are academic (geared to the preservation and transmission of disciplined knowledge), others of which are utilitarian (focused on the vocational value of the subject), and yet more of which are pedagogic (linked to ideas about child development). Goodson argued that, over time, school subjects tend to focus more on their academic aspects because this leads to higher status within the school organization. Schools and their subjects therefore operate as 'regulatory technologies.'[143]

Goodson's work is part of a larger tradition in educational research that explores how school knowledge gets defined and constructed, for example by being reshaped and reworked within the organizational cultures of schools or linked to the gendered nature of knowledge.[144]

143 Goodson, I (2003) Professional Knowledge, Professional Lives: Studies in education and change (Maidenhead: Open University Press); Goodson, I (2005) The exclusive pursuit of social inclusion. Forum 47(2): 145-150
144 Paechter, C (2000) Changing School Subjects: Power, gender and curriculum (Maidenhead: Open University Press)

This work suggests the need to pay attention to curricular ideologies discussed by Michael Apple:

> The basic act involves making the curriculum forms found in schools problematic so that their latent ideological content can be uncovered. Questions about the selective tradition such as the following need to be taken quite seriously. Whose knowledge is it? Who selected it? Why is it organized and taught this way?[145]

Ideology is an unpopular term in these postmodern times when 'texts' are seen as capable of multiple readings and active interpretation. However, it is important for teachers to think carefully about the ways in which analyses of educational change impact on their work, and how ideas about technology and media are shaped by powerful forces.

In this context, for example, Goodson and Mangan have argued that the concept of 'computer literacy' popularized in north American schools in the 1990s was 'so poorly defined and delineated, and so unclear as to purpose and procedure, that it may best be investigated as a form of ideology.' They argue that educational discourses tend to emphasize either developmental (pedagogic) or vocational purposes, and that in the case of computer literacy, it is the vocational discourse that dominates. Thus schools and teachers are urged to change on the basis that the future will involve an economy in which jobs based on technology will predominate. Goodson and Mangan found that some teachers felt obliged to accept the computer literacy discourse, whilst some resisted it on educational grounds. This suggests that some educators and policy-makers are uncritically accepting the ideology of high-tech economic development. They also found that the ways in which technologies and media are handled in different subject classrooms differs considerably, sometimes causing a 'culture clash' between the computer and the subject knowledge domain.[146]

This analysis highlights that there is no simple trajectory for technology and media in schools and appears to indicate that it is important to pay attention to the distinct subject ideologies that exist. This may be a counter to the tone of many accounts that stress the inevitability of change and are impatient with the apparent inertia of school subjects. It reminds us that school knowledge is always being contested and shaped by various (sometimes powerful) interest groups.

145 Apple, M (2004) Ideology and Curriculum, 3rd ed (London: Routledge)

146 Goodson, I & Mangan, J (1996) Computer literacy as ideology. British Journal of Sociology of Education 17(1): 65-80

Powerful knowledge & knowledge of the powerful

The idea of 'knowledge of the powerful' refers to the knowledge authorized by those in power and leads to questions about who possesses power and about its legitimation. In contrast, the concept of 'powerful knowledge' refers to the knowledge itself. It refers to its structure, what it can do and how it is organized for both the production of new knowledge and the acquisition of existing knowledge which is new to the student. A working definition of powerful knowledge focuses on its purposes, production and access:

- it provides reliable and in a broad sense provides 'testable' explanations or ways of thinking
- it is the basis for suggesting realistic alternatives
- it enables those who acquire it to see beyond their everyday experience
- it is conceptual as well as based on evidence and experience
- it is always open to challenge
- it is acquired in specialist educational institutions, staffed by specialists
- it is organised into domains with boundaries that are not arbitrary and these domains are associated with specialist communities such as subject and professional associations
- it is often but not always discipline-based.[147]

This is an important distinction. The argument is not that the knowledge base for a school curriculum should be a fixed and traditional disciplinary selection. Rather, it is that education has its own specialized concepts and purposes structured in part independently of how we acquire them, but that these are becoming increasingly de-differentiated from the concepts and language of other institutions, knowledges and sites and types of learning.

Owing to the preponderance of economic ideology in this de-differentiated context, there has been an 'economization' of educational thinking, and this is becoming the tendency especially in the post-standardized and decentralized educational approaches often advocated in alternative curricula programmes and provisions. As a consequence, the importance of differentiation and boundaries needs reasserting if economization of education is to be resisted. This does not imply returning to the elitist organization of the

147 Young, M (2010) Educational policies for a knowledge society: reflections from a sociology of knowledge perspective. GOETE Keynote lecture, University of Tuibingen, January. URL: **http://goete.eu/news/events/101-reflection-keynote-lecture-at-the-goete-kick-off-meeting-by-michael-young**

modern education system as it was established over a century ago, but a rigorous re-engagement with the conceptual basis of subjects and an understanding of their evolution and disciplinary structures.[148]

How do these concerns with the knowledge of the powerful and powerful knowledge correspond with the informational 'knowledge economy' context we have been examining as the basis for much recent curriculum development?

Informationalism and knowledge

At the current juncture, it is the so-called 'informational age' that, more than any other factor, has assumed central importance in debates about power, knowledge and the curriculum. Manuel Castells has dubbed this the age of 'informationalism,' which has superceded (though not entirely replaced) 20th century industrialism. Whereas industrialism was oriented towards maximizing output, informationalism is oriented towards technological development, the accumulation of knowledge, and higher levels of complexity in information processing; the source of productivity lies in the technology of knowledge generation and in the action of knowledge working upon knowledge itself as the main source of productivity. The informational mode of capitalism which Castells saw emerging in the 1990s, then, was constituted by the application of technology to improve information processing and knowledge generation.[149]

Clearly, if the capacity of capitalist economies depends on labour that can adequately generate knowledge through the act of information processing using information and communication technologies, then it must fall to education to help contribute to this upgrading of the occupational structure. Castells himself was hesitant on this projection, suggesting instead that the growth in high-skills informational occupations and self-programmable labour might lead to greater polarization and concentration of jobs at both ends of the occupational ladder rather than a more equitable distribution of roles.

More alarmingly, Christopher Newfield writes of the emergence of 'cognitive labour'—that is, workers with university qualifications—who, despite their high level of education, are unable to attain decent jobs. Newfield dubs them the 'cognotariat.' The 'cognotariat' is the new 21st century proletariat. Against the rhetoric of cognitive labour as high wealth-producing and wealth-earning 'knowledge capitalists,' Newfield claims that only a small minority will achieve control or creative freedom, and they will achieve this largely because of their direct institutional connections to the owners and executives who run the knowledge economy. Knowledge-based labour will in fact remain divided according to traditional social stratifications and divides. Newfield argues that there is little sign that the current economy is redistributing economic authority in a more egalitarian way, nor that knowledge workers are showing signs of political mobilization against this traditional stratification.[150]

Nonetheless, arguments about changes in the occupational structure have been employed polemically and rhetorically to demand a shift in educational emphasis which corresponds with the restructuring of capitalism. As Alison Wolf has put it, British prime ministers from Callaghan in the 1970s to Blair in the 1990s and 2000s have made education the subject of their most high-profile speeches and educational spending has been enormous, though the dividends have been ambiguous:

> Have we become a nation of scholars? Hardly. Amid all this frenetic spending and organizing and reorganizing and spending, the idea of old-fashioned scholarship figures almost nowhere. Education is big because it is seen as the engine of economic growth, a sure-fire route to future prosperity and victory in a global competition. ... Politicians' faith in education is fuelled by a set of clichés about the nature of the 21st century world: globalized, competitive, experiencing ever faster rates of technical change.[151]

In other words, beliefs about the contribution of education to economic growth dominate educational policy, and by dint of that fact strongly influence the direction of curriculum policy and prescriptions for the knowledge that a curriculum contains. The notion of 'scholarship' as a route to knowledge building have been discarded in the scramble to demonstrate the economic value of knowledge produced through accelerated information processing. Education policies, like economic policies, have been dominated by ideas about the 'knowledge economy' since the late 1990s, and therefore issues related to knowledge and digital technologies in the arrangement of the curriculum are central to today's education debates.

148 Young, M (2010) Alternative educational futures for a knowledge society. European Educational Research Journal 9(1): 1-12

149 Castells, M (1996) The Rise of the Network Society (Oxford: Blackwell)

150 Newfield, C (2010) The structure and silence of the cognotariat. Globalization, Societies and Education 8(2): 175-189

151 Wolf, A (2002) Does Education Matter? Myths about education and economic growth (London: Penguin)

These changes in how knowledge is understood have implications for schooling. This is schooling for disorganized capitalism. Knowledge production in disorganized capitalist schooling is characterized by:

- the relativity of knowledge, so that teachers are increasingly positioned as interpreters rather than legislators
- an undermining of the canon of high culture and its privileged position and a positive evaluation of learning from popular and mass culture
- the shift from the discursive (the word) to the figurative (the image), and a preference for immersion rather than detached appreciation
- the assertion that there is no single ordered view of the world to be imparted but multiple realities to be constructed through an already interpreted experience.[152]

In addition there are important questions raised about the spatial and temporal dimensions of learning. Increasingly it is argued that learning could occur anytime, anyplace, any-pace and that the boundaries between schools and home and leisure are no longer fixed.

During informationalism, then, there have been changes in how we understand the nature of knowledge and what it means to know. The most prestigious type of knowledge, science, has become less secure as its 'old truths' have given way to anxieties about their contribution to human well-being (ie science as a contributor to environmental degradation and ecological disaster). In its place, there is the new logic of dynamism, with knowledge seen as constantly in need of updating and upgrading.

The production of new knowledge, created through innovative and entrepreneurial methods, original and creative combinations, often by using the most state-of-the-art technology, has become the central dynamic of networked enterprise and thus of states within a global network society. As such, there is a shift from viewing school knowledge as a legitimated and authoritative body of content for transmission to a more fluid, creative and constructivist understanding of knowledge which supposes that students themselves can be responsible for creating or making knowledge within communication networks. This involves new arrangements and selections of knowledge, the basis of which is 'creativity.'

Creativity

Castells suggests that networked technologies have brought about a shift from theories of mass communication where messages are addressed and broadcast to a mass audience to an 'active audience carving out its meanings by contrasting its experience with the one-directional flows of information it receives.' This brings about the rise of 'the interactive production of meaning' and 'the creative audience, the source of the remix culture that characterizes the world of self-communication.'[153]

As such, a concern for knowledge is being superceded by concerns for creativity. The basic argument is that as possessing disciplinary knowledge (here understood as bodies of content reified and secured by subjects) diminishes in importance, it becomes more important to be able to seek out relevant information and make sense of it through creative application in practice. The task, in other words, is to develop a curriculum that positions students as 'knowledge creators.'

This concern with a curriculum of knowledge creation clearly has links to an instrumentalist view of education which locates young people as future contributors to a knowledge-based economy where they will be required to create value from marketable ideas. However, the notion that all knowledge is constructed, that a curriculum should be designed to reflect the understanding of knowledge as fabricated, and that students may themselves participate in making knowledge, is also important to the more critical process-inquiry and postmodernist theories of curriculum we have encountered.

Indeed, creativity itself is now understood by educational researchers as a multi-faceted term with diverse meanings and implications. A critical review by Anna Craft and Bob Jeffrey identifies several significant dimensions of creativity reflecting a large body of published peer-reviewed research:

- **Creativity as an economic imperative.** Where a curriculum is intended to produce creative capital; enterprising 'creative thinkers' whose ideas can be turned into valuable products and services. This is creativity as a feature of business rhetoric and a major feature of the championing of the creative industries of ICT, music, and film.

152 Lash, S & Urry, J (1987) The End of Organized Capitalism (Cambridge: Polity))

153 Castells, M (2009) Communication Power (Oxford: Blackwell)

- **Creativity as a social good.** Where creativity is linked to promoting positive mental and physical health, emotional well-being and social inclusion, supporting cohesion amongst families, and encouraging the regeneration of a wider community.

- **Creativity as cultural cohesion.** Where creative activities are elided with 'cultural activities,' as in participating in out-of-school media initiatives, theatrical programmes, attending art galleries.

- **Creativity as ubiquitous and pervasive.** Where creativity is defined in terms of its 'everyday' and 'soft' qualities and positioned as 'democratic,' not just the gift of a creative elite or a privileged few ('little c' creativity as opposed to 'big C' or 'high' creativity).

- **Creativity as creative curriculum and pedagogies.** Where creativity is to be nurtured in children through pulling creative practitioners into schools, whose influence will stimulate the wider adoption of creative practices.[154]

Much recent advocacy of creativity has tended to emphasize utilitarian and instrumental objectives related to the economy and the future of the workforce.[155] Academic research on creativity has tended to be critical of such overly utilitarian approaches which focus on the curriculum as a preparation for participation in a 'creative economy.' The kind of creative and cultural work that is championed tends to follow the neoliberal model identified earlier, where it is governed by the values of commerce, entrepreneurialism and individualization, and practised through a hyperactive culture of 'furious networking' and perpetual low-paid job-hopping from contract to contract.[156]

In the context of youth media, Carey Jewitt suggests implications of creativity for conceptualizing knowledge and the curriculum in terms of:

- **New shapes of knowledge.** How knowledge is represented, in which mode, and through which media, is crucial to knowledge construction—it shapes what is to be learnt and how it is to be learnt.

- **New conditions and functions for authorship.** Learners are positioned by media and technologies as creative producers, in a digital environment where mixing and mashing blur distinctions between production and consumption—bringing about a new educational culture of appropriation and creative consumption, and new opportunities for learners to broadcast and disseminate their own productions.[157]

These arguments indicate that the interest in creativity within education is rooted in questions about the authorship, regulation and governance of school knowledge itself. If creativity is to be understood as a multifaceted term with implications for culture, public life and democracy, as well as for its potential economic benefits (via the cultural and creative industries but also more widely in the daily work required in a knowledge economy), then a more creative curriculum needs to provide space and support for students to become creative producers rather than just consumers or receivers of curricular content. The consequence of this understanding is that young people need to be supported to become active readers and writers of media. That is, they need to be 'media literate' if they are to participate in the changing world.

Media literacies

Around the world, the political importance of technologies and media has meant that technical competence has been seen to be of increasing significance for nations and the ability to use digital technologies has been introduced to curricula around the globe. Regardless of geopolitical, economic or social circumstance, nearly every country in the world has an educational technology strategy. The incorporation of digital technologies and media into the curriculum has taken a number of forms. In many countries 'ICT' is 'delivered' as a separate subject discipline which teaches the skills of computer use.

154 Craft, A & Jeffrey, B (2008) Creativity and performativity in teaching and learning, British Educational Research Journal 34(5), 577-584; Burn, A & Banaji, S (2006) Rhetorics of Creativity (London: Arts Council/Creative Partnerships)

155 Examples along these lines include Florida, R (2002) The Rise of the Creative Class (New York: Basic Books); for a good overview of relevant debates see Oakley, K (2009) 'Art Works'-cultural labour markets: A literature review (London: Creativity, Culture and Education)

156 For critical accounts see McGuigan, J (2010) Cultural Analysis (London: Sage); Jones, K (2009) Culture and Creative Learning: A literature review (London: Creativity, Culture and Education); McRobbie, A (2004) Creative London, Creative Berlin: Notes on making a living in the new cultural economy, Atelier Europa, URL: **www.ateliereuropa.com/2.3_essay.php**

157 Jewitt, C (2008) The visual in learning and creativity: A review of the literature (London: Arts Council/Creative Partnerships)

More recently there has been a stronger emphasis on 21st Century Skills which are to be developed across the subject disciplines of the curriculum. However, other educators and researchers have moved from thinking about the acquisition of 'skills' in relation to media and technology to a more fluid understanding of 'literacy' and even 'literacies.' As a consequence, there are now a range of programmes worldwide designed to address and support young people's 'media literacy,' their 'digital literacy,' or their 'new media literacies.'

Literacy refers to a set of social, cultural and political practices that involve the interpretation, production and communication of shared meanings. Literacy implies the ability to make sense of and to create meaning, as well as an understanding that doing so is a social practice that is set in an array of complex, interwoven social, cultural and historical contexts.

This understanding of literacy focuses not so much on the acquisition of individual skills but instead concentrates on what it means to think of literacy as a social practice in which meaning is central. It moves from a focus on the set of individual functional skills needed to operate digital technologies to considering the resources and practices needed to wrap around those tools in order to create and communicate knowledge. Being literate in this sense then involves being able to make informed decisions about what meanings to make, how they might be made in different contexts and why. It recognizes that meaning is socially constructed and it involves being reflective and critically engaging with one's own assumptions and those of others: literacy is the combined understanding of language (the operative), meaning (the cultural) and context (the critical), as well as the active creation of knowledge, collaboration and communication.[158]

Cary Bazalgette suggests that 'literacy ought to be the whole portfolio of integrated skills, knowledge and understanding that enables us to participate in our culture and society.' As a result, literacy needs to be understood as practice that involves the reading, interpretation and writing of media in a new media ecosystem of computer technologies and communication tools.[159]

The question is what kinds of literacies are required by students to achieve their aspirations in the changing world and to meet new demands being placed upon people in changing workplaces, as citizens in changing public spaces and in changing communities.[160]

New media and digital technologies provide an increasing range of resources for accessing and acquiring knowledge and meaning-making, and as such change the nature of reading and writing in the broadest sense. Young people need to be able to read, write and evaluate traditional written language, music, pictures, moving images and the spoken word in new formats and modes but also need to engage with relatively new and emerging forms of communication associated with digital media such as hyperlinked texts, games, text messages and different forms of social networking. Henry Jenkins has argued that educators then:

> must work together to ensure that every ... young person has access to the skills and experiences needed to become a full participant, can articulate their understanding of how media shapes perceptions, and has been socialized into the emerging ethical standards that should shape their practices as media makers.[161]

This approach to media use as a form of literacy practice offers educators a way of bridging the divide between youth media and the formal school curriculum; it demonstrates the importance of diverse media practices working alongside the more traditional notions of being literate in reading and writing. As such, media or digital literacy refers to a series of interrelated dimensions of learning that overlap and interact, and are mutually interdependent:

- **Cultural and social understanding.** People exist in cultures and networks, experience multiple interactions with others and with meanings created by others. Developing cultural and social understanding supports the ability to recognize that each act of literacy, digital or otherwise, is imbued with social, cultural and historical influences that shape the creation of meaning and our understanding of it.

158 This view of literacy draws heavily on the work on the work of Brian Street and the New Literacy Studies: Street, B (2003) What's 'New' in New Literacy Studies? Critical approaches to literacy in theory and practice. Current Issues in Comparative Education, 5(2): 77-91

159 Bazalgette, C (2008) Literacy in Time and Space. PoV, 1,1: 12-16.

160 New London Group (2000) A pedagogy of multiliteracies: Designing social futures. In Cope, B & Kalantzis M (eds) Multiliteracies (London: Routledge)

161 Jenkins, H (2007). Confronting the Challenges of Participatory Culture: Media education for the 21st century (Chicago: MacArthur Foundation)URL: **www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf**

- **Creativity.** Being media or digitally literate not only involves being active in exploring digital media but also in creating it and understanding that it itself is created. Creativity in this sense is to think creatively and imaginatively about how to make effective use of the myriad of opportunities (such as animations, podcasts, interactive posters) that digital technologies provide for creating outputs that represent and communicate knowledge and meaning in different formats and modes for different purposes. Through this process learners can be supported to understand that the digital media they engage with is also created for certain purposes and for certain audiences, and is presenting knowledge in a certain way.

- **Critical thinking and evaluation.** Critical thinking involves analysing or processing given information, data or ideas, being reflective and interpreting meaning in order to develop insight about underlying assumptions that support the process of making informed sense of the world.

- **Collaboration.** Learning involves dialogue, discussion and building on each others' ideas to create shared understandings. The ability to collaborate is to work successfully with others to co-create meaning and knowledge. Supporting young people's digital literacy involves developing their understanding of how meanings are collaboratively created using digital technologies and how digital technologies (for example shared documents such as wikis) can effectively support collaborative processes within the classroom and with the wider world.

- **E-safety.** E-safety concerns the development of safe practices when using digital technologies such as the internet and mobile phones. It involves developing understandings of what constitutes appropriate use of digital technologies and the development of a critical reflection about the sort of content that is being made public.

- **Communication.** Effective communication means being able to clearly express ideas and feelings so that others can understand them. Media or digital literacy involves an understanding of how media and technologies can support and affect communication and a critical awareness of the different modes through which knowledge can be represented and how these can be best used for particular audiences.

- **Finding and selecting information.** This includes the abilities to define what sort of information is needed to support a particular activity or task, to know how best to find it, to evaluate the information found for reliability and to critically engage with sources to select relevant information. It also includes being aware of issues relating to copyright and plagiarism.

- **Functional skills.** Functional skills are the ability and technical competence needed to operate a range of digital tools proficiently. An important part of developing functional skills is being able to adapt these skills to learn how to use new technologies.[162]

Knowledge creation networks

What these debates about literacy and creativity point to is how the 'problem' of knowledge to be included in the curriculum is an issue of authorship and production. There is a decentralization of curriculum authorship under way, as teachers and even young people themselves are encouraged to see themselves as curriculum creators.

The task for curriculum developers has shifted from a concern solely with making a series of selections from disciplinary fields to a concern for how students are to produce knowledge for themselves. This is for rather instrumental reasons—to help produce a world-class creative workforce to guarantee the future competitiveness of the economy—but also for more utopian purposes of ensuring social justice and democracy: enabling young people to understand themselves and their own role as actors within local and globally connected communities, who use networked technology to make their voices heard, who can make connections, and who can contribute as equals to the creation of their own and their society's futures.[163]

162 Hague, C & Payton, S (2010) Digital Literacy Across the Curriculum (Bristol: Futurelab); also see Sefton-Green, J, Nixon, H & Erstad, O (2009) Reviewing approaches and perspectives on 'digital literacy.' Pedagogies: An international journal 4(2): 107-125; Gillen, J & Barton, D (2010) Digital Literacies: A research briefing by the technology enhanced learning phase of the teaching and learning research programme (London Knowledge Lab, Institute of Education)

163 Facer, K & Sandford, R (2010) The next 25 years? Future scenarios and future directions for education and technology, Journal of Computer Assisted Learning, 26: 74-93

These arguments about learning communities and inquiry have been marshalled together in recent comments on learning, knowledge and creativity in the network age. In many ways networked technologies can be regarded as powerful devices for enabling such a model of learning.

Ethnographic research by Mimi Ito and colleagues on youths' learning with new media in the US has provided compelling empirical evidence of the formation of informal 'knowledge networks' as a site for media-related learning. This work is theoretically anchored in the notion of 'networked publics' as the form of participation in public culture now available to young people. Public culture here refers to the space between domestic life and the nation-state where different social groups constitute their identities in relation to 'mass-culture mediated forms.' In the current context, this refers to networked forms:

> Rather than conceptualize everyday media engagement as 'consumption' by 'audiences,' the term 'networked publics' foregrounds the active participation of a distributed social network in the production and circulation of culture and knowledge.

According to this argument, young people are actively participating in networked social groups where knowledge is developed and shared. In contradistinction to school, where young people are asked to perform to more standardized forms of achievement, within networked public culture young people in the study were found to be delving into more esoteric and specialized knowledge domains. The authors show how these practices take place across the broad social and cultural ecologies of friendship, families and work, as well as through specific activities such as video gaming and creative media production.[164]

Similar arguments have been taken up to emphasize the formal educational significance of social and network-based technologies. 'Web 2.0' or 'DIY media' are seen to offer alternatives for reconfiguring the curriculum and classroom pedagogy and offer the basis for learning communities that reach beyond the confines of the classroom.[165]

A detailed commentary on research on web 2.0 technologies and education suggests a number of critical dimensions in pedagogy and curriculum development. Web 2.0 requires teachers to orchestrate and manage the online experience of learners, through supporting their reading of representationally diverse texts and multimedia, developing their fluency in new literacies, and making careful judgements about authority. This means that web 2.0 does not bring about the 'liberation' and autonomy of the learner nor a less directive role for teachers. It shows how pedagogical intervention is crucial in a series of new ways to knowledge building.

Given these pedagogic possibilities, however, a curriculum developed in the context of web 2.0 technologies would enable learners to construct and share ideas. At its most radical, this might involve asking learners to help devise inquiry projects of their own or even contribute to the creation of 'learner-led curricula'; a little more conservatively, it would involve the learner creation of knowledge, and support serendipity and exploration as well as the acquisition of information.[166]

An interesting account of the connectivity between networked technology, knowledge creation and educational theory is offered by Will Curtis and Alice Pettigrew, who suggest that today's digital tools enable a more 'pragmatist' approach to teaching of the variety articulated by the American pragmatist philosopher and educator John Dewey. From this perspective, teaching is not concerned so much with transmitting a body of static curricular content and information, but with creating worthwhile and meaningful learning experiences. This approach depends on a pragmatist understanding of knowledge.

For pragmatists, knowledge is conceptualized as fluid and progressive, perpetually changing according to social context, rather than fixed, absolute and restrictive. Instead of being grounded in an abstract or metaphysical level, it is built upon concerns for what is good for the people or useful for practical living and problem-solving. Knowledge is an instrument to be used to make sense and meaning of the world. But it is not completely relative or socially constructed. Rather, it is defined and worked upon progressively by 'communities of enquirers' who, over time, develop the concepts and language associated with particular specialized knowledge domains.

164 Ito, M (ed) (2009) Hanging Out, Messing Around, and Geeking Out: Kids living and learning with new media (London: MIT Press)

165 Merchant, G & Davies, J (2010) Web 2.0 in Schools (Oxford: Peter Lang); Knobel, M & Lankshear, C (eds) (2010) DIY Media (Oxford: Peter Lang)

166 Selwyn, N (ed) (2008) Education 2.0? Designing the web for teaching and learning (TLRP-TEL Commentary)

For Curtis and Pettigrew such a pragmatist orientation to the curriculum might be supported (albeit in a rather limited way) by digital tools which allow learners the opportunity to participate in the generation and presentation of information, for example, through activities including social networking, blogging, podcasting and wiki editing. These activities, they suggest, position learners as 'DIY knowledge makers.' In other words, such tools may be able to bring learners into pragmatist communities of enquiry, but this depends (and this is the key argument) on an understanding both of the conceptual basis and historical formation of the knowledge domain under enquiry.[167]

These contemporary orientations towards knowledge and the curriculum within the context of networks suggests that all knowledge is now understood as located within particular 'paradigms' with their own rules, criteria and systems of symbolic representation, rather than as natural, neutral or 'theory-free' truth or as entirely socially constructed. A key problem or concern, however, is that the focus on networked 'DIY' learning is often loosely defined, with the knowledge to be gained via technology understood in terms of 'bits' that may be broken up and consumed as commodities.

Knowledge commodification

Knowledge has come to be associated with trade and monetary value in advanced knowledge-based economies, so that knowledge is now understood not so much as the interest of particularly powerful elite groups, but as shaped and controlled by powerful networks linked together by finance and media.

This was expressed forcefully and persuasively in Jean-Francois Lyotard's The Postmodern Condition: A report on knowledge from 1979. In many ways, the text continues to provide a useful preface to our present-day concerns in the knowledge economy. Its dominant concerns are with the construction and control of knowledge in technologized society. In this sense, the book anticipates some current problems in education, especially the tension between economic impulses that can be detected in much policy and in skills-based curricula, and the more socially and culturally-oriented concerns of more progressive and creative curricular initiatives.

Lyotard rejected a 'mirror theory' of knowledge presupposed on the accurate reproduction of truth. Instead, like the rejection in the 20th century modernist novel of 'realism' as a representational fraudulence, knowledge was now understood not as the reproduction of some outside reality but largely as an affair of language, an act of communication involving senders and addressees speaking or conflicting with each other in diverse contexts. Even the highest form of knowledge, science (indeed, especially science), was viewed by Lyotard as a linguistic construction, with scientific research and knowledge production not understood as replicating or modelling some outside reality but as a verbal act of the presentation of new ideas and new scientific statements. Knowledge, then, was repositioned not as the reproduction of truth but as an act of performance.

In particular, Lyotard was concerned with the increasing monopolization of scientific knowledge by private businesses and its control by governments. From now on, information was a commodity which could be produced, stored in data banks and exchanged between powerful state and corporate agencies, or packaged up and marketed to the public as infotainment. In this context, knowledge had ceased to be an end in itself and the new goal for its production was its exchange value as an 'informational commodity' to be presented for sale. The performativity and commercialization of knowledge was therefore becoming a major stake in the worldwide competition for power.

Lyotard's 'postmodern condition' described the economic importance of knowledge. It anticipated the importance that would be assigned to 'knowledge economies' in the following decades. As a consequence, the 'production and distribution of learning' would take on enhanced importance for commercial organizations with major implications for knowledge and learning:

> Knowledge is and will be produced in order to be sold, it is and will be consumed... It is widely accepted that knowledge has become the principle force of production... It is not hard to visualize learning circulating along the same lines as money, instead of for its 'educational' value ... dedicated to optimizing the performance of a project.

167 Curtis, W & Pettigrew, A (2009) Learning in Contemporary Culture (Exeter: Learning Matters)

Lyotard was suspicious about the commercialization and circulation of knowledge by and between states and corporations, especially where there was evidence that the circulation of knowledge had passed beyond the control of states and was being regulated only by commercial interests.[168]

Knowledge, networks and monetization

Lyotard's concern with the metamorphosis of knowledge into money has been reiterated in the direct context of the knowledge economy and network enterprise in the 21st century. The networks within which high-value knowledge is produced are firmly interconnected with relevant financial networks to ensure the global flow of valuation in the form of knowledge produced through advanced information processing. This has ramifications for education.

Jo Frankham views the network as an institutionalized utopia in recent educational discourse and shows how the technological idea of the 'scale-free network' has been deployed as a map to achieving myriad positive benefits, including the more entrepreneurial edge demanded by network enterprises. She shows how the discursive construct of the network appeals to constructivist understandings of learning, communities of practice, and to ideals of knowledge production. Her primary concern is that the network is idealized for the exchange of knowledge so that knowledge is 'conceptualized as a commodity, with an ever-expanding market.' Quoting Bernstein, Frankham claims it seems increasingly as though 'knowledge should flow like money to wherever it can create advantage and profit. Indeed, knowledge is not like money, it is money.'[169]

This commodification and monetization of knowledge in learning networks raises significant questions about how and what knowledge is produced. Frankham suggests that there is a risk of overemphasizing 'soundbite' knowledge that can be easily searched, combined and exchanged, thus reducing the human process of knowledge production to technologically efficient information exchange. This is knowledge as production and consumption.

The recognition that knowledge has monetary value, that it always remains 'in-the-making,' that times are uncertain, fragmented, eclectic and highly mediated, and that this requires new approaches to education, has received strong support in recent years from think-tanks, government departments and industry alike. In the knowledge economy that Lyotard anticipated, the production and exchange of informational commodities through a perpetual circuit of projects would become a political and economic priority, and education would be geared to optimizing performance and enhancing competitiveness in this context. It is this argument about optimization and performativity that has led to the emphasis in many curriculum conversations being put upon procedural 'know-how' knowledge as opposed to propositional 'know-what' knowledge. Postmodernist ideas about knowledge that are applicable to education and curriculum debates, then, have entered mainstream curriculum development conversations.

'Know-what' vs 'know-how'

In a multimedia digital world, knowledge is increasingly multimodal, combining text, image and sound, which brings about a change in what is understood as comprising knowledge itself. Consequently, there is a key shift from propositional knowledge of what already exists to knowing as an ability to perform. In a world dense with informational sources and messages, therefore, the value of information is increasingly said to be in its usefulness and the effectiveness of its presentation; and instead of representing absolute truth it is open to contestation and disagreement.[170]

This represents the translation of postmodernist conceptions of knowledge to an understanding of knowledge for digital times. As a result, what is understood as worthwhile knowledge has begun to shift from a concern with knowing propositional 'content' to gaining procedural 'know-how' in the shape of new kinds of skills or 'competences' for learning. It is this shift that concerns sociologists interested in powerful knowledge.

Such a concern with 'know-how' rather than 'know-what' is well demonstrated by recent curriculum initiatives which have sought to develop a '21st century skills' or 'competencies-based' approaches. These programmes and initiatives, risk becoming as divisive as the

168 Lyotard, J-F (1984 [1979]) The Postmodern Condition: A report on knowledge, trans Bennington, G & Massumi, B (Manchester: Manchester University Press)

169 Frankham, J (2006) Network utopias and alternative entanglements for educational research and practice. Journal of Education Policy 21(6): 661-677

170 Lankshear, C, Peters, M & Knobel, M (2000) Information, knowledge and learning: some issues facing epistemology and education in a digital age, Journal of Philosophy of Education 34(1): 17-39

conventional subject curriculum, serving to denigrate subject knowledge whilst championing the idea of 'core,' 'key' or 'transferable' skills, as if these may be developed and exercised in isolation.

The key basis, Michael Young claimed, for distinguishing between the 'curriculum of the past' and a 'curriculum of the future' was division and insulation in the former and connection in the latter. The subject curriculum historically represented 'divisive specialization' through the insulation of subjects and the additional divisions maintained between academic knowledge and vocational skills, scientific knowledge and technical work, and so on. In addition, within subjects themselves there was increasing modularization as the curriculum was broken down into short learning experiences. A curriculum of the future, he argued, should be instead based on 'connective specialization,' where product and production process are envisioned together.

Connective specialization refers explicitly to the interdependence of different specialists—whether subject experts or guidance staff—sharing an overall sense of the relationship between their specialization and the whole curriculum. This suggests reorganizing the curriculum to take account of interdependence of the content, processes and organization of the curriculum and to overcome the opposition between an academically educated person and a competent employee—or between a person educated in 'know-what' and another educated in 'know-how'. Yet much of the 21st century wider skills and competences discourse ignores this interdependence.

Young's most recent work reasserts the importance of 'powerful knowledge,' that is, the structured disciplinary knowledge around which a subject-centred school curriculum is constructed for transmission to students. For Young this reassertion has been brought about by misgivings concerning 'subject knowledge-light' curriculum programmes based on wider skills and competences. Young is writing, then, in response to a set of external pressures on the curriculum which have been largely economic and focused on how to make students employable, and which have shifted curriculum development in the direction of more global supra-national forms. These pressures have led to some new orientations towards knowledge which emphasize the ability 'to do' rather than 'to know'; 'to be flexible; to avoid boundaries; and to produce competent and self-regulating citizens.' These include a number of activities where education has been 'opened up,' such as where:

- subject content is reduced
- student choice is increased
- barriers between subjects are weakened and cross-subject themes and generic criteria are emphasized
- curriculum and qualifications are broken up and students are expected to put together their own curricula
- boundaries between school and non-school knowledge are blurred by introducing topical issues
- students are encouraged more to draw on their extra-school experiences.

In all these examples there is a shift in responsibility for an individual's education from the teacher to individual learners and his or her interests and choices, and rather than a core curriculum the learning experience is to be bound together and made cogent through focusing on lists of generic learning outcomes sometimes known as soft skills. Young, however, is uncertain that these generic capabilities can be acquired, taught or assessed separately from specific curriculum and knowledge domains with their specific bodies of content and contexts. This refers to the issue of 'epistemic access,' of what knowledge students are granted access to through different curricular or generic outcomes approaches.

These changes construct the curriculum more flexibly and less centrally, are seemingly more open, remove boundaries between subjects and between learners and subjects and between schooling and other social experiences. There are clear centrifugal tendencies in all of these changes. Although these decentralizing programmes possess favourable intent from a social justice perspective (emphasizing connection with working class students rather than only favouring the middle class), from an epistemological perspective they are flawed, over-personalized and seemingly content-free and emptied out of knowledge.[171]

171 Young, M (1998) The Curriculum of the Future: From the 'new sociology of education' to a 'critical theory of learning' (London: Falmer); Yates, L & Young, M (2010) Globalization, knowledge and the curriculum. European Journal of Education 45(1): 4-10; Young, M (2010) Alternative educational futures for a knowledge society. European Educational Research Journal 9(1): 1-12

Knowledge boundaries

A series of recent critical assessments of 'know-how' oriented curriculum initiatives have shed serious doubt on these centrifugal approaches by drawing on the work of Basil Bernstein. For Bernstein, school knowledge is regulated and controlled in two ways. Firstly, it is defined by either strong or weak classification. Second, it is defined by either strong or weak framing.

- **Classification.** The extent to which knowledge boundaries are maintained. In a conventional subject curriculum, classification is strong with subject knowledge insulated from everyday or non-school knowledge; in a more flexible or 'content-free' approach classification is extremely weak with everyday non-school knowledge brought into the classroom and curriculum boundaries penetrated. Classification is therefore largely concerned with content as it is represented by specialized discourses.

- **Framing.** The distribution of control of communication. Again, in a conventional subject curriculum, framing is high, because teachers maintain control of the messages being communicated, while in a more child-centred approach framing is far weaker, with students themselves exerting some control of the content of classroom communication. Framing is primarily a matter of communication.

Additionally, Bernstein distinguishes between esoteric and mundane knowledge.

- **Esoteric knowledge.** Theoretical and conceptual knowledge, consisting of 'collective representations' of a society that allow it to 'make connections' between objects and events that are not obviously related and to 'project beyond the present' to a future or alternative world. Esoteric knowledge-based collective representations are therefore the means societies use to transcend the limits of individual experience to see beyond appearances to the real nature of relations in the (natural and social) world. For Bernstein, the school curriculum is the site for young people to encounter esoteric knowledge and to acquire the collective representations which will enable them to become full participants in their society, beyond the immediate everyday concerns of their localities and contexts.

- **Mundane knowledge.** Tied to specific contexts and events, so that the meaning of mundane knowledge is only understandable within that specific context it rests upon. Mundane knowledge concerns the profane, everyday world. Because meaning is context specific, meaning is consumed by that context and cannot easily be applied elsewhere. As a consequence it is difficult for mundane knowledge to be a driver of change beyond the context in which it is enacted. The structure of mundane knowledge is segmented by the specific context in which it is realized (eg the workplace, home or local sporting club). This gives rise to segmental knowledges, which are not necessarily transferable to other contexts except where features of the context and social relations are similar. Thus, for Bernstein, mundane knowledge originates in the everyday space of lived experience, and cannot penetrate the structural organization of the collective representations that comprise powerful esoteric knowledge.[172]

Using this analytical framework, Leesa Wheelahan critiques skills-based curricula in Australia for 'abandoning' disadvantaged young people in the weakly classified and mundane knowledge of their everyday experiences. Such projects, she argues, fail to provide access to the kind of powerful and esoteric knowledge contained within disciplinary specializations and available to more advantaged young people.[173]

Geoff Whitty, writing on curriculum initiatives in the UK, similarly concludes that 'knowledge-light' approaches which engage with young people's everyday lives at the expense of disciplinary knowledge, or seek to foreground learning process while pushing educational content to the background, are insufficient in providing access to powerful knowledge, and suggests that too little research has been conducted on the advantages and disadvantages of new curricula currently being promulgated.[174]

A partial solution, for these critics, is to maintain strong curricular classification while weakening the framing at the level of pedagogy, so that it is in the pedagogical act of communication that teachers seek to make more connection with students' own everyday contexts and build bridges between mundane everyday knowledge and esoteric, powerful knowledge.

172 Bernstein, B (2000) Pedagogy, Symbolic Control and Identity, 2nd ed (Oxford: Rowman and Littlefield)
173 Wheelahan, L (2007) How competency-based training locks the working class out of powerful knowledge: A modified Bernsteinian analysis, British Journal of Sociology of Education 47(5), 637-651
174 Whitty, G (2010) Revisiting School Knowledge: some sociological perspectives on new school curricula. European Journal of Education 45(1): 28-45

As Whitty points out, though, this doesn't overcome the problem that making these connections is dependent upon the nature of the knowledge being accessed. For both students and teachers, it is often difficult to develop coherent and meaningful links between school and non-school knowledge. The weakening of the framing cannot penetrate the knowledge problem because everyday knowledge and powerful knowledge discourses contain their own legitimizing rules. What goes as legitimate varies considerably between subject knowledge and everyday knowledge, as well as between different subject cultures, making it difficult for students to make connections between their own contexts and the school context or for teachers to make interdisciplinary connections with other subjects, even where there are shared thematic interests.

These findings indicate the difficulties and drawbacks associated with moves towards more creative, process-based, student inquiry-led or competencies curricula that have been developed as a response to changing times in the context of digital media and a more postmodernist understanding of knowledge as contested. Moreover, these analyses are extremely challenging to the literature on learning with youth media. As yet, there has been little attempt to perform a detailed analysis of the implications of knowledge theory for understanding learning with youth media.

Social realist curriculum development

The recent tendency towards post-standardization, de-differentiation and decentralization in many new curricula policies and initiatives has become an area for concern in the sociological analysis of knowledge in education. There is a growing body of educational scholarship which questions the turn to outcomes-based approaches, to constructivist notions of learning in communities of practice, and of knowledge creation. There is increasing attention to a social realist approach to knowledge, which Stephanie Allais articulates:

> Unlike both the 'traditional' approach, which does not challenge given narratives and canons, and the 'learner-centred' approach which rejects any narrative or canon, this approach forefronts the important choices that need to be made in selecting and ordering knowledge and concepts in a curriculum.[175]

Social realism therefore acknowledges the social and political shaping of the production and transmission of knowledge, but also acknowledges that knowledge areas differ in their internal coherence, principles and procedures. The social realist approach sees knowledge as arising from specialized social activities over time. Knowledge has developed into non-arbitrary forms reflected in the differences between disciplines, their forms of conceptual advance and their forms of objectivity. This understanding of knowledge poses a challenge both for curriculum restorationists and curriculum futurists. The challenge from a curriculum development perspective is that the traditional organization of curriculum proceeded from epistemological assumptions about the memorization of knowledge for its own sake, while newer alternative curricula reduce the role of school knowledge altogether because it acts as a source of inequality.

Far from representing a conservative return to elite privilege, research in this area is seeking to understand the conceptual structure of particular knowledge domains, including those domains represented by school subjects, and to show how these conceptual structures have evolved historically and socially. Rather than the a-social approach to subject content as a fixed, objective and neutral body of knowledge for transmission, or the over-socialized approach to viewing all knowledge as the construction and interest of powerful ruling groups, this new approach to curriculum development seeks to embrace content, concepts and skills together. This approach seeks to recognize that knowledge changes, that content carries concepts—content is not a mere end in itself—and that it is through engaging with such concepts that learners gain access to ways of thinking that they are able to draw on throughout their lives.

This social realist approach to knowledge recognizes the differentiation of knowledge between subject domains, between institutions and their conceptual bases and ideologies, and between the curriculum and experience. It recognizes that knowledge is historically specific, and that it changes over time, as represented by the constant development of knowledge in university research. It recognizes therefore that concepts, skills and content are all important and must be stipulated in any curriculum development, rather than understood in isolation.[176]

175 Allais, S (2010) Economics imperialism, education policy, and educational theory. Paper presented at the Education, Work and the Knowledge Economy seminar, School of education, University of the Witwatersrand, 10 September 2010

176 Young, M (2007) Bringing Knowledge Back In: From social constructivism to social realism in the sociology of education (London: Routledge)

Knowledge fragmentation

In summary, there have been recent changes and a series of intellectual fragmentations and departures in how knowledge is understood and what kind of knowledge is to be taught in schools. The main shifts are from bodies of content represented by strongly insulated and secure subjects to more procedural knowledge and 'know-how,' generic skills and new taxonomies of competences relevant to living and working in a knowledge economy and digital times. A more 'critical literacy' inclination towards knowledge has become an important educational outcome in its own right, especially as increased pressure is being put on the curriculum by external organizations such as global businesses.

Research in the sociology of knowledge has begun to show how curriculum trends have become overly polarized, with traditionalists pointing towards the restoration of 'objective' knowledge and futurists advocating for a more generic or outcomes-based approach with its conceptual basis in economics ideology and the ideal of learners making rational self-interested choices. These shifts and debates in understanding what constitutes and counts as knowledge in the curriculum—constituting an epistemological fragmentation in curriculum thinking—has substantial implications for the future of school subject disciplines, the role of teachers, and the educational approach to youth media in schools.

Conclusion

This review of the relevant research on youth media and curriculum development has covered a lot of ground. The risk is that reviews of the research literature raise more questions than they provide answers. Certainly, conducting this review has raised substantial questions and challenges for us.

Deriving 'conclusions' from a literature review suggests that answers have been located, and that we are able to conclude matters satisfactorily, as if at the end of our inquiries. We are, however, merely at the start of exploring many of the issues raised.

Rather than full conclusions, then, in this final section, we attempt to summarize from the literature a series of challenges and considerations for the future of the curriculum from each of three main areas we have covered.

Digital times

- **Disorganization.** The current era may be characterized as increasingly disorganized, as the structures that ordered and regimented social life in the 20th century dissolved towards its close. The terms that define our current times refer to liquidity and fluidity, to fragmentation, distribution and disorganization, decentralization and centrifugality. Work, leisure, politics, culture and everyday social and family life are understood to be less structured and routinized, with a greater degree of personal flexibility and capacity for personal creativity, as well as opportunities for cultural expression and affiliation via potentially global electronic networks. Individuals are now more in control of their own lives and are empowered by access to wider cultural diversity. But this brings about increased individualization, celebrates consumer choice, and potentially erodes communal life.

- **Youth media cultures.** Youth media cultures are diverse and dynamic. Rather than viewing youth media practices as superficial, consumerist and even dangerous, young people are recognized as participating in a wide range of social, leisure and civic activities. While the influences of commercialization and adult content are very real and require ongoing critical attention, it is also important to acknowledge that youth media participation provides young people with points of access to political, civic and cultural content too.

- **The network society.** In the network society, everyone is connected to networks, whether small and intimate or global and anonymous. While this has major implications for work, with labour increasingly divided between high-level self-programmable labour and the generic capacity to execute instructions, it also brings about unprecedented opportunities for communication and participation. With network technologies, mass media is transformed by 'mass self-communication' where individuals potentially are enabled to communicate with mass audiences. Increasingly, all of us are 'creative audiences' involved in receiving and interpreting and even producing a diversity of media messages from multiple media platforms and channels. For many young people especially, the internet is now the main site for accessing and consuming media, with empirical data indicating the erosion of mass media 'prime time' to 'my time' in a network era of mass self-communication.

- **'Zombieconomics' thinking.** Economics has become almost imperialist as a mode of discourse in many aspects of modern life, reducing human life to the optimizing behaviour of individuals and setting up competitive markets in all social institutions. In education, this championing of economics has become especially pronounced in policies focused on markets and free choice and the devolution of educational policymaking to individual schools, regional school clusters, or private sector school partners. At the level of learning, there is increased emphasis on personalization and choice too, with learners positioned to maximize their potential by making choices about different learning pathways, while teachers customize their pedagogies to meet the diverse demands of learners.

- **Knowledge economy.** Moreover, economics thinking can be detected in the ongoing emphasis on the knowledge economy as a dominant vision of the future of education. While there are clearly sound reasons for educators to prepare young people for changed economic circumstances, the knowledge economy ideal of entrepreneurial labour in a free market which demands creativity and innovation has been challenged as a universal narrative or discourse which rationalizes the case for educational change.

Curriculum development

- **Curriculum ideology.** The organization and development of any curriculum is always ideological, never a value neutral or de-politicized act. In recent curriculum developments the world over the emphasis has been on a technical-behaviourist ideology that corresponds with aspects of economics thinking and the positioning of students as 'human capital' that can be exchanged in labour markets and contribute to a global restructuring of the production process. But the very recent history of curriculum development shows how different ideologies are mobilized and supported, and how these bring about radically different forms of classroom practice. 'Progressive' educational approaches advocated in the post-war decade, for example, were based in a more social-romantic ideology which took a fundamentally different view of the role of education as a process of engaging fully with children's existing social experiences.

- **Curriculum restorationism and futurism.** Curriculum thinking is polarized by restorationist and futurist tendencies. The restorationist tendency seeks to restore traditional, heritage, legacy and canons of knowledge to the curriculum. In so doing, it represents a traditional and conservative approach to curriculum making. The more futurist tendency however looks toward a future of technology, lifelong learning and high skills labour, mobilized and rationalized according to a blueprint that sees schools as preparing young people for work in a globally competitive technological world. Both are myths or imaginaries which do not exist wholly as empirical realities, but as discourses both produce powerful and compelling narratives of the need for educational change which may be seen as exerting influence on policies and enacted in classroom practice. Curriculum theory suggests a number of alternative blueprints for curriculum development that may challenge the contemporary dominance of economics thinking, curricular restorationism, and the imagineering of curricular futurism.

- **Reflexivity.** Reflexivity is an important concept, and points to the ways in which learners need support to identify their own life narratives, trajectories and identities within the context of changing family structures, changing work structures, changing communities, and increasing cultural pluralism. Thus a concern with reflexivity may be understood as a concern to develop curricula that can support individuals and groups to critically examine their own social contexts and work with teachers to 're-educate' themselves as appropriate. This approach to reflexivity is somewhat tempered, however, by the tendency toward individualization and self-calculation that critics have examined.

- **Process-inquiry.** A significant alternative to standardized curricula is represented by a process-inquiry approach where the curriculum is designed to promote open-ended inquiry and discovery. This approach is sensitive to students' own contexts, and is based not on specific objectives or outcomes but on the educational procedure itself. This is a curriculum of discussion, focused on understanding context, reflection and problem-solving, often following an action research method rather than a 'banking' or depositional approach where teachers impart knowledge to students.

- **Postmodernism**. Postmodernist theory offers some politically sensitive contributions to curriculum development. A postmodernist approach to curriculum development is neatly summarized by the four Rs of:

  - **Richness.** Depth and layers of meaning, indeterminacy and anomaly, multiple possibilities, dialogue, hypothesis generation, pluralistic interpretations
  - **Recursion.** Reflection, discussion, combination, and exploration of meanings
  - **Relations.** Recognize cultural relationships influencing our views, both local in origin and global in interconnections
  - **Rigour.** Mixing indeterminacy with interpretation, critically evaluating all (hidden) assumptions, valuations and judgments

  A postmodernist orientation recognizes a curriculum as a text for multiple interpretations, with 'intertextual' relations and connections to other sources of knowledge, rather than as a fixed and static body of content.

- **Cosmopolitanism.** The concept of cosmopolitanism has been mobilized in curriculum debates as a way of referring to the ideal of the enlightened global citizen whose values and morals are at the planetary scale rather than concerned with the provincial scale of the nation or state. In this sense, cosmopolitanism refers to democratic empowerment and cultural diversity in the context of globalization. Though cosmopolitanism is an empowering discourse, it has been complicated by the fact of globalized consumerism and free markets, so that, instead of enlightened world citizens, the dominant form of cosmopolitanism is represented by global consumption patterns and global flows of capital, as well as by a LEGO block approach to identity-building where people freely mix cultures in their own projects of the self. Consequently, it has been suggested that curriculum reform today is intimately connected to issues and challenges of cosmopolitanism, cosmopolitan reflexivity, and the formation of young people as 'unfinished cosmopolitans.'

Knowledge

- **Perpetual beta.** The growth of the internet has shifted the dominant structural conditions for knowledge production and acquisition. In the age of the internet, knowledge is increasingly regarded as in 'perpetual beta' state, understood to be forever unfinished and always subject to further possible revision and editing. This represents a massive revision of the logic of print where the publication of a printed text was seen to confer authority and stability on knowledge. In the modern world, the recipients and audiences for knowledge are increasingly understood as knowledge producers in their own right, mobilizing network resources to engage in everyday social knowledge creation. In the domain of work, too, knowledge production and creativity have become prized as the main source of valuation in the network society is derived from the creation of new knowledge and innovations. Knowledge today is 'plastic' and malleable, applied to contemporary issues rather than reified by intellectual elites, and has been positioned as the major 21st century commodity form.

- **School subjects and 'know-how.'** In the context of this shift in the status and authority of knowledge from academic hierarchies to applied innovation, school subjects have been criticized for being static and fixed, overly tied to tradition and dominated by strong disciplinary ideologies. These subject ideologies have sometimes resulted in a 'culture clash' with the introduction of computing technology and media into schools. As a consequence critics have suggested that the content-based 'know-what' approach of school subjects should be replaced with a more dynamic 'know-how' orientation to learning, where learners are expected to gain the skills and procedures required by a dynamic innovations-based network society. This argument suggests that young people will continue learning throughout their lives through contextually-situated, on-the-job problem-solving tasks. In this view, learning is to be understood as a fluid process, decentred from the core content of the subjects and the curriculum and linked more centrifugally to authentic contexts such as industry, vocational and community sites.

- **Powerful knowledge.** Sociologists of knowledge have responded to the new advocacy of 'know-how' approaches to curriculum development with a renewed attention to the structure of knowledge itself. While much sociological analysis has concentrated on its social constructedness—on the ways in which it is produced, legitimated and controlled by powerful social groups—the new 'social realist' analysis also recognizes that knowledge is structured and developed according to particular disciplinary methods, tools and rules that have evolved over time and cannot be reduced entirely to social context. In addition, a social realist approach seeks to challenge the 'instrumentalization' of the curriculum to particular ends. The focus on 'know-how' or competences-based curricula which are oriented towards supporting the political and economic vision of an innovative high-skills workforce is one such example, as is a strongly insulated subject curriculum which preserves particular traditions, legacies, the cultural heritage and canons of knowledge. The task for social realists is to develop curricula that fall neither into the trap of restorationism nor the seductions of futurism.

Towards 'centrifugal schooling'?

At the outset we identified the emerging tendency towards centrifugality in the 're-imagineering' of the curriculum for the future. Have we come any closer to working out the implications of 'centrifugal schooling'? Do we still believe that centrifugal schooling represents the future—for better or worse—for organized education? What does centrifugal schooling mean for curriculum development? How does centrifugal schooling engage with youth media?

These remain open questions. Yet the literature reviewed here suggests that centrifugality is a powerful force in contemporary educational debates that is as-yet weakly understood. Perhaps appropriately, the centrifugal discourse of decentralization and decentred learning, of boundary penetration and fragmentation, is ambiguous and multi-faceted. It both represents a more democratic approach to schooling, where diverse social contexts and cultures are recognized as sites of learning that penetrate beyond the boundary walls of school; and a more individualizing, free market, consumerist understanding where young people are encouraged to re-make their identities as flexible lifelong learners.

In the latter case, a core or centralized curriculum is regarded as an archaic throwback to the Fordist factories of the 20th century with their concern for hierarchy and social organization. In the current context of the network society and knowledge economy, lifelong learners need to be self-starting and self-calculating, constantly re-educating themselves and adapting to the dynamic decentralized conditions of disorganized capitalism.

Centrifugal schooling and curriculum development that attempted to meet these aims would view schools as hubs and rails in learning networks, linked via information-processing and network technologies to other institutions, both formal and informal; to 'authentic' learning spaces within industry, vocational and community sites; to vast 'clouds' of information available online rather than merely to authoritative printed texts and knowledge sources contained in libraries; and it would focus on learners constantly updating and upgrading their 'personal portfolios.' The idea of 'school' or 'education' as institutions would be questioned, if not jettisoned, in favour of fluid learning experiences involving wider skills and a more diverse conception of intelligence than the implicit model of intelligence in much curriculum design.

In terms of youth media, a centrifugal schooling approach to curriculum development would focus on the cultural significance of young people's existing media experience and its value for inclusion in the curriculum. It would recognize that much youth media practice is relatively sophisticated, involving complex acts of communication, interpretation and production just as much as consumption.

However, such a curriculum would also need to recognize that this potential for creative media practice is in complex ways shaped by the media businesses and political groups that control the media networks within which youth media practices take place. It would need to recognize that young people's participation in online globalized media networks increasingly means that their experience and understanding of the world is framed and influenced by media operators and other political and financial networks. Though we ought to recognize young people as creative agents using media for their own participatory purposes, this must not come at the expense of a critical analysis of the structures that shape and bear upon them.

Centrifugal schooling should not celebrate a historical triumph of decentralization over standardization but seek to produce curricula that can help young people navigate a decentred, disorganized and ever-more messy networked media ecosystem.

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Williamson, B, with Morgan, J and Payton, S (2010) Curriculum Development and Youth Media. Bristol, Futurelab.

Key to Themes

Futurelab understands that you may have specific areas of interest and so, in order to help you to determine the relevance of each project or publication to you, we have developed a series of themes (illustrated by icons). These themes are not intended to cover every aspect of innovation and education and, as such, you should not base your decision on whether or not to read this publication on the themes alone. The themes that relate to this publication appear on the front cover, but a key to all of the current themes that we are using can be found below:


Digital Inclusion – How the design and use of digital technologies can promote educational equality


Teachers and Innovations – Innovative practices and resources that enhance learning and teaching


Learning Spaces – Creating transformed physical and virtual environments


Mobile Learning – Learning on the move, with or without handheld technology


Learner Voice – Listening and acting upon the voices of learners


Games and Learning – Using games for learning, with or without gaming technology


Informal Learning – Learning that occurs when, how and where the learner chooses, supported by digital technologies


Learning in Families – Children, parents and the extended family learning with and from one another