

“New Literacies, New Democracies”

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I FRAMING THE ISSUES

1 What is the aim of education, of educational changes?

To ensure

- that humans can be / remain able to act in the social world on their own behalf and for their benefit;
- that as members of a cohesive community they can contribute to common social purposes by dealing productively with constantly new problems and finding solutions to these;
- that in their actions they have a clear ethical sense of the effect of their (semiotic) actions on others and can act so as not to damage the potentials and lives of others. This includes reflection on actions in relation to large issues such as ‘sustainable futures’ in all domains.

Democracy, in that context and that of this ‘challenge’, is seen as the possibility for full **participation** as the result of equity of potential through access to essential conceptual, cultural, social resources.

One constantly present danger to this conception is the widely and urgently felt anxiety to respond to incessant economic, political and – above all, in Education – technological change through a striving for ceaseless adaptation to such change.

By contrast it is more desirable to maintain clarity about a set of principles: the need for maintenance of social cohesion and integration; the pursuit of full participation in a democratic society through Education; the provision of fundamental means of a shared ‘curriculum’ of resources, of values, processes, information and dispositions.

2 Assumptions made in this paper

Changes in meanings and in the means for communicating meanings – ‘literacies’, medial change and semiotic change generally – are shaped first and foremost by social and economic factors and processes. Consequently these, always both ‘local’ and ‘beyond the local’, form the essential environment for debate and proposals.

‘Education’ always has been and remains subject to social, cultural, economic and political givens. However, it responds, at different rates at different times, to these and to technological changes.

Primary among the social/political factors shaping Education are the relations of ‘state’ and ‘market’. European states are coming out of a period (of about 150 years duration) in which the aims of the 19th century nation-state and of a nationally conceived (and to some extent controlled) economy determined the goals of Education. As a consequence, the ruling conceptions and metaphors of Education come from that period, shaped by its requirements and structures. New conceptions will require apt new metaphors as essential guide-rails to thought and action.

II ‘TRENDS’ SHAPING THE ENVIRONMENT FOR EDUCATION

The last five decades have witnessed a changing relation of market and state: from state control of the market to various forms of contestation between the two, to a situation now where it seems clear that the market controls the major institutions of the state: where the state acts as servant of the market.

State and market have profoundly different relations to and expectations of Education. The state's concern had been the development of a 'citizen' – a social subject whose identity was shaped by the goals of the nation-state and the requirements of a labour-force serving the needs of a national economy. That state was interested in cohesion, integration and homogeneity – however imperfectly realized. The (now globally shaped) interests of the market are neither about citizenship (shared values, aspirations, dispositions) nor about a labour force, either for a national or global economy. In advanced capitalist conditions the market actively fosters *fragmentation* in order to maximise the potentials of nichemarketing.

Concerns around profession, work or moral / ethical issues are increasingly left to individual desire, effort and action – that is, if and where choice is possible, given limitations or not of economic, cultural and social capital.

The social identity preferred by the market is that of 'consumer', a subjectivity with entirely different social, cognitive and ethical considerations and requirements to those of 'citizen'. An Education-system – or institutions within that – needs to be clear about its stance towards that: whether in support, in rejection, in accommodation or in seeking to develop alternative positions.

Much of the debate in this domain has been framed in terms of *class versus lifestyle*. A more comprehensive term than 'life-style' is that of 'life-world'; it points to clusterings of different kinds of social factors and resources, such as education, gender, age / generation, ethnicity, regionality (the telling differences in access to resources between city and rural-marginal areas). The impact, potentials and possible accelerating or ameliorating effects of new technologies need to be seen in this context. For instance, it is unlikely that the internet can readily make up for missing resources of a physical / concrete kind, such as schools, libraries, newsagents, a variety of shops and social venues – cafes, clubs, etc, especially for those whose educational attainment, social motivation and material resources are low.

Major factors:

1 Power, authority/authorship

The factors alluded to have brought about profound changes in social forms, structures and processes and they have shaping effects on forms, processes and possibilities of meaning and learning.

Generative and crucial for understanding of educational environments are *changes in power and principles and agencies of control*. In the domains of meaning, communication and learning – Education – that change can be thought of as a shift from 'vertical' to 'horizontal' structures of power, from hierarchical to more ***open, participatory relations***, captured in the shift of emphasis from teaching to learning. That has the most profound effect on Education. While this may be an illusion, seen in wider frames, it is also the case that young people act within such an understanding of power. It manifests itself in resistances (in various ways) to

traditional authority and in their assumption of significant agency on their part in the domain of 'their own' culture and their own cultural / semiotic production.

The social and economic changes alluded to above are paralleled by and characteristic of features of the contemporary media landscape. **The (changed / changing) media landscape** is marked by five factors:

- the ***participatory affordances*** of current media technologies;
- ***the global and local 'reach'*** of media (obliterating the difference of global and local);
- ***contents both global and local;*** by
- ***ubiquity, convergence and connectivity*** and by

- **multimodality**, that is representations in many modes, each chosen for its communicational potentials

2 **Social consequences: *Production and participation as the now ruling metaphors***

With former structures of power, the characterization of the relation of media 'audience' to media production had been that of 'consumption'. With new distributions of power, **production** and **participation** are the increasingly ruling characterizations of those who had previously been seen as 'audience'. *Youtube* (founded in 2006 and sold within 18 months to Google for 1.6 billion US\$) witnesses a daily uploading of 60 000 videos. That can stand as a metaphor for the changed social relation to media: *producing* for an unknown and potentially vast group, *distribution* via existing, new or yet to be created 'sites': *production* for the new media, new sites, in full 'democratic' (?) *participation*.

3 **Theoretical consequences: *from critique to design***

While 'consumption' had been the dominant metaphor for understanding the power relation of producers and 'audience', 'critique' offered a possibility of challenging / disrupting that relation: that is, from a position of lesser power to greater, from reception of messages to refusal to consume these, subjecting them to critique instead. Engaging in 'critique' was to refuse the assumed relations and distributions of roles, rights, responsibilities and power and instead to bring them into crisis via a 'distancing analysis' of purposes, aims, means and interests of the maker of the message.

In a situation where social structures were relatively firm, stable, and inequitable, which took the centrality and completeness of language as the means of representation and communication as given, critique seemed a possible route to refusal of the imposition of power.

In an unstable social world with different distributions of power, in which the different representational modes offer significant choices for representation, **design** offers a paradigm which keeps insights offered by 'critique' but links these to action in the designer's interest focussed on the future. It is an assertion of my 'interests' in the social/communicational world, and my ability to give shape these interests through the design of my messages with the resources available to me. It is the position taken by those who produce (for *youtube* even if not in or for the School) and who disseminate their messages to a world which they address confidently.

4 **Personal consequences: *existential insecurity or agency in participation and connection***

At a personal level factors such as *generation, education, class, region*, and maybe to a lesser extent *gender*, have telling effects. Generationally, it is the case that members of older generations are oriented towards traditional sources of authority – whether of profession (the medical doctor, the solicitor, the 'expert' in general) or social structures; they rely on information being brought to them. Educational level may also play a big role here. Hence there are different patterns of participation and of production. The willingness to accommodate to the global 'reach' of new media is also likely to vary – as is the ability actually to make sense of cultural difference. Similarly with **ubiquitous connection**. Here lies a real danger of groups 'coming adrift' from the rest of society. For them existential insecurity may be a real problem.

III **COMMUNICATION AND LEARNING IN THE CONTEXT OF FLUIDITY / PROVISIONALITY / INSTABILITY**

Three features mark what is (at the moment!) salient, characteristic, and indicative of the contemporary media landscape.

1 **Forms of knowledge production**

'Knowledge' and text are entirely linked. Emblematic of this is the concept of **user produced content**, eg the 'wiki' and 'Web 2.0' software. In *Wikipedia*, the 'authors' are not a community or a 'team'; authorship is by a socially diverse 'collection' of people, not an

integrated or cohesive group. Authority is 'assumed', rather than 'achieved' or 'bestowed'. At best these 'authoring collections' are, at the moment of their authoring, 'inceptive communities'. That is, the activity itself may lead to new forms of sociality and community.

Where previously authorship had been regulated and protected by legal means, in wiki-like production, authorship frequently is not an issue; texts are open to constant modification. This raises the profound issue of possibilities of reliability and means of discernment.

2 Forms of text making

For the generation aged below 20 or so, there seems at the moment little or no concern about what seem to their elders central questions, namely of 'authenticity' of authorship of certain kinds of texts. In *downloading*, *'mixing'*, *cutting and pasting*, *'sampling'*, *re-contextualization*, questions such as "where did this come from?", "who is the original/originating author" seem not an issue. There is, seemingly, entire and mutual incomprehension between an older generation (say teachers, whether in school or higher education) and the younger. There seems however an absolute interest and precision on their part about authorship in relation to culturally salient, valued, and identity-conferring cultural artefacts.

There is an absolute and urgent need to understand the practices, aesthetics, ethics and epistemologies of new forms of text production. At the moment these new forms of text production are discussed by 'authority' in terms of 19th century models, where 'plagiarism' or 'mere copying' are terms often too quickly used: that is, the invocation of models from an era where conceptions of authorship were clear and legally buttressed.

Ironically, the very same processes are in use at 'higher levels', as 'pastiche' in Post Modern art forms: as in the works of Jeff Koons, Damien Hirst, or in much contemporary architecture.

3 Social (and semiotic) blurring, dissolution, abolition, disappearance of boundaries

These boundaries are of different kinds:

- *epistemological and ontological*: issues of 'knowledge', fact / fiction;
- *social-interactional*: issues of genres;
- *power, authority and convention*: the question of 'canonicity' / reliability of forms, knowledge;
- *'knowledge' and information*: with the coming of user produced/generated knowledge, the line between 'knowledge' and 'information' has become problematic; with knowledge now increasingly seen as tool shaped / transformed from information by the one who has need of knowledge-as-tool.

Epistemological and ontological: reality / fiction:

Examples of the blurring of the boundaries - and consequent strong reactions - between 'reality', *fact* and *fiction* abound in recent media practice: whether 'reality TV'; concern about methods of documentary and docu-drama production; the hullabaloo about the Abu Ghraib prisoner photos; etc. Entirely related are questions about 'reliability' - the truth - of non-canonical sources, such as those of the internet.

Social-interactional: genres and generic types:

Since the 1970ties there has been an ongoing and increasingly far-reaching blurring of the boundaries of **genres and generic types**. Learning / teaching materials produced for schools are no exception to this; here the boundary between genres of work and entertainment/leisure has been effectively erased.

Power, authority / authorship and convention:

Where previously 'convention' (the sedimentation of social power over time) could ensure adherence to practices in the domain of representation (as in others), for

instance, in what form canonical knowledge should be represented – whether as image (as diagram) or in writing (as report) – or what should count as official knowledge, now these frames have virtually disappeared in many domains, including in the domain of formal education.

All this demonstrates **an absolute need for (a curriculum of) 'navigational aids'** in relation to text-making, reading, sources of knowledge/information and means of discernment / discrimination between materials from a wide range of different sources.

IV A theoretical frame for new educational thinking: Rhetoric / Design / Production

One essential requirement for future oriented visions for Education is the bridging of the processes active and valued in the world outside the school and those processes active and valued inside the school.

In a world of meaning (the semiotic world) and values (the ethical world) marked by instability and provisionality, every event of communication is in principle unpredictable in its form, structure and 'unfolding'. The absence of frames requires of each interactant on each occasion an assessment of the social relations which obtain and of the resources available for shaping the encounter. This demands a rhetorical approach to communication rather than the prior approach of *competent performance*, where inwardness with 'grooved convention' was sufficient for competent communication. The **rhetor** has to make an assessment of all aspects of the communicational situation: her/his interests, the characteristics of the audience, the needs of the issue at stake, and the resources available for making a representation and for its dissemination.

The model of communication required for full participation in the new media world is one in which the **rhetor** has interests, is aware of the resources available for designs to put these interests into the world, understands the audience and its characteristics and also understands what the matter to be communicated demands. This becomes the basis for **designs** to shape these ready for their production / implementation. A rhetorical approach incorporates the tools of critique and moves beyond them. A rhetorical approach is essential in the presence of choices in representation, a feature of the multimodal world of communication.

Designs meet the interests of the rhetor (often the same person) in full awareness of the communicational potentials of the resources available in the environment: design gives shape to the interests of rhetor and designer in the world.

Production is the implementation of **design** with the resources available in the world in which the communication will take place. In production, meaning is made material and can become subject to review, comment, engagement and transformation. **Production** happens both in making of messages and in their 'remaking' in someone's engagement with and transformation of that message. **Production** is semiotic (form as content) cognitive (content as concepts) and affective (always reflecting interest and personal 'investment').

A rhetorical approach is based on the agency of maker and re-maker of messages. It has direct implications for **knowledge production**. Knowledge is shaped in representation according to the potentials of modal affordances; the process of representation is identical to the shaping of knowledge. The maker of the representations shapes knowledge.

In this conception, knowledge production is part of the new social and semiotic structures/organizations of **participation**. That is, knowledge is *produced* rather than *acquired* – the latter being a relatively passive, non-agentive conception of the relation of knowledge, learning and individuals.

The new, participative sites of appearance and dissemination of messages and knowledge – *youtube, facebook*, but also eg non-legitimated sites created by graffitiartists – are an integral part of the new media landscape, with their specific distributions of power and agency in communication. Education has to come to terms with, accommodate to that world and attempt to understand and use its practices where these are appropriate.

Given the new, and changing, environments for learning – multimodal representation, participative production and 'sites of appearance' - learning takes new routes in content, form and social engagement. This shapes what is learned, processes of learning and social/individual dispositions. This is a matter of **designs for learning**: the shaping of routes and environments of learning and therefore of forms of cognition. It shapes cognitive processes and shapes what dispositions become habituated.

In that context current **forms of semiotic production** - downloading, mixing, cutting and pasting, re-contextualization -- need to be thought about seriously to understand what forms of meaning, what dispositions, what facilities and what forms of identities are at issue. All the processes, categories, materials ('literacies') which are involved need to be considered for their specific effects and potentials in this, especially in relation to **structures of participation** as well as their effects on forms of identity.

Semiotic resources: "literacies" and processes

In the 'mono-modal world', in other words, a world with one kind of resource, reflection on the potentials of the resource did not arise. Language was what there was, and it was regarded as fully capable of dealing with all meaning.

In a multimodal communicational world, two questions arise: about the 'aptness' of the means; and about complexes of different modes for achieving complex requirements and tasks. Some instances of commonly used modes are speech; writing; image – still / single and moving / multiple; 3D models etc; colour; gesture and other movement; etc. Each of these offers quite specific potentials and is therefore in principle suited for specific representational / communicational tasks. In most forms of communication several of these modes are used together in modal ensembles, where each mode has a specific task and function.

Such ensembles are based on **designs**, selections and arrangements of apt means for making a specific kind of 'message' for a particular audience. **Design** is the process whereby the meanings of a designer (a teacher, a public speaker, but also, much more humbly, everyday conversation) become 'messages' of a particular kind. **Designs** are the implementations of (rhetorical) purposes and as such are the instantiations of choices of many kinds.

Design rests on the possibility of choice – this could have been chosen rather than that, so that there is a need for describing **style** as the effect of a series of choices, and for a process that deals with the cultural / social evaluations of style, in other words an **aesthetics**. Socially and pedagogically, **aesthetics** can be seen as the politics of style, **style** as the politics of choice and **ethics** as the politics of evaluation.

V "Education": new sites, conditions and forms of learning

"Communication as the social glue holding the show together"

In the fast changing social and technological world one of the foremost questions is 'what remains constant?'. The profound change in educational aims is that from Education viewed as an institution for the reproduction of culture, by means of shaping the new generations in the image of the existing culture – **Education as a socially conservative institution**; to Education as a means of shaping new generations and a new culture – **Education as a socially transformative institution**.

Clearly, in times when the day after tomorrow will not resemble today let alone yesterday, the former goal cannot remain. Yet what does remain is that 'Education', as a social / cultural institution, still has the task of **making available those resources which are judged necessary / essential for full future participation of 'learners' in their present and future social lives**. The new emphasis on the agency of learners does not however mean that the society does not have important cultural goods to pass on. In the case of 'the young' the focus will remain on resources which have been developed in their cultures often over millennia, 'knowledges' / information, values, practices and processes. These will need to be made relevant and mediated in ways that reveals their significance for learners now. In multicultural societies, the shared cultural resources need to be brought

into focus and principles for understanding and use developed. In the case of those who are learners in other phases of their lives the focus will be on 'knowledge', values, practices and processes deemed as essential or beneficial in their lives.

It is essential to separate the institution of 'Education' from specific (physical/material) sites and (life-)phases: whether of the 'school' as material site, or as linked to a life-phase. Equally it is important to distinguish 'learning' and 'school': learning happens at all times and everywhere. Education however is an institution where principled selection, preparation and design of matter to be learned in interested engagement is the issue: the design and production of sites/ environments/occasions of learning deemed essential in their society.

Where there is an entire difference between now and then is in the position of learners and learning. A rhetorical framing for Education demands that the learner is at the centre of designs for learning.

Forms and practices of assessment

There remains the question of evaluation and validation of learning. This has two aspects:

With the learner's interests at the centre, present forms of assessment – by and large focussed on authority (the curriculum, the teacher) and with metrics designed to measure achievement in those terms – are no longer relevant. Instead, forms of assessment will have to start from the perspective of the learner's central, productive and participatory and 'interested' position, so that ***an evaluation of principles of design, of principles of learning as transformation***, eg become central.

The School as site: sociality and community

As physical site the school is first and foremost a social entity: it brings together a large number of individuals in particular kinds of relationships. Although that is not part of its overt curriculum, a major part of its function is the practical task of teaching 'sociality': the means, practices and forms of social living. In a period of social (and other) fragmentation this is a major reason for preserving the school as physical site and community. Young people will no doubt form communities of different kinds – including those based on the new media – and learn their rules of social interaction. It may well be that at the moment and for some time to come, when many other social forms cease to exist, the experience of living in constant proximity, and dealing in face to face interaction with a large diverse group – not via the escapisms of virtual worlds – will not just be desirable but socially essentially.

It is not fanciful to see a progression from fragmentation and the dislodging of individuals from social bonds as forming part of a chain from social fragmentation /dislodging ==> individualism ==> individuation ==> social isolation. The social consequences and costs of that dynamic are already becoming visible. In a period where social pathologies are threatening to increase – aided by certain characteristics and affordances of the contemporary media – this is a major consideration.

Mobility and portability

A topical concern is that of mobile learning. While this is primarily an expression /effect of social changes (eg instability, provisionality) it tends to be articulated in terms of the affordances of currently available technological devices (hand-held devices, the mobile phone and its affordances).

Mobility seemingly offers a solution to a range of problems – more effective use of human resources (teachers) as well as a seeming answer to the problem of the school conceived in traditional terms. Above all it seems to offer a path away from the alienation from school of many – predominantly male – students. If technology is portable it offers the possibility of dealing with the seeming problematic physicality of the School and its lack of attractiveness to many students.

It is essential to subject the metaphor and the reality of mobility to searching scrutiny. There are profound questions about what a serious meaning of 'mobility' is: who or what is mobile? What is portable? And in what ways are portability and mobility a social, pedagogic,

affective or cognitive 'good'? What time for reflection is allowed in a world of constant accessibility/availability and also constant surveillance? What vision for Education is entailed? Is the personalized curriculum another instance of social fragmentation and disintegration, or is it a covert means of dealing with notions such as 'differential ability'?

VI Summary of issues and questions

1 Social and economic trends

- The trend of power from state to market: from citizen to consumer.
- Social fragmentation fostered by globalized, niche-markets.
- Continuing move from *class* to '*life-world*' (variable clustering of social factors and resources, such as education, gender, age / generation, ethnicity, regionality).
- A shift from 'vertical' to 'horizontal' structurings of power, from hierarchical to ***participatory relations***. It is highly likely that this move will increasingly be contested.
- An Education-system – or institutions within that – which increasingly will need to take its stance towards these social trends: in support, in rejection, in accommodation or by seeking to develop alternative positions.

2 Changes in the media landscape

- Media technologies with ***affordances*** for ***participation***.
- Media technologies which offer ***multiple functions, ubiquity, convergence and connectivity***.
- *Media simultaneously global and local in 'reach'*, and an obliteration of that distinction.
- ***Contents*** which are ***both global and local***, with a blurring of that distinction.

3 Changes in literacies: semiotic resources and processes

- A world which will ***increasingly be multimodal*** so that communicational potentials of modes need to be fully understood and processes of design are essential.
- ***Forms of knowledge production***: 'Knowledge' and text have to be seen as entirely linked. Emblematic is the concept of *user produced content*.
- ***Forms of text making***: Increasingly little concern about questions of 'authenticity', authorship, in *downloading, 'mixing', cutting and pasting, 'sampling', re-contextualization* etc.
- ***Blurring, dissolution, abolition, disappearance of semiotic boundaries***.
- ***Power, authority / authorship and convention***: weakening and disappearance of 'convention' (and its frames) as guarantor of adherence to practices and forms of canonical and official knowledge, including in the domain of formal education.

The combined effects of these for Education:

Above all ***an absolute requirement for a curriculum of 'navigational aids'*** in relation to text-making, reading, discernment and discrimination. That is, a curriculum founded on principles of judgement and evaluation in ethical and aesthetic issues as an essential response to market principles of 'choice'.

The new ruling metaphors: ***production*** and ***participation*** and effects on curricula and pedagogies;

the move from ***critique*** to ***design***: which positions learners as agentic, as designers and re-designers based on their 'interest'.

The assumption by learners of ***agency in participation*** and ***connection***.

The ***bridging of the gap of school and 'world'***, of processes active and valued in the world outside the school and those processes active and valued inside the school.

VII 'Afterword'

'Pace'

Economic, political and above all technological developments each have their own 'pace'. At the moment there is a fashion of valuing 'speed' – an assumption that slowness is boring. (It is said that a selling point of whiteboards for schools was an increase in pace.)

The real question is 'what is a human pace?' 'what is it under different conditions?' 'When is a slowness of pace essential?'

What possibilities of real reflection need to be built into the curriculum?

The pace of technological change cannot be mirrored by adaptation of social institutions, such as Education, and the question is what that relation should be. We cannot hope to mimic change brought by every technological innovation, nor should we. Social aims and purposes should precede.

'Seriousness'

The 'young' crave challenge and will seek it if they are not offered it. That speaks for the need to construct curricula which offer serious challenge.

The need for apt metaphors

Metaphors provide (often invisible) guides to thinking. It is essential to have metaphors which fit the ostensive purposes of the visions for education. For instance, in relation to learning seen as an active engagement with the world, *not* acquisition but transformation, *not* consumption but production.

1) **Summary of big issues** 18 -50 years
set out in paper

2) **Overarching questions**
set out in paper

3) **Disciplinary domains needed**
Pedagogy / didactics; interface of sociology and pedagogy

Sociology; sociology of diversity / equities;
sociology of new technologies; sociology of risk (society)
Ecologically oriented sociology / cultural studies

Cultural studies; cultural geography

Literacy studies

Social semiotics and multimodality

(social) psychology; (cognitive) psychology

Economics (/ sociology) – studies of economic/cultural/political trends in globalization

Professional communities

4) **How such questions might contribute to fresh thinking about nature role organization of education**

Attempt firmly-founded 'blue skies' thinking. The real question is: how else can change be imagined, let alone achieved?

5) **Educational research or practice community to be engaged in the development of the challenge**

Practitioners and particularly from professions other than education – eg medical 'training'/education

Donna Alverman Georgia Institute of Technolgy, USA Literacy studies

Sharon Ainsworth University of Nottingham Psychology and learning

Ben Bachmair University of Kassel Sociologies of learning with new technologies

Ulrich Beck University of Munich / LSE Sociology of the risk society

David Buckingham Institute of Education / London Knowledge Lab Media, young people, learning

Caroline Daly Institute of Education/ WLE (Centre of Excellence Workplace learning)

Professional communities in online learning

Jim Gee University of Arizona new conceptions of learning, learning and new technologies

Anthony Giddens LSE social – economic trends in globalization

Henry Jenkins MIT Media Lab Cultural studies of new media

Carey Jewitt - LKL New technologies, pedagogies and learning

Ken Jones University of Keele Education Policy and History, especially in a pan European context

Mary Kalantzis, Bill Cope College of Education University of Illinois
new pedagogies new curricula (original instigators of the New London Group – multiliteracies)

Diana Laurillard Institute of Education / LKL e-learning

Sonja Livingston LSE Media and young people, in a European perspective

Alan Luke UTQ education in a globalizing world; the role of Asia

Rose Lukin Institute of Education / LKL ecologies of technologies, schools, learners

Jackie Marsh Sheffield University Literacy, Media and learning

Gemma Moss Literacy Studies Institute of Education
Norbert Pachler Institute of Education/ WLE 'mobility' and learning
Roger Saljoe University of Gothenburg forms of cognition
Staffan Selander University of Stockholm Centre of DidaktikDesign educational design
Mike Sharples University of Nottingham Mobile devices and learning
Pippa Stein University of the Witwatersrand Education and Diversity
Brian Street Kings College London Literacy Studies

6) **Methods needed to generate robust evidence**

extrapolation from present trends; examination of *leading* present practice (**not** 'best practice'); interviews with opinion-shapers

7) **Methods used to identify future uncertainties**

interviews with opinion-shapers; 'Delphi method'

Two questions:

What of the now present condition could/would have been / was predicted in 1987?
and

What actual effect have political, social, economic, technological changes since 1987 had on the school and its practices? Why and how? Why and how not?

8) **How to focus the work on areas of greatest potential interest and greatest added value**

Attempt focus on meta-level issues in the social/economic domain and project/extrapolate to educational consequences/effects

9) **Breakdown of tasks and timelines**

tasks: in each challenge area identify five individuals to take charge of five identified issues; reporting relation of these to challenge lead; replicate this at the level of the challenge; integrate / mesh with meetings of the Expert Group

timelines: mesh tasks at each level to integrate with Expert Group meetings and expected goals aims for each meeting

10) **Individuals centres institutions to be approached to be engaged in the process**

see 5) above; possibly add MIT Media Lab (Henry Jenkins eg)

11) **Credibility of work to key project stakeholders ministers policy makers wider academic community**

Problem: political interests, and time-frames, do not usually mesh with actual givens of the social world – see the enormous lead-times for potential action on global warming. Best that might be achieved is to set clear frame, with sufficient 'bite' to attract real debate.

Credibility – rather than acceptance - will rest on the standing of people / institutions involved. Ensure that there is sufficient strength and resources to sustain follow up

This document has been commissioned as part of the UK Department for Children, Schools and Families' Beyond Current Horizons project, led by Futurelab. The views expressed do not represent the policy of any Government or organisation.