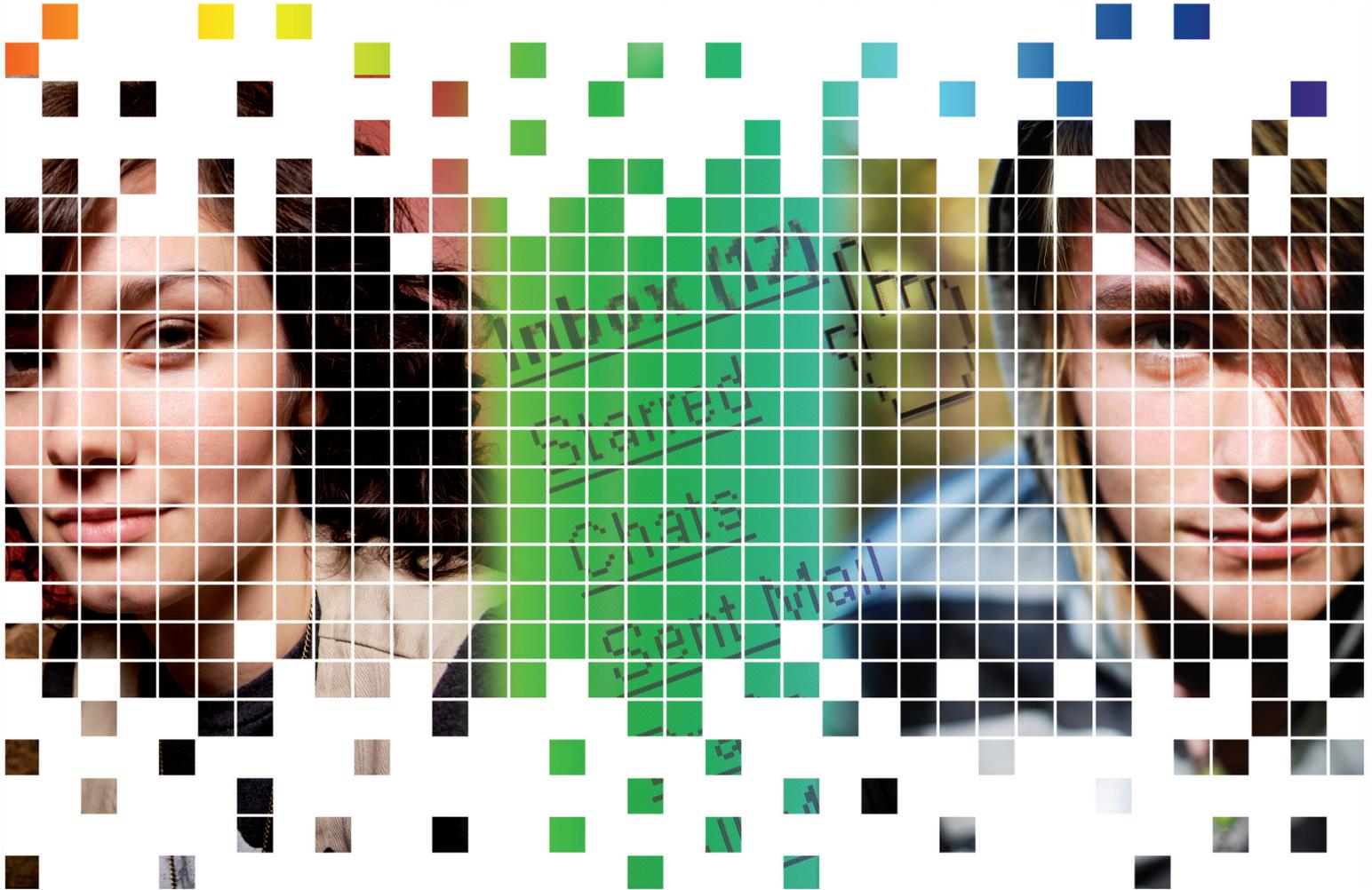


Digital literacies:

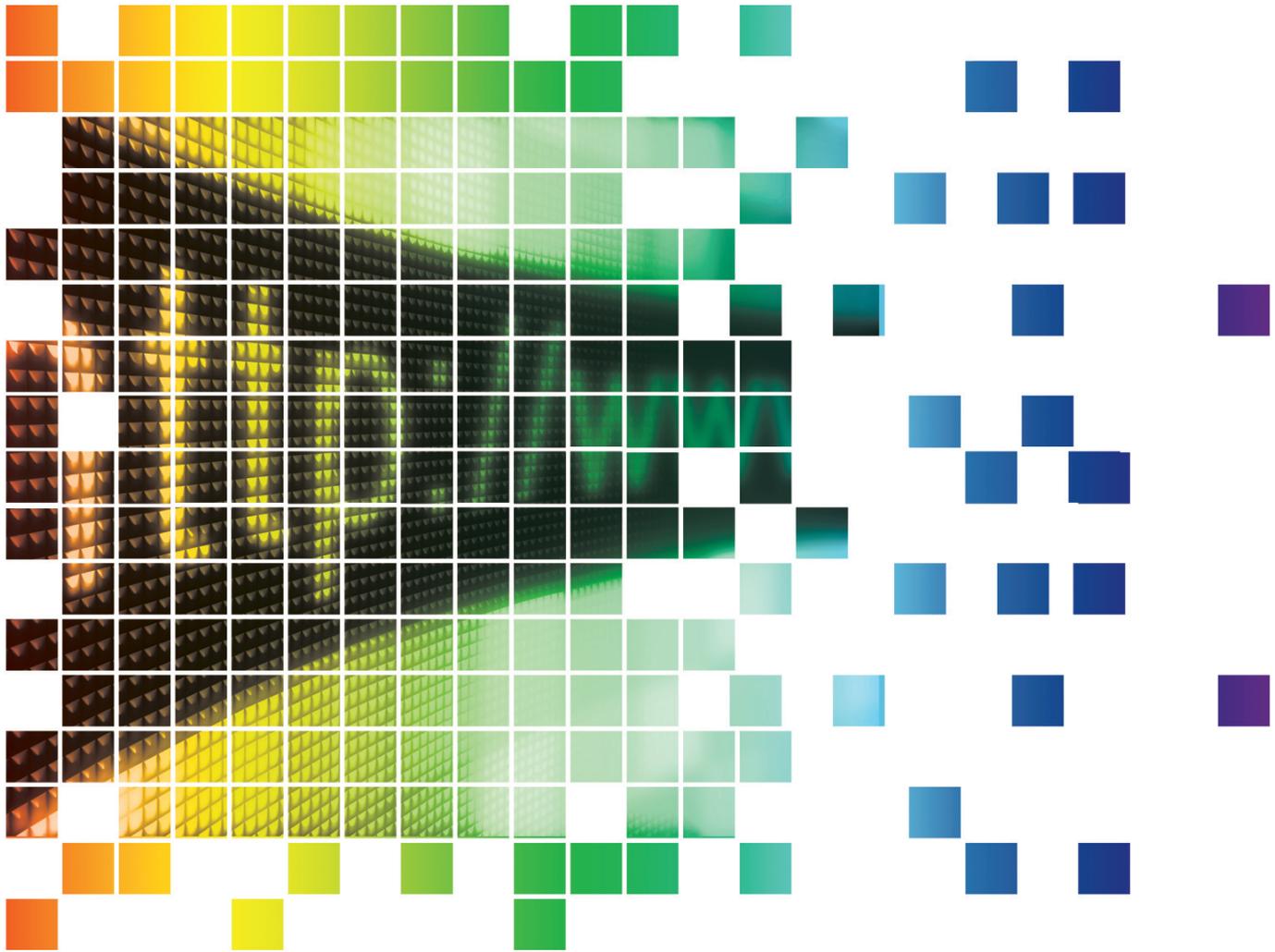
Tracing the implications for learners and learning

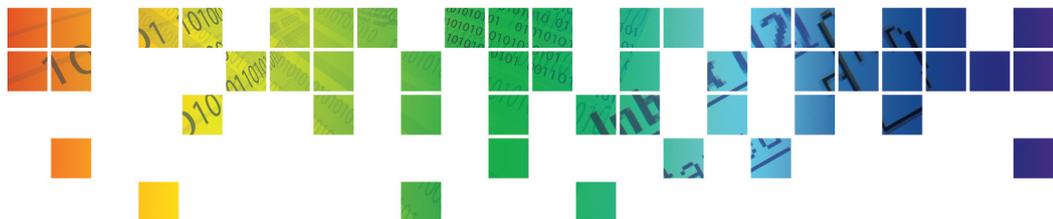


The third of four reports in the ESRC Seminar Series:

The educational and social impact of new technologies on young people in Britain

Report of the seminar held on Tuesday 21 October 2008
Graduate School of Education, University of Bristol

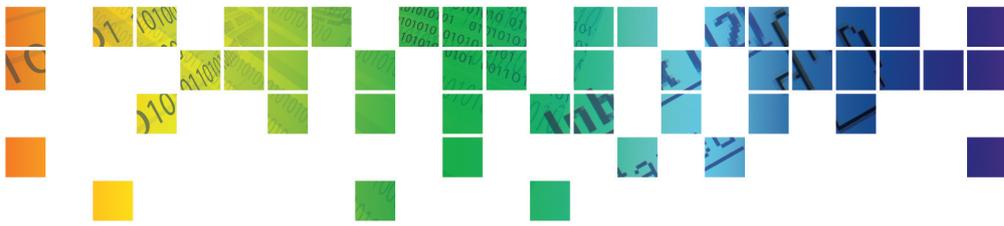




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Executive summary

This is a report on the third of our series of seminars, funded by the Economic and Social Research Council, to examine 'The educational and social impact of new technologies on young people in Britain'. Its purpose is to bring together academics, policy makers and practitioners from many different backgrounds in order to consider the contexts and consequences of use of new information and communication technologies for children and young people, with a particular focus on the implications of technological change of formal and informal education.

The first seminar scoped key theoretical frameworks, focusing on questions of age and development, on social approaches to technological change, and to diverse notions of learning. The report, titled 'Theorising the benefits of new technology for youth: Controversies of learning and development', can be freely downloaded from <http://www.education.ox.ac.uk/esrcseries/home/index.php>.

Seminar 2 concerned questions of space: we were interested in learning environments, seeking to understand how changing spatio-technical arrangements are affecting the learning environment in the classroom, school, home and community. The report, titled 'Changing spaces: Young people, technology and learning', can also be freely downloaded from <http://www.education.ox.ac.uk/esrcseries/home/index.php>.

In this third seminar, titled 'Digital literacies: Tracing the implications of learners and learning', a lively group of academics, educators and policy makers gathered at the Department of Education, University of Bristol to discuss three stimulating papers addressing the burgeoning debates over digital (or information-, cyber-, new media or other) literacies and competences that, supposedly, especially characterise today's generation of children and young people.

The first paper, appropriately, served to ground the academic and policy discussion in children's own experiences. Chris Davies, from the University of Oxford, has spent recent months interviewing children at UK primary and secondary schools to hear what they have to say about the possible benefits and problems of using diverse forms of information and communication technologies in school. In this paper, he compares and contrasts children's experiences with the ambitious if somewhat ideal specification of the key elements or skills of digital literacy outlined by scholar Henry Jenkins of MIT in his work for the MacArthur Foundation. While the latter provided some valuable analytic criteria with which to interpret children's reflections on their practical 'literacies', the scare quotes must remain firmly in place: for Chris Davies concludes, although there are indeed promising signs that a 'self-managed participatory culture' is emerging, 'this is still a long way removed from evidence of a true process of developing new media literacies'.

The second paper, by Gunther Kress, from the Institute of Education, took the seminar back to first principles by inquiring into the very nature of communication – what resources does it require? what are the environments of learning? what is really meant by literacy? Beginning with some theoretical reservations about the concept of literacy, Kress widens the frame to examine what he calls 'cultural technologies of transcription'; to be sure, writing is the most familiar of these, but this can be broken down into writing using an alphabetic script or a character script for example; meanwhile, there are other technologies altogether – notably the visual, the multimodal, indeed also the oral. To understand each, and especially to understand the implications for those who learn, we must understand the technologies that record and reproduce

what has been transacted. As he says, 'every technology of transcription has potentials and limitations, speech and writing not excepted'. Kress concludes by centring the analysis of literacy not on the expertise of the teacher but the interpretative motivations of the learner, a salutary conclusion for those who treat literacies as a set of demands against which learners must 'match up'.

Having studied youthful digital literacy practices across a range of formal and informal settings, the third paper from Kathleen Tyner, from the University of Texas at Austin, offered a wide-ranging survey of the rapidly-evolving conditions under which new technologies are used and negotiated. Linking digital literacy to social capital, she is especially interested in the diverse benefits that gaining new skills may offer young people as well as the costs it poses for those who do not learn these skills so effectively. Beginning by scoping the research agenda that such study demands of the academy, Kathleen Tyner also emphasises the 'strategic uses' of technology by children – for they also need to escape the constant surveillance enabled by ubiquitous computing, especially surveillance by parents and teachers (though adults also worry about commercial surveillance). Other downsides, as she notes, include the avalanche of misinformation, the moral panics associated with new media, and the more mundane frustrations of getting the technology to do what you want it to do.

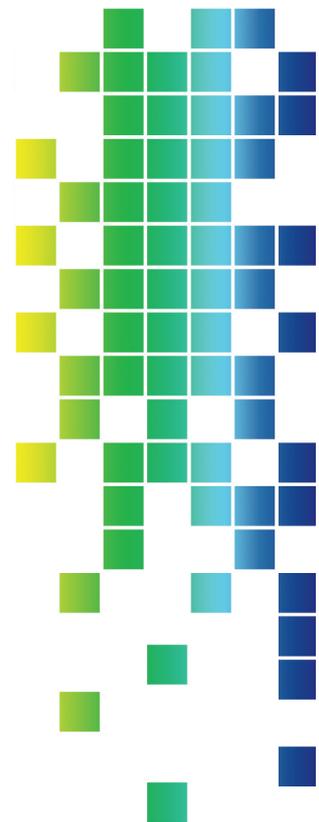
Each of these three papers stimulated lively discussion among the seminar audience, which we have captured briefly in the discussion summaries that follow. Many of these points were then developed by the final panel session of the day, chaired by Keri Facer and including Rosamund Sutherland, Julian Sefton-Green and Shelagh Wright. A summary of

the points they raised appears at the end of this report.

The series will hold its fourth and last seminar on 2nd March 2009 at London School of Economics and Political Science, entitled 'Digital identities: Tracing the implications for learners and learning'.

The series will conclude with a conference on 14th July, 2009 at the University of Oxford. Interested participants should contact Lisa Currie at lisa.currie@education.ox.ac.uk or visit the project website.

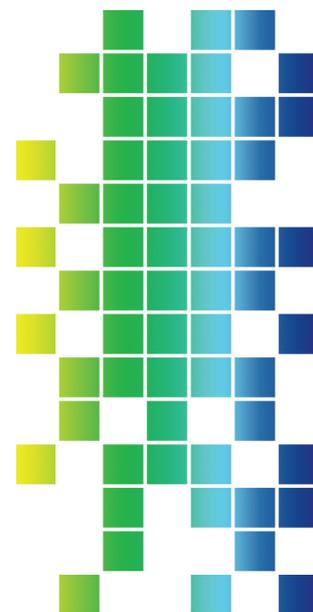
The series is coordinated by John Coleman, Ingrid Lunt and Chris Davies (University of Oxford) and Sonia Livingstone (LSE), together with Keri Facer (Manchester Metropolitan University) and Neil Selwyn (London Knowledge Lab).





Introduction

Rosamund Sutherland, Graduate School of Education, University of Bristol



Being asked to write an introduction for this seminar, I thought it would be helpful to explore how the papers that were presented relate to my own personal experiences as an educator, as a parent, as a grandparent and as a learner. For the last 25 years I have been researching young people's learning with digital technologies. My early research on the use of Logo coincided with my own children attending a primary school in Hertfordshire, a school that was participating in the Chiltern Logo Project. Not only did Joanna and Andrew learn Logo, but they also attended an open plan primary school which was similar to those described by Kathleen Tyner in her paper. The building was not divided into classrooms, but into a number of specialist areas for different activities. I am absolutely sure that they benefited from this 'open' education. Joanna is now an architect and we often discuss school design and have recently written about the relationship between learning and the design of space. By contrast nowadays I am involved in a new academy in South Bristol. Here the literacy and numeracy levels of the young people when they arrive at secondary school are appallingly low and the proportion of young people attending Higher Education from this community is amongst the lowest in the country. As an educationalist I believe that schooling can make a difference and I am shocked by the contrast of the relatively privileged state education of my own children and the education of the young people in South Bristol. Hopefully this will change with the opening of the new academy and other developments in Bristol.

Thinking about this contrast has a powerful effect on me because I know that my own great grandmother was illiterate; she left a thumb mark on her marriage certificate instead of a signature. I also know that my own life would have been very different if I had not learned what Gunther Kress calls the 'cultural technologies of transcription'. This included learning to programme a

computer when I was at university in the mid 1960s. Thinking about this contrast leads me to constantly question many of the rather learner-driven views about schooling expressed in these papers, that I would otherwise be inclined to agree with. The tension or paradox for me is how can we both value and respect young people's out-of-school learning and literacies, whilst at the same time recognising that personalised or learner-driven education could disadvantage those who are already the most disadvantaged. I believe that we need to attend to these tensions, put them on the table as it were and work with them. Otherwise the rather utopian vision that is accompanied by digital technologies is too seductive and somehow never engages with the on-the-ground issue of how can we make sure that all young people leave school with the know-how that will enable them to participate fully in society.

This tension relates to a desire to both respect and challenge within an educational system. Here the work of Sennett (2003) is helping me to appreciate that respect relates to 'accepting in others what one does not understand'. He argues that in acknowledging that you do not understand someone you grant them their dignity and their autonomy. He also suggests that mutual respect has to be negotiated and 'this negotiation engages the complexities of personal character as much as social structure' (p 260). Here the words 'negotiation' and 'mutual' seem to resonate with the suggestion by Chris Davies that through out-of-school engagement in new digital media young people could be shifting their attention from individual expression to community involvement. The question for me then becomes, how can schooling introduce young people to new community involvements that they would be unlikely to bump into out-of-school?

Sennett R (2003) *Respect in a World of Inequality*, Norton & Company, New York.



Digital Literacies: A view from young people

Chris Davies, Department of Education, University of Oxford

This paper is the second occasion in this seminar series in which we hear from young people about how they interact with technologies in their lives and learning. The perspectives that I am presenting today are drawn from a project we have currently with Becta, looking at young people's experiences of technologies away from formal education, especially in the home. Some of what we have heard from the young people in our research inevitably touches on issues of digital literacies, although this is not a topic we have explicitly set out to explore.

In preparing this paper, I looked in particular at what Henry Jenkins and his colleagues discussed in terms of digital literacy within a participatory culture, in their 2006 report for the MacArthur Foundation. In that report they state their intention to move beyond questions of technological access to consideration of 'opportunities to participate and to develop the cultural competencies and skills needed for full involvement' in the new participatory culture, which they see as shifting the focus of new media literacies from individual expression to community involvement (Jenkins et al. 2006:4). The skills they list provide, at the very least, fresh and challenging ways of thinking about what our respondents tell us, especially in terms of new media literacies. The Jenkins report articulates these skills as follows:

Play – the capacity to experiment with one's surroundings as a form of problem-solving

Performance – the ability to adopt alternative identities for the purpose of improvisation and discovery

Simulation – the ability to interpret and construct dynamic models of real-world processes

Appropriation – the ability to meaningfully sample and remix media content

Multitasking – the ability to scan one's environment and shift focus as needed to salient details.

Distributed Cognition – the ability to interact meaningfully with tools that expand mental capacities

Collective Intelligence – the ability to pool knowledge and compare notes with others toward a common goal

Judgment – the ability to evaluate the reliability and credibility of different information sources

Transmedia Navigation – the ability to follow the flow of stories and information across multiple modalities

Networking – the ability to search for, synthesize, and disseminate information

Negotiation – the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms. (2006:4)

This particular representation of skills does resonate with some of what we have heard from young learners; for instance, in what they say about the experimental and problem solving ways (characterized above as play) in which they appropriate and operate technologies for their own needs in an experimental and problem solving spirit:

OT *As you go along, just work out [...] Just like, play it by ear I guess. See stuff and you go, oh what does that icon do – trial and error really. [male yr10 Sec2]*

CR *Use technology? I don't know. Pretty... I don't know it just seems easy, it's just like press stuff and it works. [Interviewer: Yeah? So you work it all out*

¹Jenkins et al. 2006 Confronting the Challenges of Participatory Culture: Media Education for the 21st Century. MacArthur. p.4)

'We caught glimpses of behaviour that come near a communal engagement with media literacies'

yourself?] CR *Yeah, yeah work it out. [male yr10Sec2]*

I go onto Word I sort of like click stuff that I've never clicked before and I see what happens and I sort of like experiment things on the computer. [female yr4 Prm1]

AC *We just learnt on the go really. [male yr10 Sec2]*

On a few occasions we caught glimpses of behaviour that come somewhere near Jenkins et al.'s characterisation of a more communal context of engagement with media literacies. It is possible to see something of what they say about performance as a process of adopting new identities for the purpose of improvisation and discovery in this girl's description of moving from providing a service to friends towards creating an identity for herself as a creative artist:

JB *some of my friends [...] they'll be like, oh can you set this in black and white, and like get rid of my spots and stuff. And it's just like really easy to do ... you can make it lighter and darker so it looks like more paints, because I'm quite into photography but I haven't really done that much. Because like when it snowed – do you remember that day – and then I took loads of photos and I could then get them all like... and they're like light and dark and it looked really good. So yeah, I'm quite into that, because I have like this account on this thing called DeviantArt and it's like a big art thing and you can do... and everyone's got a page on it and like just upload all their art. And you can just like look at it all and it's like a really, really nice club, it's not just like... and it's anything you want, it can be like a drawings um photographs, anything you want. So it's like really, really good. [female yr10 Sec2]*

Whilst we encountered a great deal of *networking* at some level, there was little

evidence that this involved any substantial degree of synthesis and dissemination of information: what takes place is more about socializing via minor acts of dissemination over well-established networks:

DH *I've got a phone, I've got an Xbox 360, I've got TV I've got um... I think I've got a stereo and everything; I've got loads of things. [...] Text. It's always text. Um, it's rarely I do talk on voice it's when I'm like getting... when I'm like talking to them at a party or something like that it makes it a lot easier. And um I use my phone for taking pictures, taking videos, sending pictures, sending videos. Um, going on the internet occasionally, because you can go on the internet by phone. And um that's about it. [male yr10 Sec2]*

Understandings in relation to *judgement* seemed quite hit-and-miss, even though the young people generally were aware of the need to make judgements about the trustworthiness of information on a regular basis:

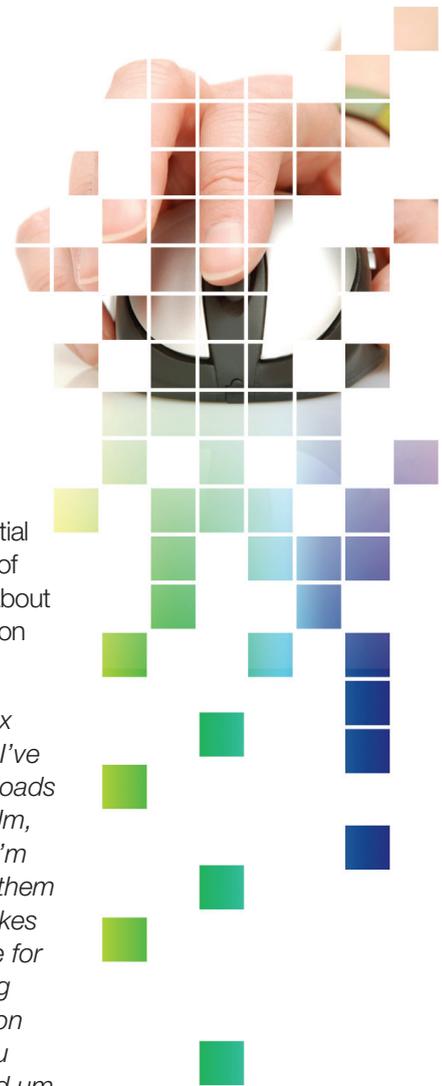
Int *And how do you know which is the most useful thing that comes up?*

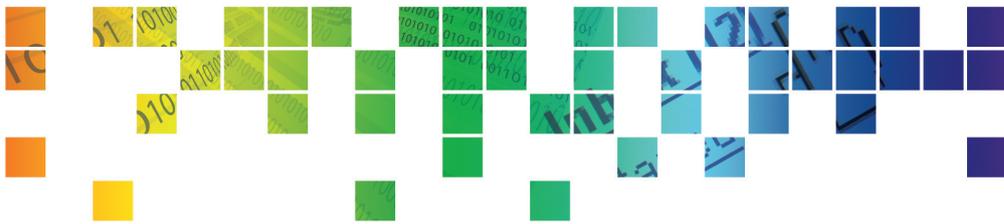
AM *The most attended I think. Or like a famous engine like, Wikipedia or something like that.*

Int *Then you just [...] you've got a sort of instinct to know whether what you've found is accurate or whether it's not?*

AM *Yeah well, basically you like read it and not just copy and paste anything. [male yr8 Sec1]*

This view of judgement is, in effect, somewhat extrinsic: reliability is judged by how convincing they can make something found on the Internet appear to a teacher – the young people are aware that many adults perceive Wikipedia and Google as unreliable, with virtually every youngster telling interviewers that they know they





should not trust these. Whether through their own better judgement or through pragmatism, Google searches form a central part of their strategy for online learning from a relatively early age:

MD *We type in 'what is zero degrees in Fahrenheit' and then you click on Web and then it will like [...] it will come up with different programmes and you click on one [...]*

Int *And you choose the one you want.*

MD *And there's like 1-2-3-4-5-6-7*

int *What would you choose?*

MD *I [...] it's usually the first ones the best, but it's not always. [male yr4 Prm2]*

But this a kind of procedural practice, rather than something approaching judgement in action. Another aspect of the judgement perspective is safety, about which young people had a great deal to say, due presumably to a large number of people talking to them about it, including what they hear from TV programmes and school assemblies on the subject. We have been seeing a fairly hyped-up anxiety about safety, especially in the younger ones (8/9 years) who sometimes tended to refer to the computer as the vehicle for a virus that might somehow attack them. The older ones were somewhat calmer, expressing the knowledge that they have to talk to adults about safety issues, even if this did not necessarily reflect what they really do:

IJ *I don't like [...] if I've got pictures of me, I don't really show [...] like show where I am and things like that, because we had an assembly about it, and it was like this girl and she had a school badge in her photo, and like loads of people could find out where she was and where she lived, and it kind of freaked everyone out. [Female yr8 Sec2]*

If judgement implies the capacity to use available knowledge in order to make good decisions in the face of new situations, it

would be fair to say that this was not a significant aspect of their mindset:

LM *I get advice from the school and my parents – just keep a bit safe, from them. Some of the advice is just not to talk to anyone but I think – if I can trust them, I think it's all right.*

Int *And what allows you to trust them?*

LM *Well if I've – if they've been with me on the [online] game for a couple of years, or ... or I've actually met them, then ... then I can trust them. [Male yr8 Sec2]*

If a reflectiveness was not a strong feature of their behaviour, energetic engagement with the affordances of being online certainly was. This was particularly apparent in the way that a large portion of the young people displayed a cheerful ease with the skill of *multitasking*, at least in the simple sense of being able to do a number of things at the same time:

CK *Bebo, MySpace, yeah and um You Tube, just looking up research for homework, a lot of homework on there, um music as well. Yeah and sometimes games as well when it's, you know, when I'm bored. [male yr10 Sec1]*

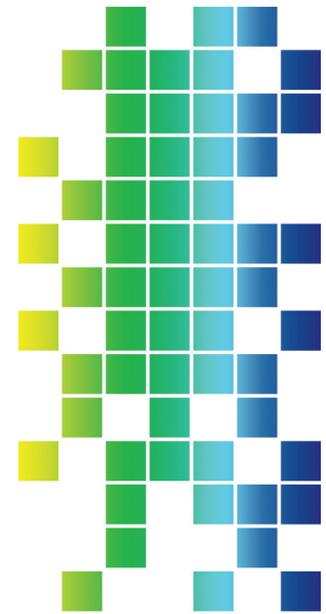
In addition, they report considerable evidence of the ability to manage multiple activities at the same time, and manage the concern of parents who are understandably anxious about the possibility that they are indeed multitasking in such ways.

Int *So are they like aware of anything you do with the computer or do they just think you work?*

OR *No they know I go on like MSN and that but they don't think I go on MSN while I'm doing the work.*

Int *So you have to keep it hidden?*

'There was little evidence of synthesis and dissemination of information – what takes place is more about socializing'



OR Yes. [male yr10 Sec1]

This picture is repeated many times in our own findings, with young people accentuating a very skilful conceptual management, making decisions about how to do things, recognising the risk, and managing parent's anxieties about those.

I'll always sign in even if I'm doing homework I'll always sign in just in case anybody needs to tell me something important. [male yr10 Sec1]

I don't go onto MSN that much because it annoys me when I'm trying to do something, even if it's not homework it will get annoying because I'm constantly having to write back to people. But it does sign me in automatically so it does get annoying sometimes. I do sign on but then I'll probably sign off. [female yr10 Sec2]

But can such skills be characterised as scanning one's environment and shifting focus as needed to salient details? To some extent, maybe, but the stronger impression the young people give in what they say is of a skilful responsiveness to the need to manage what they feel like doing in ways that allow them to continue to do so, rather than of a profound cultural shift in how they think about and engage with their world.

This is also the case with the notion of *collective intelligence*. Presumably this belongs right at the heart of participatory culture, and our own experience was discouraging in this respect. It is interesting that the MacArthur report begins by quoting Pew Internet American Life Project, saying that more than half of all teens have created media content. Whilst this may be true about American teens it certainly is not true about those we spoke with. A few of the limited examples we did find were about homework:

Int *What happens at home if you get stuck with anything ..?*

EB *Um, I normally talk to my friends on MSN about it all or just remember what I did in the lesson and just go back through it and stuff. Or just do it and then just do something at it and like try. [female yr8 Sec2]*

CW *I would go into MSN I think, because you can [ask] people about it, and they'll be doing it at the same time [female yr10 Sec2]*

So you can sort of send them sentences and they can tell you if it was right or not [female yr10 Sec2]

Int *And where did you get that advice to do that from? [...]*

SG *It's just all our friends do it, because generally one friend helps another set something up, and then there's like a chain so the one who has already set one up will just pass on the information. [Female yr10 Sec2]*

Using their digital connectivity to collaborate over their homework is a lot better than nothing, but there was far less of evidence of any kind of communal process of creativity and sharing. In terms of the eighty interviews reported here, we came across just this example:

CK *Yeah, me and my friends we sort of dance, so we put some videos of us dancing...*

Int *did you actually upload them yourself?*

CK *Yeah we did, yeah. We had um in our group we had somebody who does all of the recording and the uploading, everything, so he was normally the one who's uploading them onto Bebo and YouTube.*

Int *Okay. So you load them onto Bebo as well as YouTube?*

CK *Yeah, because not many... if you... on YouTube there are hundreds of thousands*



‘A number are able to articulate a good awareness of learning processes’

of videos, so um... so there's um... Um I think that um there's hundreds of thousands of videos on YouTube so the chances of somebody finding it on there is slim. So you put it onto Bebo, on your own webpage, so that your friends will come and see it, and then they'll upload it onto their Bebo, it's by one click, and then other people will see it and you'll become famous. We became really... we were known, just in town, we're just walking around and, you guys are the ones who ... then we started, you know, learning more dances and making whole choreography dances, going for competitions and we got really known. [male yr10 Sec1]

In fact, this is by far the nearest we encountered to what Jenkins is proposing as representing the new forms of culture of participation that young people are joining. Which is not to say that we did not encounter a predictably large amount of time spent in social networking via tools such as Bebo and MSN, but that degree of participation did not appear to be sufficiently close to what the MacArthur report suggests is taking place: ‘a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one’s creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices.’ To be fair, that report is largely talking about the problem of how to move towards such a cultural state, and perhaps

we can see some early signs here of such a shift.

The clearest signs were in where we did manage to hear of some form of networked behaviour, collective intelligence, distributed cognition, and perhaps appropriation also – in the complex and largely self-directed ways that young people talk of learning how to get the things they want out of the technologies available to them. Their strategies in this respect are wide-ranging, drawing a great deal on family support, peer support, experimentation and information seeking:

SR ... me and my dad and my little brother just like share little tricks that we've got. Like little shortcuts, how to do this, how to do this. So that's how I get such a broad knowledge, because I share it with other people. [female yr10 Sec2]

In this respect at least, a number are able to articulate a good awareness of learning processes:

Int Do you enjoy sitting there looking at it in front of the computer with him?

RR I do, I do.

Int Yeah?

RR It's quality time, you know... It is isn't it? Because he's always working and when he comes home you really want to talk to him about something but because he's got so much on his mind, like computers,



it's like you just feel that you can go join him in that life. [female yr10 Sec2]

SR I think that he's one of those people that has to learn for himself. He doesn't like learning from other people and their mistakes, he has to go out and make the same mistake himself, and then he'll learn from it so I think that [...] I think that I'm just going to leave him because I know how it is, when someone keeps interfering with you and how annoying that can get. So I'm just gonna leave him. [female yr10 Sec2]

RR she's [sister] asking how to do such and such, how do you start the text message, how do you add a number to the phonebook. And it's like I know and let her get on with it. Explore it for herself. Never take the fun out of exploration. [laughs] [female yr10 Sec2]

Conclusion

So maybe there are some first, developing signs here of something that might in time develop into a self-managed participatory culture. What we can see in the light of some at least of these the MacArthur report descriptors is the possibility that young people are experiencing some degree of increase in their control over how they pursue their own interests and their own social interactions. This is still a long way removed from evidence of a true process of developing new media literacies that is now taking place, but perhaps these skills are approaching the time when they might spontaneously propagate themselves across young peer groups, which actually is possibly a more realistic aspiration than this offered by the MacArthur report:

Schools and afterschool programs must devote more attention to fostering what we call the new media literacies: a set of cultural competencies and social skills that young people need in the new media landscape. (Jenkins et al. 2006:4)

Discussion from the floor

How did children respond to their parents' anxiety about safety issues associated with the internet? It seems that younger children shared this anxiety to some degree and so were ready to ask parental advice, but older teenagers sought to manage their parents, confident that they knew more than their parents and hiding any problems from them.

The next steps for this project are to examine how far the literacy skills being developed fit with those that future employers will value. But it seems that many of the skills gained are being developed in informal or home settings, and so are mainly social; whether this can support transferable workplace skills remains to be seen.

As the array of valuable skills expands, including many soft skills, as Jenkins terms them, the possible ways in which those who lack such skills may be disadvantaged surely also expands.

There are some skills not included in Jenkins' list which are, nonetheless, crucial to digital literacy – making design judgements, knowledge of production and ownership of content and platforms. But at least this discussion has widened the conception of ICT skills beyond 'learning Excel'!

So what *is* learning, actually? Social change, technological change and a continuing place for the school?

Gunther Kress, Institute of Education, University of London

In this paper I will say something on three issues: the issue of 'literacy', under the heading of 'Resources for communication: 'literacy'/literacies' or technologies of transcription?' I then discuss the issue of 'Environments of communication and environments of learning'; and will then say something about 'Learning and the recognition of learning' in terms of the frame developed under the first two headings. In a brief conclusion I will make some comments about the school and strategies for shaping its position in the near future.

Resources for communication: 'literacy'/literacies' or technologies of transcription?

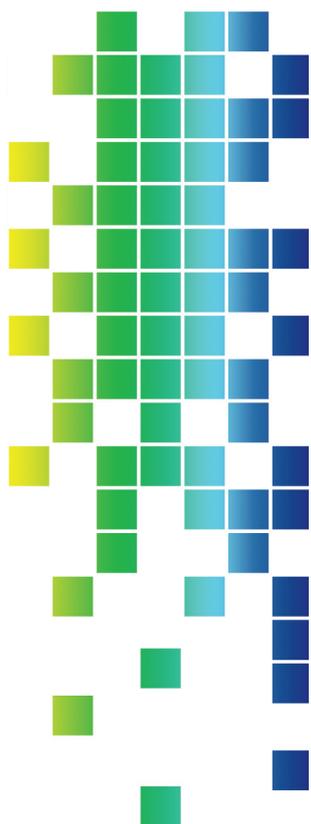
The topic of this series of seminars is one of the central issues for education; as it is for society generally. Unlike the other speakers today, and many members of the audience, I have done no research in this area. I think about *learning* and the *environments* for learning produced by digital technologies. I need to confess to misgivings about many uses of the term *literacy*. But, as the topic of this session is 'digital literacy', I will start by saying something about *literacy*.

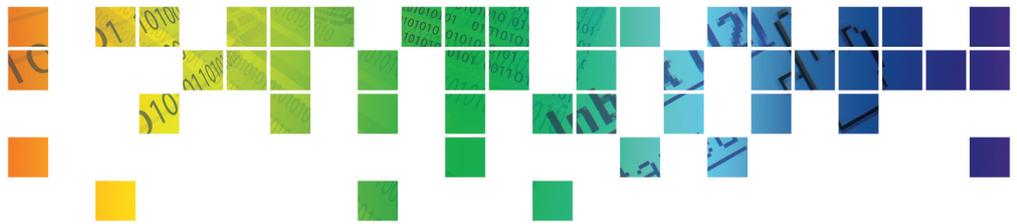
Most of us will agree that it is important to be as specific as one needs to be in the context in which one is researching, talking, writing. Each context requires tools of a specific kind; each needs its kind of data to answer questions posed. So maybe the first step is to ask: in what domain am I operating? Is it the that of politics, of public information and awareness raising? Am I addressing policy-makers or teachers, parents or journalists? Or am I attempting to produce

theory about a complex phenomenon by means of academic research?

Personally, I am after the latter, first and foremost: tools for understanding the inter-relation of resources of representation and forms of knowledge; of the effects of both in shaping environments of learning; and these in relation to the facilities, affordances, potentials and limitations of contemporary technologies of representation-production-communication. So instead of using the term 'literacy' let me try the term 'cultural technologies of transcription'; and suggest that 'literacy' names just one of many such *cultural technologies of transcription*. In one part, the problem then becomes one of describing the different *technologies for transcription* at use in a society and finding apt names for these. The other part of the problems is to develop full and adequate descriptions of these resources and their potentials in representation and communication.

We've been taught to think that *writing* has been developed to transcribe speech; we also know that that isn't the case, really. Here comes the first problem: in talking about 'literacy/-ies' are we talking about *writing* or about *script systems*? Alphabetic and character-based scripts both developed from image-based forms of *recording*; in the case of the alphabetic scripts, the image-script developed – among other things - into a means of transcribing (aspects only of) speech; in the case of character-scripts that route was not taken, or certainly not to anywhere near that extent. In any case, particularly in so-called 'literate societies', alphabetic writing is rarely used to transcribe speech: it can be, but that is a relatively marginal use. There is, of course, a constant semiotic trade between *speech* and *writing*,





and not only in forms such as texting, or MNS. Most of the time *writing* is used as a means of transcribing some phenomenon, event, object or idea in the world directly, not via the route of *speech*. The minutes of a meeting are not a *transcription* of the actual sounds of what was spoken but of the ‘gist’ of what was *transacted*.

With the concept of transcription come questions such as: what is (to be) transcribed; what is not transcribed; what can and can not be transcribed with any one *technology of transcription*? In other words, both the potentials and the limitations of transcriptional resources come into focus. We know that the alphabet does not transcribe intonation. At the same time we know that – in speech – intonation or hesitations, loudness or softness, pace or ‘tone of voice’ can be as important and at times more so than words in syntactic order. Every technology of transcription has potentials and limitations, *speech* and *writing* not excepted.

The digital media of representation/ production/communication facilitate the use of many such technologies of *transcription*: *modes* such as *speech*, *moving image* or *still image*, *writing*, *colour*, *layout*. Multimodal representation is possible at little ‘cost’; the affordances of multimodal representation are readily available for use in designs of environments of communication and of learning. In multimodal design one needs to ask specific questions about what is to be transcribed, what can be transcribed, for whom the transcription is intended. This requires precise tools and settled understandings of the capacities, the affordances and facilities of these tools. But more: we need to know about what kinds of meanings are made in the various cultures of our societies. Which of these meanings can or should be transcribed in what environments and by what technologies of transcription, by what *modes*? Do we

actually understand the meaning effects – ontologically and epistemologically – of different transcriptional technologies?

Even within ‘literacy/-ies’, the differences between an alphabetic script and a character script have profound meaning-effects. I’ll start with an example which I have used many times; it has been important for my thinking so I will use it again here.

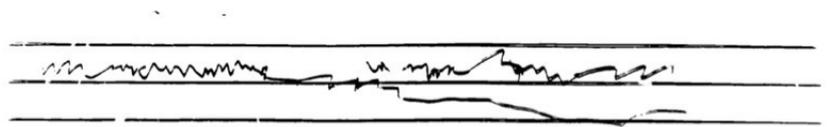


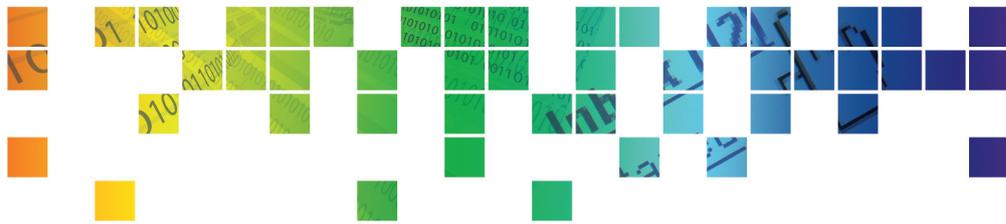
Fig. 1 alphabetic writing

This ‘writing’ was done by a three year old girl; at one level I see it as her attempt to make sense of alphabetic writing. From the perspective of learning I see it as a ‘sign of learning’. The ‘writing’ is displayed on a line; it has simple elements; some of which, seemingly, are repeated and some not; many of the elements are connected; the elements are in sequence; the writing has directionality. At the time I first used this in a talk someone who was doing a PhD with me said ‘oh, my daughter Sarah is also writing; I’ll bring you something she wrote’.



Fig. 2 character based writing

You can see the effect of the different script system immediately. It is differently organised; as with the alphabetic ‘writing’ it is a trace of *engagement* with a bit of the culture with



which the child has engaged. Of this example I would say: we are shown the complexity of each element; each element differs from the others, none are repeated; each element is separate; they are not connected; they are on a line; there seems to be directionality.

There are common features – display on a line; directionality; sequence; both were written from right to left – and there are features which are distinct. But there is another issue, at a more abstract level maybe, which relates to meaning and learning. It touches on the issue of the body and learning – *embodiment*. It relates to the actual *material, bodily*, production: the physicality of the placement of a letter on the line, movements of linking, the length of down-strokes and up-strokes, the shape of curves and lines. What is learned in these actions? Linearity, sequence, spatial disposition, limits of size and extent; but also notions of repetition, of the relative simplicity of the entities. What is learned includes how the hand moves which, in the case of the forming of a character consists of very different movements to those in the forming of a letter; the pen or pencil held differently; the hand not resting on the surface of inscription. In the case of the production of a character, there is the placement / balancing of the character in a square – which is actually present on the page in the early stages of learning, and later on is present only as an imagined square.

There is also – a different matter – the fixed sequence of strokes to be learned. Learning the fixed sequence of strokes in the making of the character entails the learning of a social order, also firmly fixed. The perfect balancing of the character in the actual or imagined square naturalises a specific framing of the world, just as the placement on the line ‘teaches’ and naturalises linearity, sequence and progression. In both script-systems there

is the learning of ontology, epistemology and social order.

My question is this: is ‘literacy’, whether as script or writing system, separate from other realisations of profound cultural meanings? Is it an accident that in cultures which use alphabetic writing we have representations of time, which show time as linear, sequential, moving in a particular direction? I want to illustrate some aspects of this issue on hand of a few examples which come from the research-work of Sean McGovern. He teaches English as a second language at a university in Japan. His interest lies in understanding the ‘deeper’ cultural organisation of the society in which his students have been socialised, in which they live; which finds expression in speech and in writing as well as in all other semiotic forms – images, gardens, forms of social interaction and practices, food, architecture. His assumption is that without a sense of that cultural organisation by both learners and teachers, the teaching of a second language remains at a problematically superficial level. He attempts to show how this organisation appears in different semiotic form, in different transcription technologies. In that view ‘literacy’, the script system together with the grammar and syntax of *writing*, are manifestation of this cultural and semiotic organisation. That organisation emerges in specific ways in different transcriptional systems, depending on the materiality of the resource in which a *mode* (as transcriptional resource) is realised.

Here, to frame this bit of the discussion, is an entirely usual Western time-line. My question is: is it an accident that in Sean McGovern’s data, the 21 year old students who were invited to draw their ‘biographies’, did not represent time in this manner but rather in a variety of forms which, in one way or another, are constructed around the notion



of 'centrality'? One of these, was titled 'The tower of time'.

The drawing is placed *centrally*; it is made from *modular* elements. It is not directional in the sense of Aristotle's arrow of time going from left to right. Experience is not represented as temporal but as modular; the tower is built of *modules of experience*. At the moment captured in the drawing, this person might be asking 'where does the next module of experience fit?' Experience, time and future are very different conceptions here to Western ones.

Here then are two more examples to illustrate the notions of *centrality* and *modularity*. Fig. 3 comes from an exercise exploring the highly abstract notions of 'dependence' and 'independence'. Both the notion of *module* and of *centre* (with modules clustered around) are present.

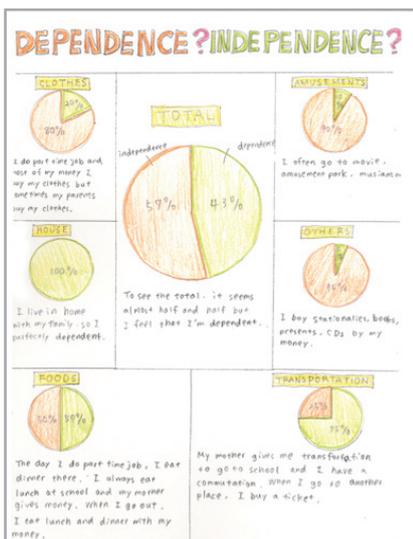


Fig. 3 modular layout: 'dependence'/'independence'

Fig. 4 shows the well-known lunch-box of Japanese fast-food. *Modularity* is the dominant principle. From one perspective one can see 'the meal' as shaping – prefiguring – (the modular compartments of) the lunch-box; in another one can see the form of the lunch-

box (pre)figuring the meal. Both perspectives are valid: these are mutually determining social and cultural practices and forms.

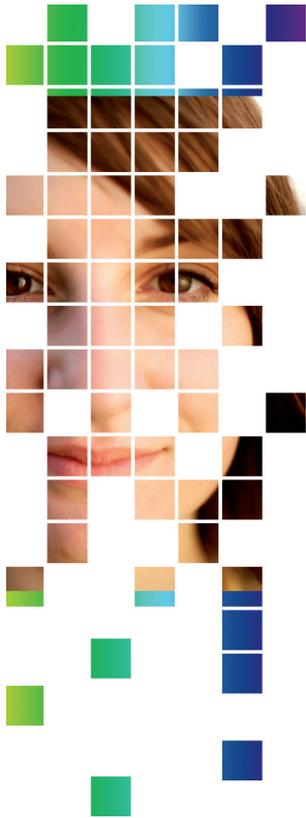


Fig. 4 Bento box

My point here is to insist on the need for precise theoretical / descriptive / analytical tools; the term 'literacy' – whatever prefix might be used – seems to me too vague as a means of uncovering central aspects of meanings in any culture, whatever the means of representation and dissemination. These are specificities we ought to be attending to. Using the single term 'literacy' to name these different realisations of one aspect of cultural organisation is not unimportant, it does say: 'there are things to attend to here'. As a message to a policy-maker, a teacher or a parent that is an important message. At the same time, as tools for research or theory-making it brushes over significant specificities. In the case of Sean McGovern's classes the issue is to find means of bringing the make-up and the significance of cultural resources and semiotic principles – here of *linearity* and *sequence* – into overt analytic awareness for learners whose cultures have oriented them to the different principles of *centrality* and *modularity*.

My point is: even when referring to *script* and *writing*, the notion of *literacy* is too imprecise. It becomes pretty well unusable or problematic when extended to other

‘Even when referring to script and writing, the notion of literacy is too imprecise’



domains. This arguments applies to the use of all modes whose distinctive affordances are brushed over and remain invisible, whether those of *speech* and *image*, *writing* and *sound-as-music*, *moving image* or *three-dimensional objects*. Multimodal production is now a ubiquitous fact of representation and communication. That forces us to attend with urgency and precision to develop tools requisite for their description and for analysis. Social diversity requires attention to careful design in representation. The increased availability of resources and the facility for the design of messages bring the need for careful questioning of what meanings are to be transcribed and what resources are best suited for their transcription. In this, if anything, the presence of the digital media adds complexity and urgency.

Environments of communication and environments of learning

Teaching and learning are forms of communication. In thinking about learning, sketching an apt theory of communication is therefore the necessary first step. In an attempt to get away from theories of the 20th century – endlessly patched up and constantly modified, little bits bolted on here, other bits stuck on there – I use the example of the Operating Theatre as a useful and representative instance of an environment of communication. Taking that as the instance, or a site in Second Life maybe, what model of communication would we come up with?

In the Operating Theatre; an operation is in its early stage. A ‘scrub nurse’ is in the foreground. Behind her, to the right, is the ‘lead surgeon’; opposite him is a ‘trainee-surgeon’ – a qualified medical doctor training to become a surgeon. Behind them, separated by a screen, is the anaesthetist; far back on

the right stands an Operating Theatre Technician. Representatives of four distinct professions are present; each with specific traditions, ways of talking and doing things. Their tasks are closely inter-related and integrated. This is first and foremost a clinical situation – an instance of (communication in) professional practice: a patient is here to be made better. It is also a pedagogic situation, an environment of (teaching and) learning: a trainee surgeon is here to become a fully trained surgeon.

Communication is multimodal: by *speech* at times, spoken comment as instruction or request; by *gaze*; by *actions* – passing an instrument, reaching out for an instrument; by *touch*. At all times communication is a response to a ‘prompt’: a *gaze* might produce a spoken comment; that leads to an action; looking at the screen by both surgeons produces a guiding touch by one of the other’s hand; an outstretched hand is met by an instrument being passed. Communication has happened when a participant’s attention has focused on some aspect of the communication; she or he has taken that to be a message and has framed aspects of that message as a prompt for her or himself. That *prompt* has been *interpreted*, becoming a new inward sign, and it, in turn leading potentially to further communicational action. The semiotic sequence of attention --> framing --> interpretation is ceaseless; it involves all the participants here, at all times, though differently in each case.

This larger event here can be framed in at least two ways, from a *clinical* and from a *pedagogic* perspective. If we frame the event pedagogically, as one of teaching and learning, the senior surgeon and the trainee move into focus. Questions then are: ‘How does teaching happen?’ or, with a slight shift in point of view, though within the same frame: ‘How does learning take place?’ From the learner’s perspective, any event may



at any one moment need to be attended to: the senior surgeon might give a spoken instruction; the scrub nurse might make a slight movement – or an explicit gesture – which he ought to attend to; the anaesthetist might glance at him to draw his attention to something. At any one time any aspect of the complex dynamic communicational ensemble might be significant for the learner, so that he has to be constantly attentive to cues as potential *prompts*. It is his interest as *trainee* surgeon that turns any one of these – or none – into a *prompt* for him. It is his decision. Once turned into a *prompt*, his interest frames it and he selects features from that now specifically framed complex *prompt* as the basis for his response.

Yet at the same time the trainee surgeon is here also as an assistant surgeon and needs to be at least equally attentive to *prompts* of a clinical rather than a pedagogical kind. Frequently the ‘same’ actions become different signs in the other frame. This double structure of an environment of communication, demanding multiple attention, is likely to be the norm rather than the exception in most instances of communication. Features of gender, class, generation, professional difference, regionality, are all present: communication across differences of many kinds is entirely usual and required

What applies to this one participant in this situation applies to the other participants; differently, depending on their position, role, perspective in the complex ensemble – and depending on their own assessment of their position. Crucially, communication in the Operating Theatre is multimodal: a gaze, a touch, a spoken comment, a gesture, a change in position, all might act as a prompt.

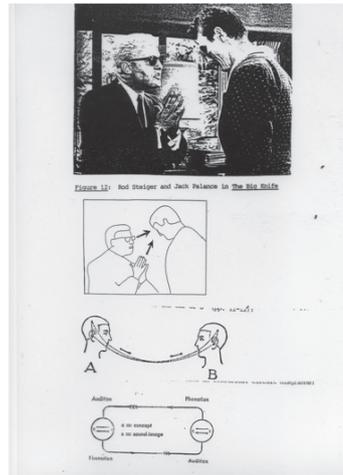


Fig.5 Saussure's diagram of communication

In the Saussurean schema, two interlocutors are linked in a dyadic structure. One initiates a message; the diagram and the theory both suggest that it originates from ‘within’ one interlocutor’s ‘head’; there it is shaped into speech; it is uttered; the other participant receives this (spoken) message; and in that interlocutor’s ‘head’ it becomes the basis of a response.

Versions of this model had been active in 20th century conceptions of communication; they still haunt conceptions of communication – even if in the semi-negation of many adaptations and alterations of that model. The dominant conception of communication in the latter part of the century however, was based on the Sender ---> Message ---> Receiver schema of Shannon and Weaver’s 1947 model, derived from electrical engineering. Here the active cause of communication lies with the sender, who ‘encodes’ a message in a code shared by sender and receiver, sent along a channel, to be ‘decoded’ by the receiver. This version received its most telling critique in Roland Barthes’ 1968 article ‘The death of the Author’; it insisted on the dominant role of the reader in communication. The Shannon and Weaver model rested on the stability and (perfect) recoverability of the message’ it was the receiver’s responsibility

‘Multimodal production is now a ubiquitous fact of representation and communication’

to ensure that the (meaning of the) message decoded was the same as the (meaning of the) message encoded. The power of the sender was not in question. In Barthes’ conception the authority for the meaning lay with the reader; the authority of the author was negated, denied.

Very different models of social organisation and relations of power are entailed in these. Ruling conceptions of learning which still dominate institutional sites of learning as much as they dominate popular commonsense are aligned, still, with the Shannon and Weaver model; which is not to say that other models have not been advocated and used.

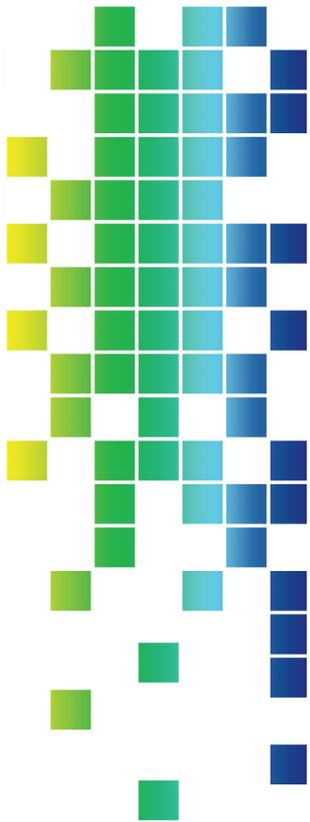
In the ‘operating theatre model’ of communication, three concerns are in focus. One is social interaction and interchange around meaning, oriented to the processes of *making* and *re-making* meaning through the *making* of signs – simple or complex – in *representation*. Sign-makers and their agency as social actors are in the foreground and with them the social environments in which they make signs. Signs are made twice: once by the *initiator* of the message as the *ground* for the participants’ engagement and once by the *interpreter* of the *prompt*. The second concern is with *resources for making meaning* – a focus on *modes* and their *affordances*. The third deals with *conditions* and *means for disseminating* meaning – the *media* and their facilities. A theory of communication needs to deal with the semiotic work done in all three; and with the meanings which result. Questions of the kind ‘Who does what kind of semiotic work for whom?’ are entailed by this model.

Even the most ordinary social encounter is never entirely predictable; it is always new in some way, however slight, so that the ‘accommodations’ produced in any encounter are always new in some way. They project social possibilities and potentials which differ, even if slightly, from

what there had been before the encounter. As a consequence, the semiotic work of interaction is always socially productive, projecting and proposing possibilities of social and semiotic forms, entities and processes which reorient, refocus, and ‘go beyond’, by extending and transforming what there was before the interaction.

Communication can only be understood if we see it as an always complex interaction embedded in contradictory, contested, fragmentary social environments: whether between groups or between individuals, coming together from social ‘locations’ which are always distinct in some respects. In the interaction, the social divergences / differences between those who interact provide the generative dynamic of communication. In that process social and semiotic differences are reshaped / transformed in temporary social and semiotic accommodations. Meanings are made in these transformations as the *making of signs*; the *making of signs* is *learning*. This is the semiotically and socially productive force of communication. What is socially problematic is projected into a public ‘space’ and produces temporary recordings of the social and the semiotic state of affairs; in transforming it, they shape it differently. The sites provided by digital media are instances of communication par excellence. As sites of learning they are particularly marked by difference and an absence of framing by authority; which have been and remains a feature of institutional sites of communication and learning.

In this model, the hurly-burly of social life is the generative force which constantly (re-) shapes a society’s semiotic resources, the force for the constant remaking of cultural / semiotic resources; and for the production of the new. In doing so the outcomes of the processes of communication and learning documents and ratifies new social givens.





Messages provide the *ground*, which is reshaped by participants in interactions into a *prompt*. *Communication is the response to a prompt; communication happens only when there is 'interpretation'* (as in Kress and van Leeuwen, 2001). That is, communication depends on the *transformative / interpretative engagement* by a participant in an interaction with a message made by another – in ways guided by their interest. *Interpretation* is the defining criterion of communication: *only if there has been interpretation, has there been communication*. *Interpretation* is central in communication and so, therefore, is the *interpreter*. An *interpretation* is always a mix of aspects of the 'ground' framed as *prompt* by the interpreter, with resources brought by the interpreter, shaped, jointly, into a new semiotic entity. An *interpretation* is the result of a series of *transformations* in which aspects of the *prompt* and aspects of the resources brought by the *interpreter*.

This sketch is meant to work as a model both of communication and of learning, or rather, it treats communication and learning as two sides of one sheet of paper. Representation is the making of signs; sign making is making meaning, and meaning making is learning. The questions that then need to be addressed are about the environments of communication / meaning-making / learning. Is the curriculum explicit? Is the pedagogy overt? What are the relations of power in the environment of communication / learning? Are there recognised positions of learner and teacher, and how are they indicated, with what powers and effects? What forms of assessment obtain? What are the prompts, and whose prompts are they? With what power attached? Whose interests are at work?

In a semiotic view of communication, *learning* and *communication* offer different lenses of looking at (broadly) the same phenomenon. The sign maker and the making of the sign and the learning of the learner are central in the approach to learning as communication.

It is the learner who defines what is the relevant frame for her or him to engage with because interest is central to the making of signs, and sign making is meaning making, and meaning making is learning, and interest is central to learning. That turns notions of learning where authority dictates what should be learnt, what should be the frame, where attention should go, on its head.

As a theory this does not make a distinction of sites of learning as informal or formal; it offers, rather, a means for a description of sites of learning. It recognises that interest is central to learning and it recognises the different interests of learners. Above all, sign-making and the maker of the sign, learning and the learner are central in this approach to learning-as-communication. With this broadly sketched framework it becomes possible to look at the characteristics of sites of communication / meaning making / learning; including sites shaped by the affordances of media as sites for communication and learning.

Learning and the recognition of learning

The issue of the *recognition of learning* has at least two aspects: one is the question of *legitimated modes* and *legitimated genres*; the other is that of the transformative agency of a *learner's interpretation*. The question of the *legitimated mode* or *genre* exists equally in all domains, whether in school-subjects such as English, Mathematics, Science or in non-institutional sites – for instance sites of popular culture – with no overt curricula. Learning demonstrated through modes that are not legitimated tend not to be recognised, wherever that is – though the sanctions differ. Judgment in institutions tend to be in terms of 'there is no (evidence of) learning here'. One question that seems important to ask, to me, is: how could there be no learning? When is there not learning? When am I not actually engaging with the world?

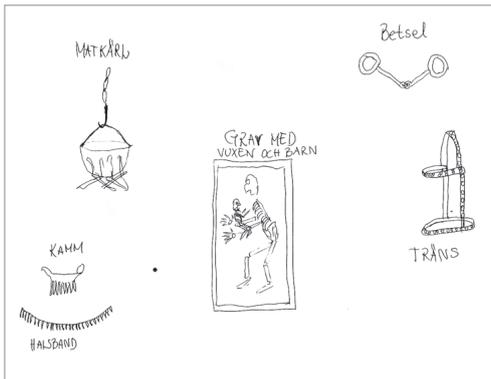


Fig 6b Map of Museum visit

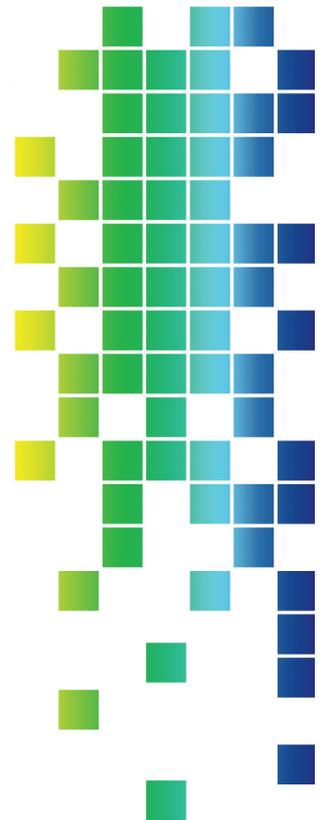
Here are two maps which speak to the notions of *recognition of learning* and *signs of learning*. The maps were drawn by one member of two different pairs. In the theory sketched, these are treated as responses to the *prompt* of the exhibition. From the curator's point of view, the materials in the exhibition can be seen as a curriculum. The exhibition is a site of learning – it is also a site of pleasure, of diversion. It is laid out in a particular way. Visitors come, engage with aspects of the exhibition; they interpret items and arrangements of items and the exhibition overall. The maps are evidence of their *interpretations of the prompt* which they constructed from (aspects of) the enormously complex message. There has been *interpretation*; so there has been communication and *learning*. The maps do not by any means show all that has been learned; they are partial but they are records of interest, attention, engagement, framing and interpretation nonetheless.

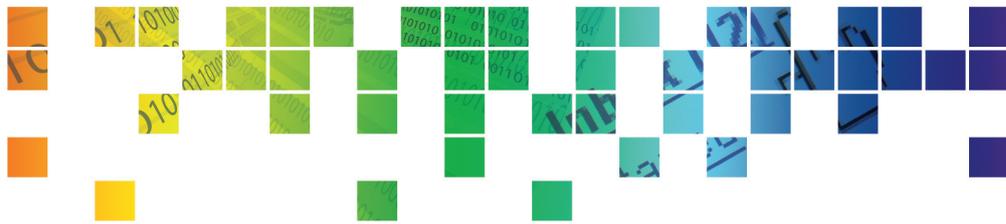
One response could be to say, well, we'll throw this one out – let's say, 6b – because that's not a map; or maybe we will throw out both as neither does justice to the exhibition or to the notion of a map. That might be the response of a pedagogue asserting power, valuing the map with a metric of that power. The visitors, however, produced each drawing as their map. If we adopt a metric oriented to the map-makers' principles, then their

interests move into the foreground. They are very different conceptions of 'map': yet each is a 'map' for this visitor. From that perspective quite different, very revealing, illuminating perspectives open up: what *is* a map, what is being mapped and how? With the whole range of maps we get insights of an entirely different kind into the visitors' takes on the exhibition, revealing a wide range of perspectives on their world in interaction with the world of the exhibition. A teacher of a traditional bent might say 'sorry, it's a very nice drawing, very carefully done, beautiful really, the figures here, I like them very much, but sorry, these aren't maps.'

That is the question of *recognition of learning*. It is absolutely central and is founded on the theory we bring to the question of learning. It asks whose interest is at work in evaluating / assessing what the interpreter has done in the process of communication, in this situation of learning, in these complex instances? Is the agency of the learner recognised? Are the modes in which learners 'report / document' their learning recognised? Would recognition be greater had it been spoken in an interview or *written* in a brief report? Would choice of the 'recognised' mode make learning more readily recognised and more amenable to evaluation? What would be missed in traditional forms of valuation / assessment?

The questions around *recognition* and *signs of learning* apply in intense form to environments shaped by *digital* media. I indicated that I am sceptical about the abundant and rampant, proliferating prefixes used with 'literacy': what do the prefixes mean? Above all they seem to describe aspects, specific conditions of the environment in and under which learning happens. They do not describe new forms or processes of learning. The adjectives draw attention to and attempt to name representation in digitally shaped





environments. That is important even if the naming increases ambiguities or vagueness.

The adjectives – digital-, e-, mobile-, and so on – do not name different kinds of learning.

If they did, then questions would arise whether learning changes with every new bit of technology that comes along; or whether we continuously evolve as biological entities at the pace of (often superficial) technological innovation? This issue is one which demands careful and accurate rather than facile and opportunistic examination and naming. Environments of learning are changing; with changes in environments of learning come changes in habitus of learning. An environment of learning is an invitation, as it were, an incitement and a pressure to alter habitus, subjectivity, identity – how you are and act in the world and with what resources.

In a small project carried out by the London Mobile Learning Group*, Elisabetta Adami trialled a 'smart phone' by doing a semiotic analysis of its affordances and facilities. In a paper that she and I have written – based on her work – we have collected and condensed some ideas. Here I report some relevant points from the paper. In the 'smart phone' – a 'convergent technology' – the phone as well as the texting facilities are becoming backgrounded; other communicational / locational / orientational / 'recording' facilities are becoming foregrounded. As a technology the 'smart phone' affords constant connection / connectivity, 'mobility' as access to information and the facility for recording of various kinds and the transmission of materials. Her relatively brief trial shows that one effect of connectivity of this kind is to obviate longer term or global planning. Strategies for planning ahead, for instance as information to be searched prior to leaving home, are no longer needed; information is available

at any time. Instead, short term, local and operational planning and tactics come into play, seeking the most effective paths for getting information with least effort in the shortest time.

That is likely to affect habitus. Looking at the generation under the age of 25 or 30, this is beginning to be evident. With the widespread use of such devices new textual genres will appear, the 'mobile email' for instance. In general the technology may be trending away from *representation as production*, and towards *representation as selection and arrangement*. In a way, that speaks to the panic about text-making as downloading, as cut-and-paste, as not in any way serious meaning-making work. It is expressed in the fear that children – 'the young' – are no longer able to make texts in the former manner, as their own making; and instead go to the internet, 'simply' getting 'stuff' from there.

For me the question is: 'Does this point to or represent a fundamental change in attitudes and principles of production?' 'Can texts produced in this manner no longer be treated as the making of signs; are they no longer signs-as-meaning, not *signs of learning*?' Here is a fundamental challenge to research and theory to develop tools that allow us to understand what principles of sign-making are at work here, what principles of selection, and what principles of arrangement, which result in new processes of sign-making and text-production, compared, say, to 'traditional' and still active forms of sign-making and representation.

Each functionality is more likely to be used in its default settings than by personalising its advanced options. This connects with contemporary social trends, by fostering a habitus where agency is first of all a matter of selection among template-based options (from software tools up to commodities

‘At all times communication is a response to a ‘prompt’ ... [it] happens only when there is ‘interpretation’

and services), whose personalisation entails more costs and is therefore the realm of expert users. We come to choose among the given templates the one which is the most apt to fulfil our needs, and, in turn, we adapt our expectations and needs to fit the range of preset templates. Real-time mobility, connectivity and synergetic use of all the potentialities are prioritised over a fine-grained use of each of them. This affordance (of media convergence devices) connect with other social trends to move habitus towards favouring immediacy, quantity and ‘multitasking’ instead of accuracy and focus

Selection and bricolage connote the contemporary notion of creativity, in which personalisation is less favoured and design finds a different form.

The affordances of these convergence devices connect and are realisations of broader social trends. That, for me, is crucial. Which of the two – the social or the technological – is prior? We can ask two quite simple questions: if social conditions were quite opposed to or at odds with the technological affordances, would or could any of this happen? Would that make it difficult for the technological affordances to be used? The other question is its inverse: could many of these trends be implemented given present social arrangements but without the technological affordances? This is where habitus meets the affordances of technology. Selection and bricolage (rather than (seeming) new production) connote a contemporary notion of creativity in which ‘personalisation’ amounts to design by choice from existing options.

What types of skill are likely to be needed and, even more significantly for educational purposes, what types of skills are foregrounded by the affordance of ‘smart phones’.

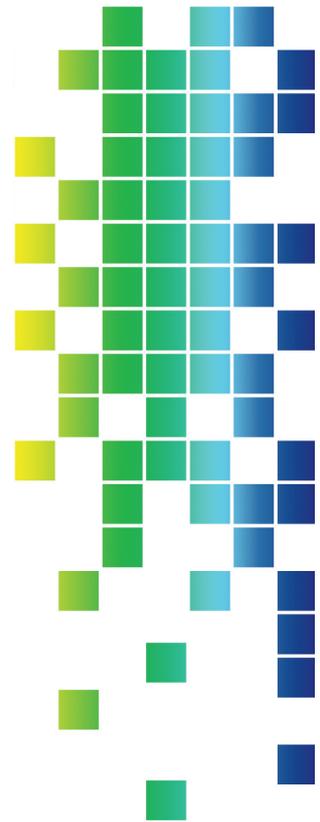
What types of skill are more likely to be needed and, even more significantly for educational purposes, what type of skills are foregrounded by the affordances of Smartphones?

These are: flexibility (of sensory engagement with the environment); adaptation of previous knowledge drawn from heterogeneous phenomena; tactical (local and operational) rather than strategic (global) planning; real-time, mobility, multi-tasking synergetic use over fine-grained focus and accuracy; learning *how* to (processes) rather than *what* (contents); real-time selection of the most apt option according to micro (individualised) interests instead of macro-design; optimisation of resources.

This is a characterisation of specific habitus; which is not my habitus in any way at all.

Conclusion

I have not said much about the digital media and the environments of learning and communication they foster, though I hope that some of what I have sketched can be translated to that domain. I would want to frame my questions within the sketch of communication and learning that I have outlined: as topics or issues or questions which arise from my comments: ‘who are the participants and what are their assumed or ascribed roles?’ ‘is there a curriculum?’ ‘what is the shape of the ‘curriculum’?’ ‘who has designed the curriculum – is there a figure/role of teacher or of a learner?’ ‘what roles are there – ‘communicators’, ‘teachers’, ‘learners’ – and how do the roles shape communication and learning?’ ‘what forms of power are at work?’ ‘is there a shaped message as ‘ground’?’ ‘whose ‘agency’ is at work, and where?’ ‘who shapes the environment of learning?’ ‘who ‘frames’ the ‘prompt’?’ ‘what and whose ‘power’ is effective?’ ‘whose ‘valuation / assessment’ is used?’ ‘how and by what and whose criteria is assessment





‘In my sketch of communication, the school would shape the ground for the learners’ engagement and transformation into a prompt for them to interpret’

/ valuation’ carried out?’ ‘are ‘signs of learning’ established? And if so how and by what criteria’ ‘who has produced the environment of learning’ ‘who defines ‘style’ and ‘aesthetics’?’

Lastly then, something about the school. I am using the term ‘school’ as a surrogate for all socially sponsored institutions of learning. I for one would wish to support the continued existence of the school to provide an effective, socially, culturally and ethically secure space for sociality and community. The school’s task would be to present socially and culturally significant materials, proposed seriously for engagement. In terms of my sketch of communication and learning, the school would shape the ground for the learners’ engagement and transformation into a prompt for them to interpret. The school would operate with the understanding that communication happens when there is interpretation; that interpretation is transformative; resting on the interest of the interpreter; and that interpretation happens on the *ground* proposed by the school transformed into a *prompt* by the learner. That would not imply that the learner’s interpretation is ‘the last word’ but rather that the school acts in the assumption that from an interpretation seen as a *sign of learning* it can deduce the principles of the learner’s interest, and building on that can shape a new ground for the learner’s next step toward an understanding of what the school regards as socially and culturally significant for the learner. This builds on both the school’s authority and the learner’s agency; it does not represent a capitulation to unprincipled celebration of the learner’s creativity. The curriculum proposed by the school would also be regarded as an important resource for social cohesion.

Pedagogically there would be two points of sign-making: once as *ground* and once as *prompt* and *interpretation*. Each would be seen as significant though differently

so. The learner as interpreter would be central. The learning environment would be designed pedagogically, that is, as a social environment, for its imagined community and its uses. In a market-dominated society, agency is expressed, among other means, as *choice*.

In this differently configured world, there is a need to think about ‘navigational aids’, the importance of means for social navigation in a social world dominated by the market, where identity is established through consumption. The market offers the myth, at least, of unfettered *choice*. *Choice* demands the semiotic work of selection. Selection is governed by *interest*, as is *choice*. The effect of arrangements based on choice is *style*. In reality – ideology apart – choice is governed by power, so *style is the politics of choice*. In a market-dominated society, identity is constructed through consumption; so identity, too, is the effect of power expressed as *style* through *choice*. *Aesthetics* is the valuation of style; that too is governed by power, so that *aesthetics is the politics of style*. The market is not interested in *ethics*, and because value and evaluation are also lodged in fields of power, *ethics is the politics of value and evaluation*. A debate about *ethics* – not as ethical systems but as principles of ethical action – who benefits, who is harmed, in what ways, by my actions in communication, by the environments of communication and learning, by the uses of power – is essential as a foundation for the development of strategies for action.

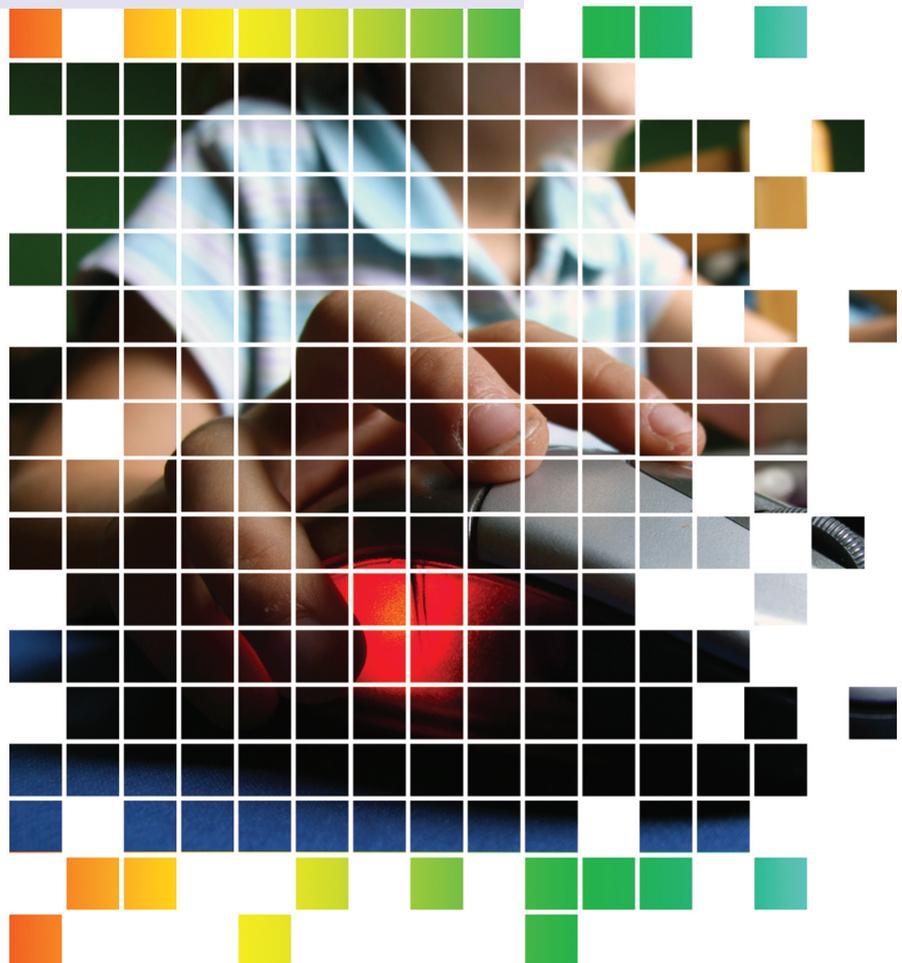
Both pedagogies and curricula will have to be designed with criteria of *style* and *aesthetics* at the forefront, so that those who are presented with these as the *ground* for their engagement have no difficulty recognising themselves and their interests in them.

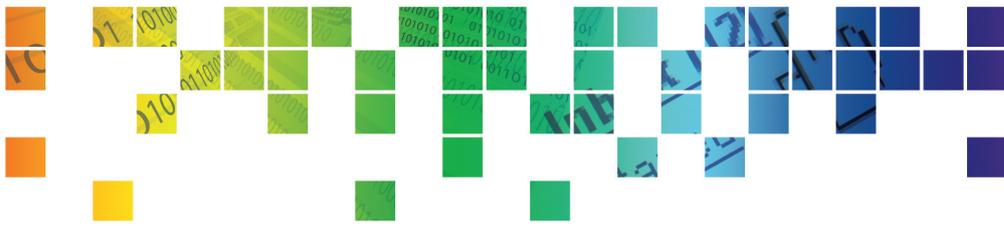
Discussion from the floor

Why are the aesthetics of the school so banal, so uninspiring? Because they refer back to a different period, with different relations of authority and power. So the school should continue: it is the place where the collective sense of what is important to a community is sustained and transmitted. But we must ask critically what that sense is, how it is transmitted, and it relates to and responds to the interests and principles of engagement that pupils bring with them.

What new technologies can sustain learning? The smart phone as a device for learning is both more transparent, because it enhances information flow, and less transparent because so much information is encoded (like a black box) within it. So what kind of a transcription, or translation, technology is it? We could ask similar questions of the interactive white board too. Does it just provide the learner with a ready-made template of 'choices'?

If we reject the notion of 'literacy' as too simple, what do we have? 'A full understanding of the capacities and potentials of the cultural resources of representation, of production, and of dissemination, and of the shapes and affordances of the environment in which all of this happens' (Kress).





Breaking out and fitting in: Strategic uses of digital literacy by youth

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Abstract

Scholarship related to the history of literacy takes a forensic approach to the study of communication tools and texts as a way to infer their social impact over time. In contrast, digital literacy researchers often identify, collect and analyse evidence under rapidly evolving conditions for tool creation, access, innovation and use in an increasingly global, mobile and digital society. As digital literacy artifacts proliferate and churn, assumptions about the nature and value of literacy generate profound questions about the attributes and skill needed to master multiliteracies for their relative social benefit. This is particularly evident as next generation users negotiate and embrace digital literacy practices as a form of social capital. Contemporary uses of literacy by youth raise intriguing new questions about the challenges and supports for engagement with digital literacy assets.

Introduction

The mastery of literacy tools and texts is widely assumed to be a threshold for attaining social capital. These uses and practices incorporate a potpourri of assumed social rewards which cannot be assured with literacy, but which can certainly be stunted without it. The history of literacy demonstrates that the uses of multiliteracy tools, texts and practices are shaped by their relevant social, cultural and environmental contexts and draw upon past literacy practices as new tools are introduced. This broad spectrum of literacy practices reflects human desire for control, status, pleasure, community, participatory learning, ritual, personal growth and transcendence.

The startling proliferation of digital communication tools and texts usurp, warp and change existing literacy practices so rapidly that new rules of

engagement challenge the status quo, resulting in anxieties about the control, benefits and liabilities of these new communication practices. In particular, the recent development of computerised devices for artificial intelligence and organic computing raise unsettling questions about what it means to be human in a digital world.

The speed of change presents a challenge for literacy scholars who traditionally work methodically and forensically to analyse the social impact of literacy tools and texts over time, instead pushing literacy scholarship into ad hoc and predictive modes. In 1965, Intel co-founder Gordon Moore predicted that the number of transistors per square inch on a computer chip would double every two years (Moore, 1965). Commonly known as Moore's Law, his prediction has since been adjusted to indicate a doubling every 18 months for almost every performance indicator for digital devices, including size, speed, memory and cost and is expected to be a useful guideline for at least another decade. In a 1995 speech, Moore likened the computer revolution to the rise of alphabetic literacy in centuries past, in particular the ability to archive and transmit knowledge across generations, but noted 'information technology will create its own revolution in society over a much shorter time scale' (Moore, 1995, 8).

Riffing on Moore's Law, Raymond Kurzweil, a mathematician who writes extensively about the future of computer technology predicts that the rapid integration of powerful digital devices will result in the 'Singularity,' a not-so-distant future marked by the widespread uses of technology to overcome human biological limitations (Kurzweil, 2005). In predictions that read like science fiction, Kurzweil envisions a new epoch with the potential for increased mental prowess,

bodily functions, longevity and material progress through human-machine synergy. Needless to say, the merging of human biology with nanotechnology, genetics and robotics comes with profound practical, social and philosophical questions. Kurzweil's predictions are intriguing in view of the sheer breadth and speed of adaptation. Given the trend toward human dependence upon digital devices, his insights resonate in every sector of society, heightening anxiety about the social uses of digital tools, especially with young people.

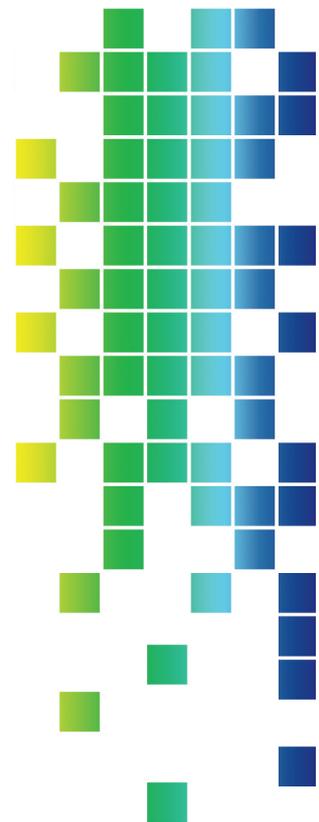
The Research Agenda for Integrated Literacy Systems for Learning

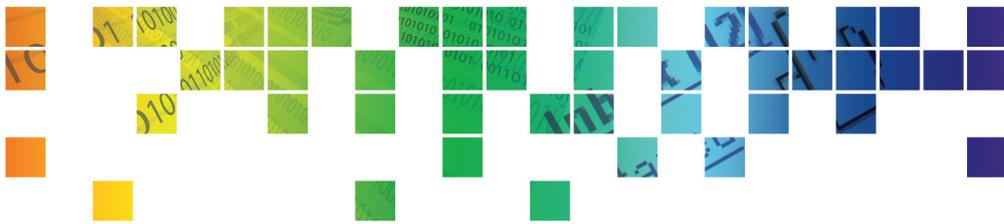
A great deal of literacy scholarship is marked by a forensic approach to literacy tools and texts in hindsight. The obvious proliferation of digital media tools and their everyday uses by young people represents an ephemeral shift in the literacy landscape as new media tools and texts emerge, deteriorate and decline in rapid succession. In the current literacy climate, disparate scraps of evidence can be used to provide new insights and direction for academic research. In spite of questions about bias and reliability, marketing data can be useful as a way to highlight potential trends and to frame academic research questions and attributes for future studies in the academic tradition.

A case in point is a well-funded global marketing study conducted for MTV Networks, Microsoft Digital Advertising Solutions & Nickelodeon by two marketing research firms from London who collected qualitative and quantitative responses from a sample of 10,000 young people ages 14-24 in sixteen countries. The results indicate that young people are still surprisingly traditional in their media use and that geographic and cultural

contexts shape the uses of digital media. The majority (56%) of respondents in the MTV study spent time online, but only twenty percent considered themselves 'technology lovers.' They reported that they were more likely to use technology to enhance, rather than to replace face-to-face interaction. They enjoyed traditional pastimes such as listening to music (70%), watching television (65%), hanging out with friends (65%), spending time with a girl or boyfriend (55%), eating (53%), or just hanging out at home (49%). The MTV study respondents saw broadcast media as passive, yet still considered TV as part of their media universe, using it for stress relief. In contrast, they considered the Internet and interactive media as cognitive and integral to active social practices. Those who saw technology use as a mark of status were more likely to live in the US, Britain or Japan (MTV, et. al., 2007).

Some of the most interesting findings of the MTV marketing study were that media practices were dependent on broader social norms and cultural contexts, providing some direction for academic research agendas with large, comparative international studies. For example, respondents who lived in areas with a strong outdoor culture such as Italy, Brazil and Australia, were most likely to report the uses of mobile phones for talking, flirting and taking pictures of their friends. Youth in Europe were more likely to text than those in the US, possibly because widespread public transportation in Europe made it more convenient for those who were riders and not drivers. Unlike their North American counterparts, Japanese youth who often live in small spaces and don't acquire a personal computer until college age, reported that they seldom use email and internet messaging, but are most likely to use cell phones and texting for portability and privacy. Boys reported more internet friends than girls and the gender gap for 'friending' widened with age with an average of 70 friends on social





‘In the current literacy climate, disparate scraps of evidence can be used to provide new insights for academic research’

networks for boys aged 18-21. Globally, Chinese youth (93%) reported interacting with the most online friends who they’ve never met offline. In typical marketing jargon, the study concludes that strict family policies in China contribute to the uses of social networking by ‘only and lonely’ children.

Studies of this type have implications for advertisers and marketers, but can also be triangulated with results from numerous academic studies to indicate that young people are adept at accessing, multitasking and filtering information, as well as interactively creating, uploading, collaborating and sharing their own content (Ask, et. al., 2006; Boyd & Ellison, 2007; Ito, et. al., 2008; Lenhart & Madden, 2007; Jenkins, et. al., 2006; Roberts, 2005).

What is still needed is a research agenda to map the way that social institutions are responding and supporting these new literacy practices. In particular, the implications for the integration of new literacy practices in schools are that young people respond well to technology use that fills a need, but tend to ignore overly determinist, technology-led approaches. They long for avenues of self-expression, self-esteem, engagement, safety, belonging, as well as all usual accoutrements of youth culture, and their priorities differ with age, gender and geographic area. Most importantly, because digital literacy practices are shaped by the larger culture, an analysis of contextual cultural and social norms are key to the design of responsive learning environments.

Marketing research also indicates that young people increasingly gravitate to virtual worlds to create avatars that interact with other users to interact, create social spaces, engage in commerce and play games online. Recent trends tracked by KZero, a marketing research firm in London, indicate that although the earlier networks have been embraced by adults over 30, a wide array of online

virtual worlds, mirror worlds and social networking spaces are coming online to engage children, tweens and teens (Mitham, 2008). At the same time, innovative interfaces are breaking the reliance on screens and keyboards to pull the 3D world behind the computer screen into the 4D world, where physical and digital objects co-exist and interact in real time, mixed reality experiences.

Contemporary youth use media to: multitask, search and filter information; retrieve, index and store artifacts; create and share; collaborate and dialogue; meet or delete; network, socialise; play and relax; work; solve problems; keep moving; hideout; avoid parental scrutiny; engage in collective decision-making with friends, and to participate in the world. They use social networking sites to practice the whole spectrum of competitive to supportive social skills with friends. From children to teens, they go online to engage, explore, collect, challenge, create and consume. New media are normal and unremarkable to young people, necessary for attaining social capital and a source of pleasure. They provide important social spaces to support both public and private expression-participatory, interactive and a haven from adult intervention. They are always available – organic, ubiquitous and pervasive.

Young people clearly see the learning potential for new media, but are increasingly frustrated with the support they receive at school for their every day literacy practices. In a 2007 study with a diverse set of users aged 12-17, the majority students (78%) reported that they used the Internet and likened it to a locker, backpack, notebook, textbook and reference library. They say that they use it as a study guide, for tutoring and as a guidance counselor. They expect unrestricted, high-speed access at all times; cross-platform access to content, the ability to both upload and download content, and

more integration of digital media into their learning tasks. Tech savvy students also report that they are aghast at their inability to use these skills in school and express widespread dissatisfaction with their school experience (Levin & Arafeh, 2007).

The Downside of Ubiquitous Computing

Literacy scholars have long reminded us that the literacy can be used for both good and bad purposes (Graff, 1987). For example, interactive social networks have been used to mobilise smart mobs for social justice, while at the same time, they can be used to bully and harass. The Internet can contribute to widespread access to information, but the deluge can contribute to a Cascade Effect of misinformation (Tierney, 2007). New media literacy practices can contribute to participatory and collaborative engagement, or it can reinforce arbitrary divisions of social status. Embedded computer devices can be used to locate, track and make every day tasks more efficient, or they can be used for Orwellian-style surveillance. Finally, students are not always aware of the legal and economic implications of their online play. Although they have the opportunity to create and distribute creative intellectual content, their creations build wealth for others. Their personal data and intellectual property loaded to the sites are not only mined and sold, their content also belongs to the corporation who owns the URL. As information becomes more transparent, huge tracts of personal and private information from blogs, social networks, cell phones and subscription lists are diligently mined and distributed globally by profiteering number crunchers, a marketing sector that journalist Stephen Baker dubs the *numerati* (Baker, 2007).

Children have found ways to evade parental control for generations, but the uses of mobile, pervasive and ubiquitous digital tools generate fears that youth are increasingly isolating themselves from the adult world of home and school while at the same time the line between public and private is blurred in ways that are opaque to adults.

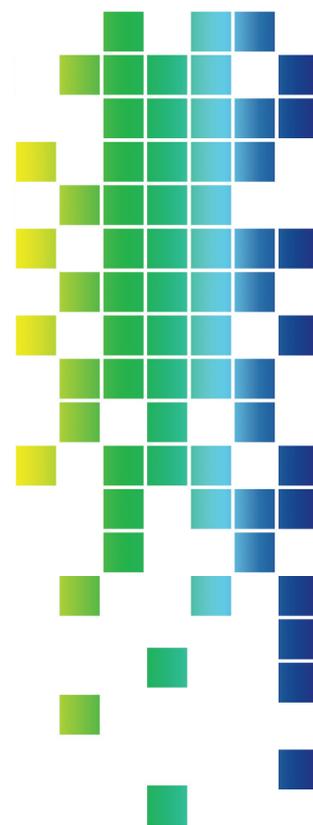
Unfortunately, these concerns have a tendency to spin off into the kind of moral panics that seem to attach themselves to each new medium throughout the history of literacy.

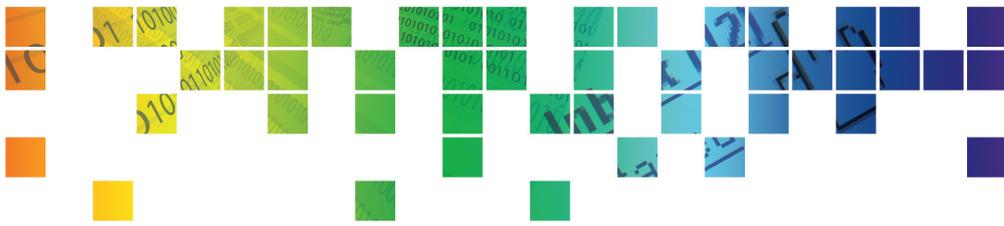
However spotty the evidence, concerns about media 'effects', internet 'addiction', online predators and children's access to salacious content on the internet dominate the mainstream press, conflate the evidence and thus fuel community concern about new literacy practices.

Given the complex findings and strong opinions about media's benefit or harm, it is obvious that learning environments must work from some consensus and evidence about the relative benefit of digital literacy practices in what can be called an 'assets-based' approach. However well intended, the haphazard integration of new literacy practices has the potential to *disintegrate* into an avalanche of decontextualised data, confused pedagogy, and dispiriting learning environments. When they fail, the piecemeal approach that wedges new tools for learning into traditional systems has the potential to harden community bias for traditional practices and pedagogies. Instead, strategic designs balanced with community buy-in and aligned with known core supports for successful learning environments, have a better chance of success.

New Literacy Learning

Given the range of social needs and conditions on the ground, school systems





do not want to hear that they need more complex systems. As educational institutions scramble to respond to this brave new world, tensions play out about the appropriate degree and kind of information access and literacy practices that should be integrated into the school environment. These tensions are being used to refresh community-wide dialogues about the overall purposes and priorities of schooling. Although admittedly optimistic, a closer look at digital literacy practices can be used as a starting point to re-design responsive learning environments in a more holistic and systemic way.

It could be argued that the overall objectives of education have been confused in recent years on the narrow premise that information technologies are a pathway to workforce development. Obviously, a broader range of literacy practices for students can still respond to traditional visions for career and academic paths, but also can be used for a wider range of social engagement strategies such as civic participation, cultural understanding, problem-solving, individual expression and personal growth.

Undoubtedly, in the process of retooling and updating the community's need for supportive learning environments, some traditional elements are decidedly out of sync with contemporary digital literacy practices. In a transitional phase, new designs for learning are faced with the task of balancing informal education practices of play, experimentation and discovery with community expectations that formal educational will prioritise order, safety, accountability, compartmentalisation and values inculcation. Traditional systems for schooling are also designed and purposeful, with control and authority as central to their missions. In many cases, these systems are responsive to community need and direction. The problem is that these rigid school systems are too often dead zones for contemporary learners.

It's not as if education need always to be fun and games. However, it seems that spaces for digital play might be an element that could be used as a central organising principle for school change, or at least as a way to balance the dominance of existing control structures in formal schooling. Digital literacy practices depend upon play and open communication to engage contemporary students and to sustain their interest. These elements are missing or marginalised in rigid, overly-managed school systems.

In fact, many strategies exist to successfully leverage and integrate both old and new literacy practices for learning across generations. Although the hype about 'digital natives vs. digital immigrants' has been over generalised, creative ideas about the redesign of learning spaces can come from both sides of the generation gap. For example, older generations can be relied upon to contextualise information for the young, especially in the form of their own anecdotal, lived experience to give content a broader and deeper frame of reference. This adds contextual value to the reception of new media, but also provides opportunities to apprentice young people in the deeper analysis and production practices need to hone their critical literacy skills. Young people who feel free to express themselves, offer avenues of innovation and creativity that can lead to increasingly supportive, customised and engaging learning environments.

Multiliteracies in Practice

Because of the dominance of information reception over knowledge creation in traditional schooling, it may be more likely that schools can cite support for digital activities akin to research, content delivery and reading. Attributes may encompass elements such as authorship, searching and archiving, genre, aesthetic discourses, narrative conventions, audiences, and copyright restrictions.

‘Young people clearly see the learning potential for new media, but are increasingly frustrated with the support they receive at school’

In spite of increasingly strong access to low-cost equipment, the growing number of young people who produce and distribute their own content as part of the school day is one area that begs for leadership, expertise and curriculum support at the public school level. Anecdotally, youth media production is most likely to take place in informal settings as after-school programs or in non-profit centers. The purposes of these programs span goals for youth development, social justice, artistic expression, health education, career awareness, civic education, anti-consumerism, and academic support (Tyner & Mokund, 2004).

Because media production is not offered as a discrete teaching credential in the US, the number and kind of production that goes on in formal schooling is not yet tracked. Anecdotal evidence indicates that it is offered by dedicated teachers who approach the study based upon their own interest and experience. For example, because they are confident with literature, Language Arts teachers often focus on narratives as the basis for digital storytelling or video production exercises. Art teachers may focus on non-narrative elements. Technology educators may ask students to produce games as part of workforce development efforts. In order to design and assess production tasks, it is useful to at least break the tasks into their pre-production, production, and post-production elements. These include a broad range of attributes related to concept development, scriptwriting, narratives, media languages, software development, assets management and storage, copyright restrictions, and editing.

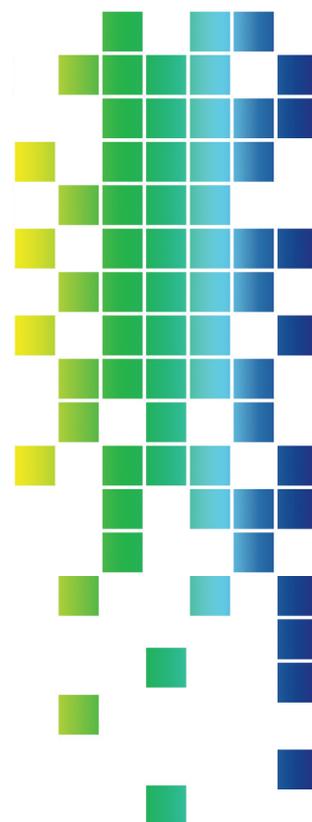
Moreover, because few teachers come to the classroom with industry experience, these exercises are seldom contextualised within the discourse and economic parameters that guide mainstream production, distribution and reception. Chief among these are the understanding of attributes related to audience reception, both on the personal and group level. These

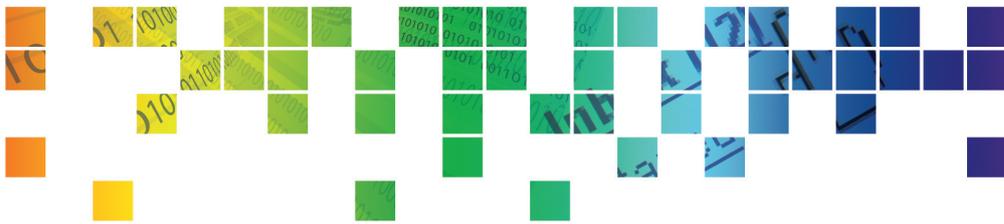
include audience demographics and uses. In addition, legal frameworks and business practices related to media distribution and production are also useful to articulate and assess. These may include issues of ownership, control, legality, platforms, modes of transport, etc. Finally, all of these attributes are best understood within their broader social, cultural, economic, historical and environmental contexts.

For the full range of participatory, project-based and collaborative work that is needed to address multiliteracies, it is useful (and probably more interesting for everyone) to draw from a bigger toolbox of pedagogical approaches. These may include direct instruction, but also constructivist, Socratic, simulation, apprenticeships, role-play and other practices that support the intended tasks and learning outcomes (Tyner, 2003). Once the measurable outcomes for digital literacy education can be shaped, the appropriate pedagogical practices can be aligned in a systematic way. The problem is not that direct instruction is outmoded or ineffective for many purposes, but that it dominates the traditional school environment.

Think like an Architect

An expansive vision for school change might begin with an examination of the ‘built world’ for schooling. In order to design responsive institutions, contemporary architects work with clients to establish the social uses for schools. In the planning process, the needs and culture of the community are used to establish the priorities and end results for architectural planning. In fact, as comfort with virtual worlds increases, the design of learning environments in mirror worlds is already being used as a proving ground, providing low-stakes and low-cost formative information, sometimes referred to as ‘front-end analysis’, before considering the cost of bricks and mortar in the physical world.





Discussions about the future of schooling has already begun in Britain with the Building Schools For the Future initiative that seeks to build new schools in the coming decades (DfES, 2003). Although there is a need to replace aging school structures, the US has yet to develop a comparable initiative. In the 20th Century, the architecture of US public schools moved from sectarianism to nation building and later, in the Cold War period, the architecture of school buildings signaled nationalism, efficiency, safety, and control. Now many of these aging buildings are in need of repair, replacement or expansion.

Contemporary school systems still retain the safety, efficiency and control features, reflected in the use of temporary mobile structures, bell systems, security cameras and blocked Internet access in computer labs. High-stakes accountability measures, in particular the lucrative business of standardised testing, now drives the design of publicly-funded learning spaces. The resulting environments are amorphous, reflecting confused and competing aims, purposes and priorities. Although entrenched as a driving force for the design of contemporary educational environment, widespread criticism of standardised testing may yet push it to the tipping point and back to a more open classroom approach.

To rethink schools, stakeholders would do well to come together and think like an architect, that is, to design the built world around the social uses that people expect and enjoy, including the ability to strategically use their literacy skills. At least, successful learning environments could respond to the community's desire for spaces to think, learn, produce, watch, collaborate, share, present listen, negotiate, document, archive, provide services, perform rituals, socialize and celebrate.

In the process, the next wave of school architects would also benefit from the study of the open classroom movement. Based on informal education practices from Britain, US school reformers in

the 1960s touted an open classroom strategy that put learners at the center of an interdisciplinary school curriculum. Schools were built without walls as modular, open spaces, rejecting the constrained rows of desks and boxy rooms of the past and embracing the freewheeling, learning-by-doing vibe of the 1960s (Cuban, 2004).

Unfortunately, the clean, modernist architecture was designed without assessing the educational assumptions of the surrounding communities, resulting in resentment and confusion and outright political resistance to the design. Some of these schools quickly erected makeshift walls to return their schools to their traditional, disciplinary-based, teacher-directed missions. Only recently, Westmont High School, a secondary public school built in 1974 in a unique circular structure with no doors and class areas divided by movable partitions, proposed permanent walls to accommodate standardised test-taking and the potential need for lockdowns in the event of school emergencies (Reed, 2008). In general, the decline of the open classrooms movement backlashed to a back-to-basics movement, complete with corporate-backed standardized tests and computer labs with limited access to anything except 'drill and kill' software. Currently the most prominent modular element in over-populated and aging schools can be seen in the stultifying portable classrooms that blight the surrounding educational environment.

The moral of this story is that one utopian element – in this case pedagogy – cannot successfully drive school change. Instead, a systematic plan for success includes alignment of the built world, the pedagogy and the resources with the needs and desires of the learner. In addition, even a rational plan has little chance for success without widespread community consensus on some explicit aims and purposes for education.

In spite of its false starts, it may be time to take a second look at the open classroom

'The haphazard integration of new literacy practices has the potential to disintegrate into an avalanche of decontextualized data, confused pedagogy, and dispiriting learning environments'

movement. In addition to simmering dissatisfaction with standardised testing and perceived school failure, there is a growing need to upgrade aging school facilities and reposition public schooling as a strategy for global competitiveness. A growing pool of frustrated 'customers' is contributing to a widely perceived need to dramatically revise our assumptions about school systems and the literacy practices that support them. Instead of erecting makeshift classrooms to accommodate more standardized testing, it may instead be time to knock down a few more walls in the name of academic excellence.

The concept of openness in the open classroom movement extends to open source access to intellectual resources, including software codes and mods. It encompasses the need to open schools to the public, both online and off, and to rethink time structures such as 'class time' and 'school hours' and 'school year'. It means permeating the arbitrary discipline-based boundaries that stifle innovation and creativity and embracing peer-based learning. In the process of community consensus, openness to the voices of young people is vital to school change efforts. If nothing else, new literacy practices open portals for cross-generational dialogues about the nature of learning in the dream schools of tomorrow.

References

Ask, J, Matiesanu, C, & Scevak, N (2006). *Vision report from mobile marketing & media*. NY: Jupiter Research. Retrieved November 16, 2008 from <http://www.jupiterresearch.com/bin/item.pl?research:vision/1259/id=98111/>

Baker, R (2007). *The numerati*. Boston, MA: Houghton Mifflin Company.

Boyd, D M, & Ellison, N B (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated*

Communication, 13(1:11). Retrieved November 16, 2008 from <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>

Cuban, L (2004). What ever happened to the open classroom? *Education Next*. (Spring). 4(2), 69-71. Palo Alto, CA: The Hoover Institute.

DfES (2003). *Building schools for the future*. London: DfES.

Graff, H (1987). *The labyrinths of literacy*. London: Falmer Press.

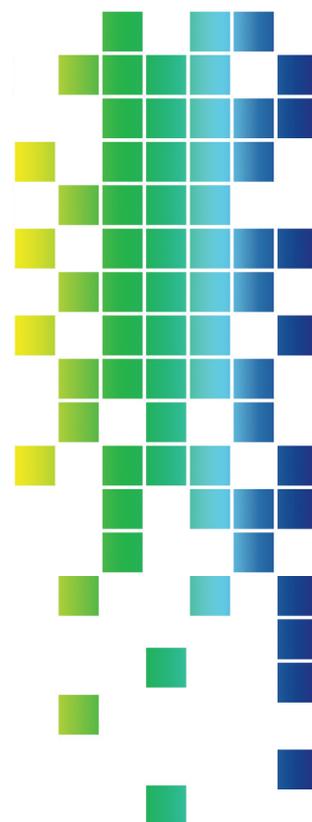
Ito, M, Horst, H, Bittanti, M, et. al. (2008, November). *Kids' informal learning with digital media: An ethnographic investigation of innovative knowledge cultures*. Chicago, IL: The John D and Catherine T MacArthur Foundation. Retrieved November 23, 2008 from <http://digitalyouth.ischool.berkeley.edu/node/1>

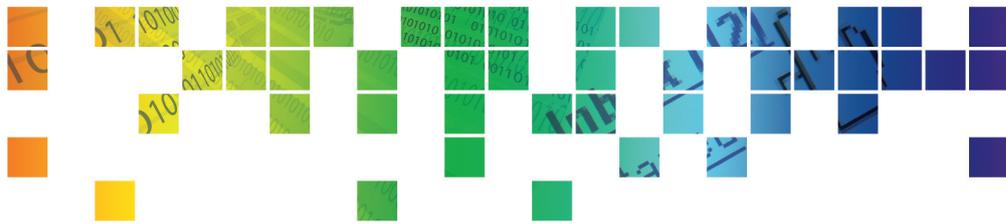
Jenkins, H, Clinton, K, Purushotma, R, Robison, A, Weigel, M (2006). Confronting the challenges of participatory culture: Media education for the 21st century. *MacArthur Digital Media and Learning White Paper*. Chicago, IL: The John D and Catherine T MacArthur Foundation. Retrieved November 16, 2008 from http://www.digitalllearning.macfound.org/site/enJLKQNIFIG/b.2108773/apps/nl/content2.asp?content_id=%7BCD911571-0240-4714-A93B-1D0C07C7B6C1%7D¬oc=1

Kurzweil, R (2005). *The singularity is near: When humans transcend biology*. NY: Viking Press Penguin Group.

Lenhart, A & Madden, M (2007). *Social networking websites and teens: An overview*. Pew Internet & American Life Project. Retrieved November 16, 2008 from http://www.pewinternet.org/ppf/r/198/report_display.asp

Levin, D & Arafeh, S (2007, August 14). *The digital disconnect: The widening gap between internet savvy students and their*





schools. American Institutes for Research for the Pew Internet & American Life Project. Washington, DC: Pew Charitable Trust. Retrieved November 16, 2008 from http://www.pewinternet.org/PPF/r/67/report_display.asp

Mitchell, C & Reid-Walsh, J (2002). *Researching children's popular culture: The cultural spaces of childhood*. New York and London: Routledge.

Mitham, N (2008). *The kids, tweens & teens virtual worlds case study*. London: KZero Research. Retrieved November 16, 2008 from http://www.kzero.co.uk/blog/?page_id=2093

MTV Networks, Microsoft Digital Advertising Solutions & Nickelodeon with Sadek Wynberg Millward Brown & OTX (2007). *Circuits of Cool/Digital Playground*. New York & London: Microsoft Digital Advertising Solutions.

Moore, Gordon. (1965, April 19). *Cramming more components onto integrated circuits*. *Electronics Magazine*, 38, 114-117.

Moore, G (1995). Lithography and the future of Moore's Law. *PROC SPIE*, 2437. Accessed November 1, 2008 at <http://www.docstoc.com/search/Lithography-and-the-Future-of-Moores-Law/>

Reed, A (2008, January 3). District may put end to open classrooms. *The Westmont Progress*. Retrieved November 16, 2008 from <http://www.mysuburbanlife.com/westmont/homepage/x1925654282>

Roberts, Donald. (2005). *Generation M: Media in the lives of 8-18 year-olds*. Menlo Park, CA: Henry J. Kaiser Family Foundation. Retrieved November 16, 2008 from <http://www.kff.org/entmedia/entmedia030905pkg.cfm>

J Tierney. (2007, October 9). Diet and fat: A severe case of mistaken consensus. *Science Times*, *The New York Times*, D1-D2.

Tyner, K (2003, November). Beyond boxes and wires: Literacy in transition. In J Fisherkeller & R R Means Coleman (Eds.), *Television & New Media*, 4:4, 371-388. Thousand Oaks, CA: Sage Publications.

Tyner, K & Mokund, R. (2004). Mapping the field: A survey of youth media organizations in the United States. In K Tyner (Ed.), *A Closer Look 2003: Case Studies from NAMAC's Youth Media Initiative*, 61-84. San Francisco, CA: National Alliance for Media Arts and Culture.

Discussion from the floor

There are significant advantages to pervasive computing as well as the disadvantages – for example, getting medical advice at any time of the day – useful in our 24/7 lifestyle.

How shall we balance the optimism and pessimism regarding new technologies? This paper emphasises the exciting possibilities, but earlier, Chris Davies' paper revealed the mundane realities. It seems that informal spaces for learning (museums, after school clubs, etc) are being more creative than formal schooling.

The spatial setting is also important: when children talk about their school buildings, they discuss the social spaces, the toilets, corridors and outside space – as both difficult and joyful. So the design of the classroom, and other school spaces, is crucial and encodes social relations in a powerful way. Worryingly, it seems that the concern for safety is trumping other considerations – creativity, aesthetics, and so forth.

Panel: Implications for policy and practice

Julian Sefton-Green

Rosamund Sutherland, University of Bristol

Shelagh Wright, Demos

Chair: **Keri Facer**, Futurelab

Keri Facer

- This panel is here to ask, among other things, what is the function of education? Julian works in digital media and creativity within formal learning. Ros has been heading up some of the biggest projects in ICT in education. Sheila has been working on the creative industries and their relation with education. So, let's open up some big questions.

Julian Sefton-Green

- I'm going to be provocative and ask, what is the evidence that these kinds of discussions, albeit favoured by the ESRC, really play any part in the formation of education policy? Policy is created by political and contingent imperatives, while we play out a pseudo rational model of obtaining evidence and applying it in practice.

- Over the past 15-20 years, while the academic community has been getting excited about change, alternatives and possibilities, the education system has been in the complete grip of a neo-liberal conservative approach to the curriculum.

- Further, along with some of today's speakers, I share a scepticism of the value of using the concept of literacy in these debates rather than, instead, reflecting on the difference that specific social practices are making. Today, have we thought of literacy as a tactical term or a normative one? One that points to how young people are learning out of school with new technologies, including how this informal learning may deconstruct what goes on in school, or one that endorses a normative project that will grade, exclude, and valorise certain forms of knowledge and behaviour over others? The former notion of literacy allows for a critique of school practices, while the latter faces some big problems – the professional training of teachers, for example.

Shelagh Wright

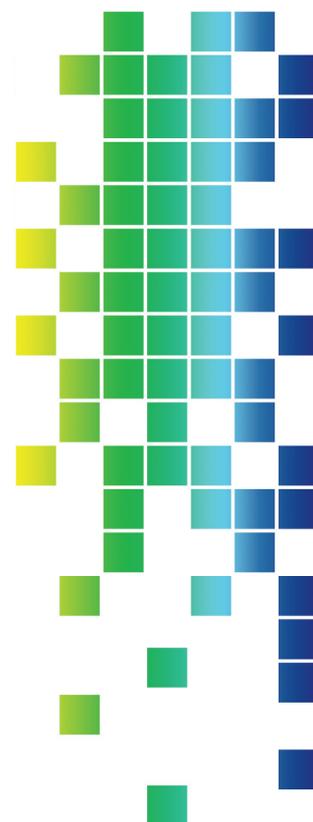
- I agree with Julian that it is difficult to assume a clear relation between knowledge, policy and practice. And there's also a disjunction between how we are discussing issues today and the ways in which young people discuss them, as Chris's paper showed.

- In thinking about literacy, it is easy to make a play on the three Rs of reading, writing and representation – but we must think much more about representing, both because the digital space is very much about that and because it concerns the formation of identity and culture. For example, I have an alter ego in virtual space which is very different to my life in a Think Tank. So media literacy analysis must go beyond questions of decoding to broader questions which are, also, cross-governmental – about identity, privacy, culture, creativity.

- I've been working with young creative entrepreneurs in India, and this wider agenda reflects the reality of their lives. The policy agenda has not yet embraced the potential of digital technologies to give young people control over their identity and modes of exchange. The creative portfolio is one suggestion, but it doesn't sit well within the formal education system. I think increasingly a CV will be obsolete and managing your online reputation will be crucial. So, it's not just about where you go to school but all the domains you engage with and may gain validation from.

Rosamund Sutherland

- Keri asked me to address the question of what teachers should do in schools tomorrow. I'd be happy to take Gunther's suggestions – that they should propose knowledge seriously and make it significant. But schools are complex organisations, and we must ask how organisational change can come about. So I've been thinking about the work on complex dynamic systems: if





you want to change an organisation, you must change the patterning of interactions, practices and discourses within that organisation. How? For example, put conflict and tension on the table, instead of trying to avoid it. Make the tensions between different constituencies within the community explicit rather than skating over them.

- But still, we cannot get rid of classrooms and schools, four walls and teachers at the front. For if we break down the classrooms, we will no longer have spaces in which there is even the possibility that knowledge can be constructed. The idea of attention is crucial. The notion of personalised learning has come from policy makers, and it too easily descends into individualised customising, not about proposing knowledge seriously. I can't understand how, in the proposed personalised learning worlds, there can emerge the communities that will introduce people to new knowledge worlds. All this must be put on the table to discuss with teachers and educationalists.

General discussion

- Neo-conservatism in schools is definitely strong: in music education, for example, the problem of plagiarism means that A'level students are no longer permitted to compose music outside school. But in schools where exam results are less important, there can be fantastic work going on in the recording studios.
- There is also the problem that, the more radical educationalists propose new forms of social literacy practices, the more this will get co-opted by the formal system and create a 'literacy dividend' which the already-privileged will succeed with more than the disadvantaged.
- But on the other hand, while the offline world can be very restrictive, there are still many possibilities in the virtual world that can excite and stimulate learners.

- We need to decide what counts as technological expertise – is it being able to do a whole range of things, or being able to do one thing with technology really well? Expertise can be broad or narrow, and what is valued in different cultures varies. Some skills are transferable. Others are specialised. So, what do we want?

- What is our role as academics? Perhaps not to seek to influence policy directly, but rather to propose models, to see how different ideas might hold together, to raise possibilities and to see the possibilities that are out there.

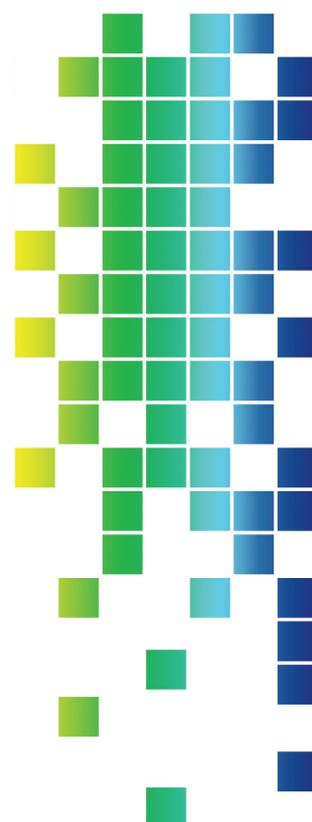
- New digital possibilities – like a Facebook page – are somehow positioned between a new literacy experience and lived culture; the role of education is surely to investigate that new space, and its relation to identity formation. But young people are also being commodified in these spaces, and that is significant too.

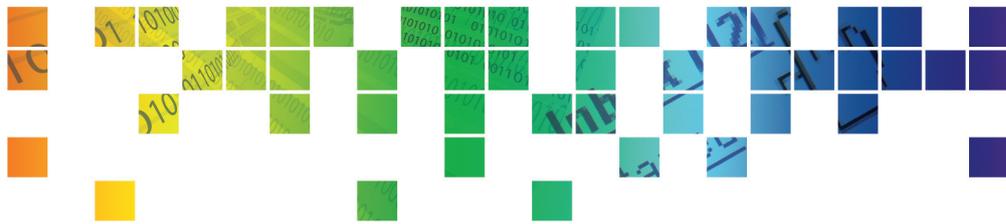
- Even if policy does rely on an evidence base, what happens in the classroom is still quite a complex transformation of that policy. It may not be what we academics intended.

- One way in which that happens is that new possibilities for everyone turn into advantages for some, resulting in further inequalities and new forms of isolation. To overcome this, schools need to think more inventively, turning common sense on its head and challenging existing norms and assumptions.

Seminar participants

Chris Abbott Kings College London
Victoria Armstrong St Mary's University College
Panagiota Alevizou LSE
Sakina Baharom University of Bristol
Sally Barnes University of Bristol
Cary Bazalgette European Media Literacy
Kate Brooks UWE, Bristol
Cathy Burnett Sheffield Hallam University
Sun-Young Choi Institute of Education, University of London
Barbie Clarke University of Cambridge
John Coleman Department of Education, Oxford
Angela Colvert UK Literacy Association
Sue Cranmer Department of Education, Oxford
Charles Crook University of Nottingham
Mike Cushman LSE
Caroline Daly Institute of Education, University of London
Maria Daniil University of Bristol
Ranjana Das LSE
Chris Davies Department of Education, Oxford
Skevi Demetriou University of Bristol
Wendy Earle BFI
Twm Ekanayake University of Bristol
Keri Facer Futurelab/ Manchester Metropolitan University
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Frances Giampapa University of Bristol
Lynda Graham UK Literacy Association
Lyndsay Grant Futurelab
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Martin Hughes University of Bristol
Tim Jay University of Bristol
Marie Joubert University of Bristol
Amie Kim Institute of Education, University of London
Gunther Kress Institute of Education, University of London
Elisabeth Lazarus University of Bristol
Sonia Livingstone LSE
Mary Lumkin BT
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Aidan Macfarlane

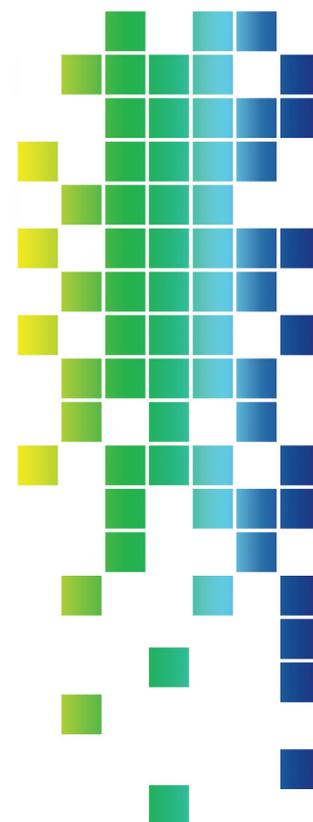




- Sasha Matthewman** University of Bristol
- Federica Olivero** University of Bristol
- Lydia Plowman** University of Stirling
- John Potter** Institute of Education, University of London
- Aristidis Protopsaltis** University of Reading
- Julian Sefton-Green**
- Neil Selwyn** Institute of Education, University of London
- Sue Timmis** University of Bristol
- Patricia Triggs** University of Bristol
- Kathleen Tyner** University of Texas at Austin
- Martin Waller** UK Literacy Association
- Yinhan Wang** LSE
- Ben Williamson** Futurelab
- Jocelyn Wishart** University of Bristol
- Shelagh Wright** Demos
- Zhang Yanqui** Communication University China (currently visiting LSE)



Speaker biographies



Chris Davies

Chris graduated in English at Selwyn College, Cambridge and gained a PGCE at the West Midlands College of Walsall. He taught in comprehensive schools in Oxfordshire, and was Head of English at Bartholomew School, Eynsham until 1985. He took an MSc in Educational Studies at the Department of Educational Studies in 1983. He came to Educational Studies in 1985, and gained his DPhil, entitled 'Ideologies of the subject and the professional training of English teachers', in 1994. Chris was originally an English specialist, and taught PGCE secondary English at the Department of Educational Studies for several years. He was Vice President of Kellogg College, Oxford University's college for part-time students, from 2001-2006. He co-ordinates the e-Learning Research Group and supervises research students in this field.

Chris's recent and current research activities mainly concern e-learning. From 1998-2003, he co-ordinated the Oxford-Intel Project at Educational Studies, which involved research into the development of new educational software, kar2ouche, as well as the development of ICT training materials for teachers. This project has resulted in several research publications with Peter Birmingham. From 2002-2004, Chris and Peter Birmingham worked with Oxfordshire Community Network, Oxfordshire LEA, and many Oxfordshire teachers to develop research into the implementation of broadband technology in Oxfordshire schools. This work was carried out in partnership with the Oxford Internet Institute, a leading world centre for research into the internet, and its social implications. Chris and Peter had a Becta Bursary to support further work in this area.

Chris is currently working with Rebecca Eynon, John Furlong and Yorick Wilks of OII on research into supporting adult learners using new technologies. Chris is a Research Associate of the Oxford Internet Institute.

Gunther Kress

Gunther Kress is Professor of Semiotics and Education and Director of the Centre for Multimodal Research at the Institute of Education, University of London. His work addresses questions of meaning in their interrelations with social and cultural organisation. In his professional location, the focus of his work is on learning and on the necessary shape of curricula and forms of pedagogy in a globalising world. His interests around representation and communication include all the modes through which a culture represents itself and in which meanings are made, as well as the dominant media and their social effects. He has focused on the development of social semiotic theory and within that theory developing understandings of the distinctive roles of different modes in human communication. His focus has been on the visual mode as much as on the modes of writing and of speech. His recent books include *Before Writing: Rethinking Paths to Literacy* 1997; *Literacy in the New Media Age* 2003; and with Theo van Leeuwen *Multimodal Discourse* 2001; *Reading Images: The Grammar of Graphic Design* 2nd edit 2007. His most recent book is, in press, *Multimodality: A social semiotic account of communication*.



Kathleen Tyner

Kathleen Tyner is Assistant Professor in the Department of Radio, Television and Film at the University of Texas-Austin. She is author, editor and co-editor of numerous books, articles, and curricular materials about media education, including *Literacy in a Digital World: Teaching and Learning in the Age of Information*, *Visions/Revisions: Moving Forward with Media Literacy*, *A Closer Look 2003: Youth Media*, and the award-winning, *Scanning Television II*.

Kathleen consults with NGOs and community-based groups to conduct research, development, evaluation and technical assistance for new media and technology projects. Her client portfolio includes Bay Area Video Coalition, the Miami Museum of Science, Texas Commission on the Arts, UC-Berkeley Pacific Film Archive (CA); Southeast Regional Education Service Center (UT); and the City of Portland Telecommunications Policy Committee (OR). International clients include the British Film Institute (London), Face to Face Media (Canada), Universidad Nacional de Educación a Distancia (Madrid/La Coruña); and ININCO, Universidad Central de Venezuela.

Kathleen serves on a number of community-based media boards and advisory boards, including the editorial board of the *International Journal of Learning and Media*. She is a recipient of the Jessie McCause Award in 2000 for outstanding contributions in the field of media education.

