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GROSSMONT-CUYAMACA
COMMUNITY COLLEGE DISTRICT

Education Master Plan
Information Submission Form

The Grossmont-Cuyamaca Community College District is starting a year-long process to develop an Educational Master Plan that will serve as the blueprint for our future. The Educational Master Plan is a long-range, comprehensive document intended to guide institutional and program development at both the college and district levels. The priorities established in the Educational Master Plan will serve to guide College and District decisions about growth, development and resources allocation.

As the first step in this planning process, everyone in the GCCCD community (faculty, staff, students and community members) are invited to identify and submit information sources to be reviewed for the trend analysis in one of six areas – society, technology, economy, environment, politics, and education. We are not asking you to do research, only to identify information you already have or that you encounter during the search period (March 21- April 25) and bring it to our attention for review.

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' Making a World that is Worth Living In' : Humanities teaching and the formation of practical reasoning

Melanie Walker

Arts and Humanities in Higher Education 2009 8: 231

DOI: 10.1177/1474022209339960

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'Making a World that is Worth Living In'
 Humanities teaching and the formation of
 practical reasoning

MELANIE WALKER
University of Nottingham, UK

ABSTRACT

This article considers humanities teaching as a vital space where students might develop their capability as 'practical reasoners'. The importance of this for self-development, but also for society and democratic life, is considered, while the economic purposes which currently dominate higher education are critiqued. An example is taken from the teaching of history to show how lecturers teach and students learn secular intellectual practices under pedagogical arrangements of communicative reasoning and ontological becoming.

KEYWORDS *capabilities, democratic life, history education, practical reasoning, teaching and learning*

If we do not insist on the crucial importance of the humanities and the arts, they will drop away, because they don't make money. They only do what is much more precious than that, make a world that is worth living in, and democracies that are able to overcome fear and suspicion and to generate vital spaces for sympathetic and reasoned debate.

(Nussbaum, 2006: 15)

INTRODUCTION

PHILOSOPHER MARTHA NUSSBAUM OFFERS A STRIKING ANECDOTE which in my view captures much of what is wrong with the purposes and direction of higher education today, certainly in the UK. She describes a visit to a Hindu temple in Illinois and a guided tour from a young man recently arrived in the USA from the province of Gujerat in India. As he showed her around the temple he recounted his own beliefs in the spiritual powers of the

Arts & Humanities in Higher Education

© 2009, SAGE PUBLICATIONS, Los Angeles, London, New Delhi, Singapore and Washington DC. ISSN 1474-0222

VOL 8(3) 231-246 DOI: 10.1177/1474022209339960

current head of the Swaminarayn sect of Hindus, distinctive, says Nussbaum, for uncritical obedience to a leader who is taken to be the direct voice of God. Nussbaum recounts how the young man pointed to the ceiling of the temple and asked her if she knew why it glowed. She said she did not know, confidently expecting an explanation invoking the powers of his spiritual leader. She continues: 'My guide smiled even more broadly. "Fiber optic cables", he told me. "We are the first ones to put this technology into a temple".' 'Here', writes Nussbaum, 'you see what can easily wreck democracy: a combination of technological sophistication with utter docility' (Nussbaum, 2008: 370). Her necessary point is that an understanding of advanced technology can sit all too easily with submission to authority.

Now it may be that this young man was not himself the product of a university education. Nonetheless we can still say, as Barnett (1994) does, that a university education 'is necessarily a process of becoming'. But Barnett then goes on to ask the most important question: 'what kind of becoming?' (1994: 190). This article takes up his question in order to explore humanities teaching and the formation of students as 'practical reasoners' in democratic societies, by which I mean people acquiring the knowledge and attributes to live comfortably and compassionately in their society and in the world alongside people different from them.

The article foregrounds the decisive importance in contemporary times of how humanities teaching in universities has a meaningful and delicate part to play in preserving and deepening democracy in the face of what Nussbaum characterizes as not so much the clash between cultures, but 'the clash within' each of us as 'we oscillate uneasily between self-protective aggression, and the ability to live in the world with others' (2008: 336). This involves, she argues, a struggle within the self, tugging us this way and that, between a delight in diversity and safety in homogeneity. We need, she argues, to foster a public culture (including universities) as contributing to public spheres of 'non-domination and equality' that can inspire us, even as 'fearful human beings', to value 'mutual aid and reciprocity' (2008: 374). Such a culture is fundamental to human security but is not well served by universities training 'useful profit-makers with obtuse imaginations' (2006: 15).

However, in recent decades, it seems that university education policy (if not its academic professionals) has been much more concerned with science and technology and with economic applications of knowledge. To be sure, internationally and nationally, higher education is regarded as central to the creation of intellectual capacity and the construction of knowledge and skills for participation in an increasingly knowledge-based world economy. Castells (2004) argues that if knowledge is the 'electricity' of the new international economy, then higher education institutions are the power sources on which

a new development process must rely. Higher education policy has thus focused on educational outcomes that support economic growth and enhanced individual incomes – a human capital approach to education which measures the returns to education and applies a cost–benefit analysis to decisions about education expenditure and profitability. That education should equip graduates with the knowledge and skills to participate in the economy is unsurprisingly the aspect that most concerns governments. But the problem arises when the meaningfulness of economic opportunities is not debated, and when goals such as intellectual development, equal democratic citizenship and broader social goods are overlooked.

In the UK, universities have been particularly intensively affected as bearers of the knowledge economy, to a degree somewhat different from the historical links between higher education and economic objectives. 'Serving the economy has become their *raison d'être*', suggests Holford (2008: 25). This is reflected, for example, in the 2003 White Paper on Higher Education with its emphasis on the language of human capital and business (DfES, 2003). Evans (2004) suggests that there has been a palpable shift from valuing independent and critical thought to valuing the marketplace and the economy. Even creative arts are recast as creative industries to 'transfer knowledge', expand economies, drive innovation, and improve competitive market positioning. For example, an Arts and Humanities Council fellowship is being funded to explore the relationship between university research in the arts and humanities and innovation processes in the creative industries because the creative industries 'are seen across the world as one of the key sectors of the future and governments are actively developing support measures to capitalize on a wide variety of their claimed impacts. In the UK the creative industries are regarded both nationally and regionally as critical tools for economic and cultural adaptation and development' (AHRC, 2009).

Similarly, in reporting on European social science and humanities Griffin (2006: 234) acknowledges the contribution of both to unique paradigms and to the education of citizens, but also prioritizes 'the contribution of our cultural heritages to national and European wealth'. On the other hand Parker (2007: 124), in considering what the humanities have to offer in Europe, warns against 'instrumental assumptions that need to be resisted'. Rather, she emphasizes the significance of multivoiced and complex narratives, of rhythms counter to those of the digital age, to offering disputed knowledge and learning to thrive in a supercomplex world. Generating economic growth as a direct impact is not mentioned. It is then fair to say that the arena of humanities education is contested, even though humanities may have been less affected by human capital public policies than other areas (but even this is debatable: for example, there has been a decline in funding for the humanities). In general

what is more interesting are the shifts in emphasis and discourse in public policy from creative and liberal learning with intrinsic value to learning that must *always* be for something else.

Moreover, in 2009 we find ourselves deep in a severe global economic crisis. Yet the focus on human capital outcomes in the UK and market policy drivers in university education have neither equipped us to avoid such an outcome, nor removed continuing inequalities at the heart of society. They are nowhere near to solving resurgent conflicts based on contested identities, cultures and religions, or human greed. Furthermore, universities are public institutions which ought, as recipients of public money, to be contributing in some way to a better society; with a participation rate still under 50% in England, graduates arguably have obligations beyond their own personal benefit, to others who have not had the advantage of a university education (Walker, 2009). How are students to learn this, and from whom?

PRACTICAL REASONING AND UNIVERSITIES

The argument put forward is that the humanities can respond to these concerns and develop the knowledge and ‘capabilities’ (Nussbaum, 2000) of students in ways which foster ‘the value of enquiry, the ferment of doubt, a willingness to dialogue, a spirit of criticism, moderation of judgment, philological scruples, and sense of the complexity of things’ (Eagleton, 2001: 12). To cultivate through the humanities the capability for practical reasoning and judgement and for an expanded moral imagination is to develop not only selves, but also attention to others and society (Booth et al., 2009). I have in mind not a scientific form of practical reasoning which envisages the agent as technocrat making choices based on an objective science of measurement but a form of Aristotelian practical reasoning in which discernment, perception, context and complexity all feature in choosing well (Nussbaum, 1990: 71). Why does this distinction matter for private citizens and for public policy? Nussbaum explains that we are often confronted with ‘unpalatable moral choices’ in which there is no clear right (or measurable) course of action, thereby demanding tough choices in a world of change, and confronting us ‘with ever new configurations, ever new situations for the determining of the virtuous course’. This requires, says Nussbaum (1990: 84) quoting Henry James, that we become ‘finely aware and richly responsible’ human beings, equipped with insight and practical wisdom, able to evolve our own view of the good or complete human life, and also able to use these insights to benefit others.

Bérubé (2006), Nussbaum (1997), Parker (2007) and Bates (2005), among others, therefore argue for the special importance of the liberal arts

(humanities) in being able to 'cultivate humanity' by fostering students' capabilities for examined selves, their narrative imagination, and their sense of themselves as world citizens with ethical obligations to others beyond national boundaries in a global world (Nussbaum, 1997). It is the humanities that 'teach people to think deeply and reflectively about the good life, the good society and the idea of the good' (Bérubé, 2006: 295), thereby suggesting an optimistic view of the potential of university education to bring about transformative change and to address human problems. This ascribes to the humanities a particular form of 'social utility' (Bérubé, 2003: 23) – not the utility of human capital which says that if education makes one a better economic producer it has succeeded, but a utility which highlights 'our struggles to grasp how things mean as well as what they mean' (Bérubé, 2003: 37). Bérubé explicates further:

Common to all enterprises of the Humanities . . . is the recognition that we are in the business of deciphering, or trying to construct and deconstruct meanings that make intelligible to us some aspects of this social world that we sometimes think we know . . . it is useful only to the extent that humans need to know the meaning of human affairs, past and present. (2003: 37f)

I take as fundamental to 'making a world that is worth living in' that we learn to reason together, modifying and revising our ends as we reach unforced agreements through intersubjective communication about the better argument in order to deepen democratic life (Habermas, 1989; Richardson, 2002). Such reasoning is oriented to 'figuring out the truth about what ought to be done' (Richardson, 2002: 76), including making judgements about which explanations have greater merit than others as we shift from 'reasons to reasoning' (Richardson, 2002: 83). In turn this requires of us that we respect the autonomy of our peer deliberators so that we are 'willing to offer one another reasons and arguments and to attend to the ones that others offer' (Richardson, 2002: 83). These ideas applied to university education would involve educating for 'wide-awakeness' (Greene, 1992; Nussbaum, 2006) so that we form people who can (although we cannot guarantee that they will) stop and think when apprehensive or angry or liable to irrational responses.

But we need also to be mindful that reasoning can be and is cultivated in diverse public spheres and spaces. Universities are not unique in this respect. We need to be clear what precisely it is that universities do that is distinctive in society. Here Marginson (2007) is helpful. He sketches two essential domains which constitute, he argues, the contemporary idea of the western, humanist university. These are the domain of communicative association, which requires 'the right to speak, and the conduct of dialogue on the basis of honesty and of mutual respect' situated within and across universities

characterized by ‘relationships grounded in justice, solidarity, compassion, cosmopolitan tolerance and empathy for the other’ (128). The second essential domain is that of ‘secular intellectual practices’. In pedagogical terms this domain would demand the opportunity for and achievement of ‘practices integral to productive intellectual activity, including curiosity, inquiry, observation, reasoning, explanation, criticizing and imagining’ (Marginson, 2007: 128). Marginson underlines the importance of this university knowledge project:

In forming knowledge, scholars and researchers remember what they know, and they think of something new. Then they each systematize this something ‘new’. This ‘something new’, the thing that scholars and researchers seek, emerges in a zone vectored by criticism and imagining. In the absence of this zone universities lose their driving force and their ultimate modern rationale. (Marginson, 2007: 128)

This second domain involves producing (new) knowledge as the key mission of universities, but each domain supports the conditions for the other to thrive. Indeed, Habermas (1989) would argue that, in the face of shrinking public debate, universities remain as one of the last places where the ‘lifeworld’ of personality, culture and society can flourish (Booth et al., 2009). For Habermas, scientific and scholarly learning processes are egalitarian and universalistic, sustained by the discursive debate that carries with it ‘a promissory note of the surprising argument’, the new viewpoint, the new idea (1989: 10).

TURNING TO PEDAGOGY

Thus universities ought to be spaces where the ‘lifeworld’ can be found both in research and teaching. The pedagogical project of practical reasoning is then one of the formation of distinctive intellectual practices under communicative conditions that are open and inclusive, grounded in academic practices that are truth seeking and reasonable. Put pedagogically, suggests Bérubé, ‘any reasonable proposition can and should be debated from any reasonable angle’ (2006: 290). It demands a plurality of perspectives, both popular and unpopular, but also that none of these ought to be shielded from robust criticism or obscured by a relativism that claims all views are equal. As Bérubé writes, ‘everyone is entitled to his or her opinion, and yet some opinions are more informed by the weight of empirical evidence and the historical record than others’ (2006: 291).

Pedagogy is thus located in the university’s key purposes of intellectual practices and communicative reasoning. But beyond this we also require attention to what Barnett (2005) describes as the need for an ‘ontological turn’ in university teaching, aligned with Marquez’s (2006) call for dissolving the

boundary between being (contemplation and knowledge) and becoming (action) as an individual and collective project of flourishing through the teaching of humanities. It demands, Marquez writes, that our students learn to become agents in their own lives and society, not mere spectators or, worse, 'strategic objects' in the economy. His ambition is to 'reinstate the university as the center of the development of human potentiality in all its power and diversity' (Marquez, 2006: 160). Such purposes would be particularly educational in a university system losing its way in the face of human capital demands (NEF, 2008; Walker, 2006). We then have three features: intellectual practices, communicative association and ontological being. While the first two may be distinctive to universities, the last is not. However we need pedagogies within the humanities that promote *both* knowledge *and* learning to be fully human so that in universities we educate citizens able to engage fully with the challenges of an increasingly interdependent, fluid and uncertain world.

This pedagogical and social importance of a university education and university educators cultivating reason and moral imaginations is summed up by Bérubé:

To be a professor in the liberal arts . . . is to try and enhance one's students' abilities and desires to participate in substantive discussion on and off campus, and to enhance their abilities and desires to compose written arguments about all kinds of complex texts . . . Professors who do those things will find that, whatever else they do in their lives as citizens, they promote the cause of democracy. (2006: 296)

How then might teaching humanities subjects provide resources and possibilities for fostering practical reasoning as a process of becoming and being, but also as a knowledge-based project?

AN ILLUSTRATIVE EXAMPLE FROM TEACHING AND LEARNING HISTORY

This article now turns to the teaching of history to illustrate the issues sketched above. Knowledge from history seems especially to foster the kind of practical reasoning described in this article. For example, Richard Evans says of history that it 'has all sorts of civilising functions for students'. 'I've always thought', he says, 'that the main justification for history is that it extends our knowledge and understanding of what being human means' (quoted in Hodges, 2008: 3).

This article draws on interviews with four history lecturers and ten of their students at one research-intensive university in the north of England.¹ While the focus of the research was on the research/teaching nexus, here the lens

shifts to a more specific concern with the work that teaching and learning history can do to form richly imaginative and critical understanding. The four historians varied in their own research interests: colonial southern Africa and liberation struggles (Robert Young), a post-colonial approach to colonial genocide (Peter Otto), twentieth-century Russian history (Judith Dowling), and early English cultural history (Jillian Marsh). There is no claim made that these voices of lecturers and students are either representative or comprehensive, especially not of history, historians or the diversity and number of history students. Indeed not all universities in England are research-intensive and selective; higher education is both stratified and diversified. Nor is there any claim made that the teaching described here is new or innovative (the latter a much over-used term in my view). The emphasis here is on the data as illustrative rather than representative, and on the capacity even of small-scale fieldwork data on lived experiences to generate rich narratives of practices and learning, as a form of grounded theorizing (Strauss and Corbin, 1997). The data are organized around Marginson's two themes to capture both the distinctive domains of university practice, while showing how at the same time the knowledge project in the humanities is also a distinctive ontological project of the formation of complex human understanding.

'Secular intellectual practices'

Turning first to the knowledge project – what kind of knowledge, why and how – history requires us to interrogate all the available evidence, and not just choose the bits that suit us; to search for meaning and narrative in and through this evidence and our own theories; to understand but also evaluate values; to construct provisional yet truthful knowledge which may be reconfigured in the light of new evidence or new conceptualizations (for example feminism, post-structuralism, globalization, post-colonialism, and so on); and, uniquely, enables our understanding of the present through an examination of past events (Anderson et al., 2006). Pedagogically, history ought to provoke thinking and demand that students are reflective, critical, honest, analytical and interpretive, cautious, emphatic and dialogic agents in a community of peers (Anderson et al., 2006).

Professor Robert Young explained that doing history involves 'looking at the questions which have been asked and adjusting or reconsidering things we thought we already knew' and then 'working from existing interpretations, through successive layers of detail and recognizing at every point that these different layers of evidence and interpretation constantly interrogate each other'. A historian needs 'scepticism, the ability to focus a critical questioning of both the published and unpublished record . . . not taking anything at

face value', and this means having 'concentration, enthusiasm, hard work, the willingness to recognize where you've gone wrong or suddenly realize that some of the assumptions and connections which you've been making have been misplaced and to know when to stop or rethink your starting point'. In turn students need 'to think critically and comprehensively about a range of perspectives' (interview, 5 March 2007). This process of discovering and constructing historical knowledge is 'reflective' and 'creative' (Dr Jillian Marsh, 6 March 2007) and demands 'passion' (Dr Judith Dowling, 6 March 2007).

Argument is 'absolutely key' (Jillian Marsh) to engaging in historical debates in a coherent and purposeful way. This requires marshalling available evidence, challenging information and assumptions (including our own), weighing up competing explanations and dealing with 'inconvenient facts', locating questions in wider contexts, and having both the critical knowledge, autonomy and confidence to defend an interpretation. The idea is not to tell students what the 'truth' is but to enable them 'to figure it out for themselves that it is slightly more complicated' (Dr Peter Otto, 26 April 2007). These capabilities are seen as crucial for living in a democratic society in which students are able to recognize what Judith Dowling describes as 'speaking Bolshevik', which is the idea that the regime has 'a certain kind of rhetoric and a certain way of speaking that you're supposed to do in public'. She described a student who, returning after a vacation spent working in a large supermarket chain, explained that they had had training 'using all this kind of advertising, commercial kind of rhetoric; when I went home to my Mum I realized I was talking Bolshevik!' Judith explains that she was pleased that it had made her think about the course more deeply 'but also about how things work in our society . . . that there are various discourses that are fairly ubiquitous in our society and infiltrate the way we think about things'. Similarly, Jillian Marsh describes how for her students learning about homosexuality in the eighteenth century opens out the opportunity for them to discuss tolerance, rights and liberty.

These four historians also described the importance of narrative and narratives in history, so that knowledge and narrative are embedded one within the other. To arrive at historical knowledge is to engage with narratives of different kinds. Both in research and teaching, it enables 'being able to take people to a foreign land . . . to be able to think about what it meant for someone living in 1930s Russia' (Judith Dowling). History fosters thinking imaginatively and empathetically about lives different from one's own so that students come at least to recognize that 'you can't just say the way I live is the best way to live and it's the only way to live and therefore it's a great way to live and I'm not responsible for the consequences' (Peter Otto). At the same time this ought not to take the form of 'subjective relativism which is

unable to prioritize points of view' (Robert Young). Students need instead to develop 'an informed critical understanding of the past and the ways a good historian can think about contemporary issues', because this is 'absolutely vital to an independent, democratic and progressive politics' (Robert Young).

Thus for these historians, gaining critical historical knowledge is central to the university education and to student learning. They foster secular intellectual practices which are robust, argumentative, imaginative and reasoned. In all four cases they sought to develop and implement those aspects of pedagogical arrangements under their control (for example forms of communication) to give all their students an equal opportunity to acquire such knowledge. Small group seminars of around 15 students were central in their pedagogical approaches and, while these groups may be under pressure to become even larger as funding is squeezed further, the approach is integral and valued in the department (see Booth et al., 2009 for a further example of a small-group teaching approach in history).

'Communicative reason'

Students were provided in these lecturers' classes with opportunities to achieve critical thinking oriented to communicative reason which questions ends and ethics, rather than instrumental reasoning which takes ends as given. This requires pedagogies which teach students to recognize the 'better argument' through an exchange of views with texts, lecturers and peers. It is arguably the case that for these lecturers each student was provided with the opportunity for effective agency and participation in pedagogical arrangements, which in all cases was sensitive to participation, confidence and voice on the part of all the students. For example, recognizing that 'it is difficult to find one's own voice', Peter Otto explains that he makes his students 'experts', 'especially the weaker ones', who know more than their peers about the topic they are researching for their dissertations so that 'even the quiet ones tend to dare to speak and have an opinion'. But, he adds, 'what I must not do is tell them in front of their classmates, "That's completely rubbish"'. At the same time he encourages constructive peer criticism because 'it gives them confidence because they are all commenting on each other's papers'. Robert Young highlights the importance of getting to know individual students, allowing students to make the connections between processes, events and interpretations so that pedagogy develops each student's mature capability for independent and autonomous working.

Secular intellectual practices and communicative reason come together in the formation of students, their 'becoming'. As Narend said of Robert Young, 'He always asks us questions or asks if we have questions. I think nothing is

accepted at face value in his seminars; he always make us look for the quirks and omissions [. . .] making you look for what's not there in the source material'. Or Paula, talking of Peter Otto's classes: 'It's kind of like we're educating each other' [. . .] I feel like now if I was debating with someone I could have a proper debate. I would know what I was talking about as opposed to having vague general ideas of what was right, of what I thought was right. Now I could say, "I think this is right because". It is in this formation we seek what impact the humanities might have on identities and ways of being, feeling, thinking and relating to others. Moreover, significant as the knowledge project is in what we understand to be a university or higher education, this engagement with historical knowledge and disciplinary content is made compelling by these teachers. Through the combination of their own love for the subject and pedagogy, they seek to make this passion and scholarship visible and available to students, 'creating value' through 'a systematic exploration of the discipline's vital processes' (Chambers et al., 2002: 7).

Student formation: Narend and Paula

How then did students talk about their own learning in, of and through history? How and in what ways did they say they had positively changed? There were variations in their responses: some were more critical, others were more instrumental. In the most powerful examples, students came to understand themselves differently and had acquired knowledge and reflexivity that were enabling them to weigh up the opportunities and life choices at this point in their lives. Such 'capabilities and functionings' (Nussbaum, 2000; Sen 1999) to be and do in ways that they valued being and doing were not evenly distributed and, given the diversity of student biographies, this is not entirely surprising; students took up learning opportunities shaped by their individual circumstances. What this section of the article seeks to demonstrate is exemplars of students' developing practical reasoning in order to point to what is possible.

I now turn to two particularly interesting illustrative stories of learning and the formation of practical reasoning from two final-year undergraduate students. However, the narratives of all 10 students provide a kind of backstage understanding which shapes and informs the analysis. I consider the accounts of their development in acquiring knowledge mediated through pedagogical processes of communicative reasoning generated by the nature of the subject – debating evidence and interpretation, reading texts and writing.

Narend, a student of Robert Young's, was studying the special subject on Liberation Struggles in Southern Africa, over two semesters meeting twice

weekly in seminars and by arrangement individually with Young. His own parents, of Indian descent, had left South Africa when apartheid policies were put in place in the 1950s, so that he was curious about the region and its history. He evaluated his own learning in terms of having become 'a better person', and explains what he means by this – 'less naïve', less likely 'to accept the mainstream view of events without really investigating them [. . .] I think the ability to rationally view arguments and try to put yourself out of yourself. I think that makes you good.' He suggested that 'you have to be really honest with yourself when you're analyzing data. Most people try and be unbiased and non-partisan, but I think it's incredibly difficult to do that [. . .] I do think debate is an integral part of trying to come to better historic judgments on things.'

Narend explained that he hoped to follow a career in the field of international relations, saying that 'I guess just studying something I'm interested in all along, it's made me decide that if I'm going to do a career, I want to do something I enjoy and something that's relevant to me [. . .] I think why should I just do something like banking if I'd rather, I think it's made me want to sort of follow my ambitions rather than just kind of go after money, so to speak.'

He articulates a complicated civic agency in formation along with his own hesitations and ambiguities. Learning to understand the other, and to cooperate, is not uncomplicated, he thinks, because, 'the idea that there's kind of a common viewpoint will never be fully realized', but 'learning helps you understand that we're not all the same. I think once you understand that, then it helps engender better relations between different groups.' His study of history, while enormously valuable, had also led him to confront the difficulty for individuals 'to really work against the tide' or to make a difference. Yet, he 'wouldn't want to be ignorant of this [. . .] once you realize the constraints you can work within them, then you can try and do little things that can make a difference [. . .] I'm not so sure if I'll be able, unfortunately, to make such a big difference. I think the role of agency in international relations isn't quite as great as people would hope it to be' (interview, 5 March 2007).

The second student whose learning I consider is Paula, a student of Peter Otto's special subject on Travelers and Explorers in Colonial Africa. She describes history as a 'human subject' which has fostered her understanding of people 'more than anything', making her 'cautious in judging people on stereotypes or making snap judgements'. She explains how learning to undertake a close and critical reading of texts has enabled her to 'take them beyond face value'. She recognizes how language works in forming critical reasoning. 'I never really thought about it before, but just the certain words

you use to describe something, certain metaphors you draw, the way how you write about something can tell you something about yourself.'

In turn this acquisition of knowledge had enabled Paula's awareness of her own viewpoint and of other lives different from her own, 'the way I look at news stories and things like that and the assumptions I make'. She comes, she explains, 'from a very white middle-class background, I come from a town [where] there's not racial tension because there are only white people, so it's very easy to make assumptions or hold views that you never have to test because you are only surrounded by sort of the same kind of people as you.' The course had made her 'reassess and think about my own prejudices and my own stereotypes'. But it had also generated confidence, which Bernstein (2000) argues is the basis of self-formation, in this case confidence in debate. Paula states, while debate 'was always quite big at my school, everyone held the same opinion, I think that was half the problem [. . .] I think I'm better at expressing my opinion than I was. I was quite inarticulate but seminars really force you to express your own opinion and talk.'

Paula feels she has changed in significant ways because of the way history has 'made me reassess my prejudices because that's very much, I mean, your judgements and your prejudices characterize the way you deal with the world and deal with people, read things, interpret things, things like that, and by having to look at that and challenge those being challenged'. Paula talked about her learning of history contributing to her 'quality of life' because she enjoys it and finds the subject interesting; she felt history had 'just broadened my opinions and sort of made me think outside my small world I guess'.

In turn, this knowledge has led her to review her future choices in the direction of a modest but promising civic agency so that 'I think I couldn't do a job now where I went home at the end of the day and couldn't sort of justify what I was doing [. . .] that said, I have no idea what I want to do [. . .] so, it could be difficult matching my ideals against the reality of the world, I'm not sure.' Even though, she says, she has not changed 'in any dramatic sense, it's made me just more aware of the way I look at the world [. . .] I think it is something that could, you know, if you choose the right thing, [. . .] maybe make a difference, I'm not sure' (interview, 2 April 2007).

It is certainly the case that, across the 10 students interviewed, not all were as thoughtful or as reflexive about their learning and future choices as Narend and Paula, but that is not the point I want to emphasize. Even where reflexivity was less nuanced, all the students appreciated the development of their capability to reason critically, and to apply this in their lives and their choices. For none of these students were economic opportunities the main motivator for their studies, although all were realistic enough to see that this was an issue. In different ways all 10 students saw their study of history

enabling them to pursue careers that they valued. A common refrain was 'I've decided this is what I want to do.'

CONCLUSION

It is arguably not a foregone conclusion that opportunities for practical reasoning will continue to diminish or that students must take on the identity of consumers, even if current economic and policy conditions have promoted this way of being over others. Habermas might characterize this as the human lifeworld 'breaking through' in university education (Booth et al., 2009). Is it not also the case that a narrow human capital agenda looks somewhat threadbare in current times, and business practices not necessarily the ones to slavishly implement? As Holford (2008: 25) suggests, do 'the rich and powerful really have all the best tunes'?

What this article has proposed is an argument for the fundamental significance of humanities knowledge, when taught well, as the basis for forming practical reasoning in university education. Under pedagogical arrangements of communicative reason and a knowledge project which seeks to promote secular intellectual practices, the humanities provide a distinctive space to form students' capabilities and ontological being as practical reasoners of the Aristotelian type. The emphasis is on transforming individual selves rather than groups or society, but it is precisely this individual transformation that is what universities ought to be engaged in (McLean, 2006). It is a good place to start when thinking about how change in universities might influence and connect into change in society, and how history lecturers might respond as teachers and researchers to and for a more generous human spirit in judging the quality of university education.

Moreover, colleagues and I (Booth et al., 2009) have noted hopeful stirrings from policy bodies: for example, the Quality Assurance Agency has recently commissioned the New Economics Foundation's centre for well-being to produce a report 'to give explicit consideration to quality from the perspective of the individual learner and with regard to the well-being of the wider economy, environment and society' (NEF, 2008: 1), in short 'making a world worth living in'. In this, the humanities are essential to foster Nussbaum's (1997) concern with critical selves, imaginative understanding and world citizens as constitutive elements of well-being for individuals and democratic society.

ACKNOWLEDGEMENTS

I would like to thank the history lecturers and students who agreed to be interviewed.

NOTE

1. The data in this article are taken from interviews conducted for a Higher Education Academy funded research project. The full project report is available as Walker (2008).

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BIOGRAPHICAL NOTE

MELANIE WALKER is Professor of Higher and Professional Education in the School of Education, University of Nottingham, UK. She is currently director of an ESRC/DfID funded project exploring professional education and poverty reduction in South African universities. Her research and teaching interests include the capability approach and social justice, higher education and public policy, widening participation, professionalism and professional education, and critical pedagogies. [email: melanie.walker@nottingham.ac.uk]

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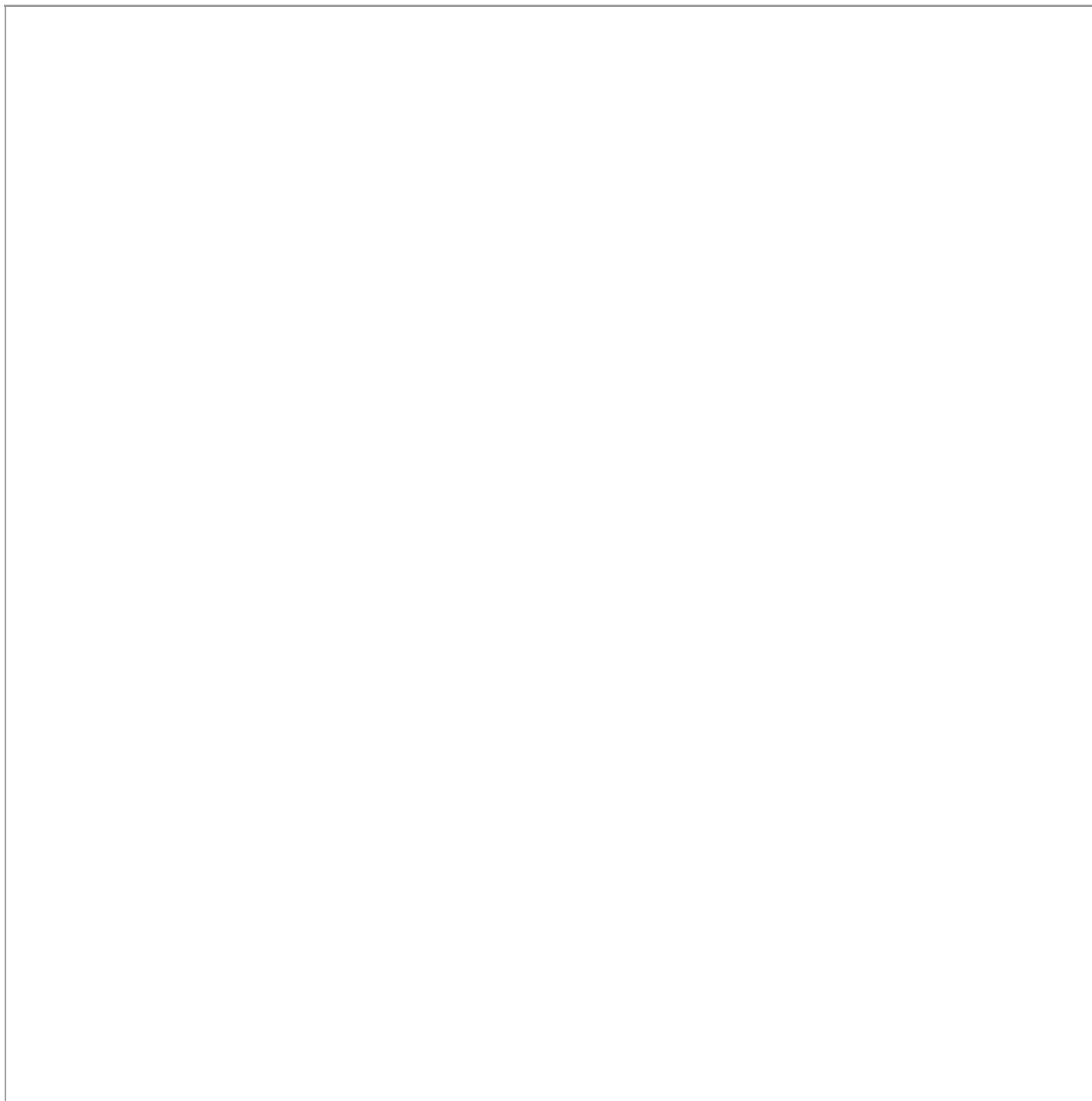
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Between School and Community: Situating Service-Learning in University Art Galleries

Carol S. Jeffers

California State University, Los Angeles

This paper explores the possibility of implementing a new campus-based model of service-learning in the unique environments of university art galleries. Guided by critical theory and a Deweyan pragmatist philosophy, this model promoted the use of constructivist learning strategies by 63 preservice teachers. Serving as facilitators, these preservice teachers worked with a total of 210 visiting schoolchildren in small groups to: a) address authentic intellectual, aesthetic, and social problems; b) actively negotiate and construct new identities; c) share multiple perspectives on and meanings about art; and d) learn to think critically and creatively about complex issues of teaching, learning, and boundary-crossing. Data from a variety of sources, including pre- and post-course attitude surveys and preservice journals, were analyzed and interpreted to reveal that preservice teachers greatly benefited from their service-learning experiences and changed their views of art, teachers, and learning in art gallery-museums.

In a postmodern society, various conceptual and programmatic boundaries between schools, universities, and communities can be considered unnecessary, even “unnatural” (Anzaldua, 1987); they serve only to create a metaphorical place known as the “borderland” (Anzaldua, 1987; Garber, 1995; Hayes & Cuban, 1997). In service-learning programs, students are expected to cross borders that needlessly separate educational experiences situated in schools from those situated in communities. Service-learners must enter the borderland and explore its unfamiliar terrain, which can exist not only ‘out’ in the community, but also, on their own campuses. This paper explores the possibility of developing and situating a new type of service-learning in university art galleries, where knowledge is constructed and contextualized at the edge of the campus in a borderland that lies between school and community. A hybrid, as it were, this campus-based model promotes significant collaboration between preservice teachers (members of elementary art methods classes) and students from area schools in the largely unfamiliar territory of a gallery borderland. In so doing, this model identifies a type of service-learning experience that makes a difference to prospective teachers and schoolchildren alike.

Framework for the Campus-Based Model

Based on Deweyan pragmatist and constructivist views of epistemology, cognition, and learning, this model was designed to combine experiential learning, critical reflection, constructivist practices, and service in the context of the “unique educational environments” of the two galleries located on the California State University at Los Angeles campus

(Zeller, 1987). In this model, then, service-learning and pragmatism are clearly connected and contextualized, as are critical reflection, thought, and action. Moreover, the notion that knowledge is both contextual and constructed is integral in the philosophy and design of the model (Liu, 1995). That is, knowledge of art, self, and others is actively constructed by students and preservice teachers in small groups or learning communities and situated in a particular place beyond the classroom.

This approach, which constituted a major component in two class sections of an elementary art methods course, invokes a kind of “border pedagogy” (Giroux, 1992). Such a pedagogy empowers students to cross borders, to work closely in order to understand themselves in relation to others—that is, to understand “otherness,” and to reflect critically on issues of race, ethnicity, class, and cultural heritage. It strives to create a metaphorical borderland in which diverse cultural resources allow for the development of new identities and relationships (Giroux, 1992). Fleshing out the theoretical and pedagogical framework of this model, then, the art methods students (who are themselves ethnically- and culturally-diverse, typically first- or second-generation Americans of working class backgrounds), began by questioning their own perceptions that art museums represent opulent cultural spheres reserved only for upper class patrons. In so doing, they began to collapse real or imagined class barriers and develop new identities and relationships within the gallery borderland.

Preparing to Enter the Borderland

As a part of their professional preparation program, these diverse preservice teachers are required

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Title: Attending cultural events and cancer mortality: a Swedish cohort study. In: Arts & Health 1(1): 64-73.

Author(s): Lars Olov Bygren, Sven-Erik Johansson, Boinkum Benson Konlaan, Andrej M. Grjibovski, Anna V. Wilkison, Michael Sjoestroem

Organisation(s): Department of Biosciences and Nutrition, Karolinska Institute, Sweden, Centre for Family and Community Medicine, Karolinska Institute, Sweden, Norwegian Institute of Public Health, Oslo, Norway, Department of Epidemiology, The University of Texas M.D. Anderson Cancer Center, Houston, Texas, USA

Categories: Arts, culture and health

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Reference:

Objectives: To examine the relationship between attending cultural events and cancer-related mortality.

Key Findings: Rare and moderate attendees were respectively 3.23 and 2.92 times more likely to die of cancer during the follow-up period than frequent attendees. However, this effect was observed only among residents of urban areas. The results, if replicated, suggest that promoting attendance at cultural events could lead to improved urban population health.

Methods: A randomly selected cohort of 9011 participants aged 25–74 years, was followed from 1990–91 up to the end of 2003. All participants self-reported to be cancer-free at the start of the research. The outcome measure of the study was cancer-related mortality. The main independent variable was an index of attendance at cultural events (cinemas, theater, art galleries, live music shows and museums). A proportional hazards analysis adjusted for age, sex, chronic conditions, disposable income, educational attainment, smoking status, leisure time physical activity, and urban/non-urban residency was conducted. Statistical analysis was applied to the findings.

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E-ISSN: 1530-9282 Print ISSN: 0024-094X

Vita Longa, Ars Longa: Aging, Longevity Extension Technology and the Arts

Wilson, Stephen, 1944-

[Leonardo](#), Volume 40, Number 1, February 2007, pp. 109-111 (Article)[PDF Version \(41k\)](#)

Subject Headings:

- Longevity -- Social aspects.
- Art and science.

In lieu of an abstract, here is a preview of the article.

Historically, artists have patrolled the borders of culture, alerting us to emerging developments and their cultural implications. Leonardo's 40-year history has been full of artists engaging technologies on the horizon that were only faintly grasped by the public. Here I focus on a development that promises to profoundly reshape our world and that cries out for more artistic attention: aging. While this is not a particular technology, it is an issue that emerges out of the interplay of many technologies and social structures. My awareness of the urgency of this trend was stimulated by participation in the World Technology Network [1]. Believing in the power of serendipitous encounters, James Clarke, the director of this organization, brings together innovators in diverse fields such as medicine, business, biology, materials science, government, art, venture capital and academia in a yearly conference. One of the most recent conference's speakers, Ziv Navoth, director of the Ver ve futurist think tank [2], identified several themes as critical for business and government to consider in long-term planning, one of which was the changing demographics of aging [3]. It struck me that the arts have been...

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Summary and Recommendations

Creativity plays a crucial role in culture; creative activities provide personal, social, and educational benefit; and creative inventions (“better recipes, not just more cooking”) are increasingly recognized as key drivers of economic development. But creativity takes different forms at different times and in different places. This report argues that, at the beginning of the 21st century, information technology (IT) is forming a powerful alliance with creative practices in the arts and design to establish the exciting new domain of information technology and creative practices—ITCP. There are major benefits to be gained from encouraging, supporting, and strategically investing in this domain.



INFORMATION TECHNOLOGY AND CREATIVE PRACTICES

Alliances of technology and creative practices have often emerged in the past. In the 19th century, for example, optical, chemical, and thin-film manufacturing technologies converged with the practices of the pictorial arts to establish the new domain of photography. Then, photographic technology became further allied with the practices of the performing arts, giving rise to the domain of film. The cultural and economic consequences of these developments have been profound. The emerging alliance of information technology with the arts and design has, this committee believes, even greater potential.

ITCP has already yielded results of astonishing variety and significant cultural and economic value. These results have taken such forms as innovative architectural and product designs, computer animated films, computer music, computer games, Web-based texts, and

interactive art installations, to name just a few. They have developed from individual, group, and institutional activities; the processes by which they have been produced have spanned both the commercial and not-for-profit worlds and the formal and informal economic sectors. The products of ITCP have begun to appear in many different countries, in ways that reflect cultural, economic, and political differences.

IT has now reached a stage of maturity, cost-effectiveness, and diffusion that enables its effective engagement with many areas of the arts and design—not just to enhance productivity or to allow more efficient distribution, but to open up new creative possibilities. There is a highly competitive race for leadership in this domain. The potential payoffs from success in the near- and long-term futures are enormous: billion-dollar industries, valuable exports, thriving communities that attract the best and the brightest, enriched cultural experiences for individuals and communities, and opportunities for global cultural visibility and influence.

By definition, there is no formula for creativity. But there are effective ways to invest in establishing conditions necessary for ITCP, in overcoming impediments, and in providing incentives. Furthermore, there are ways to recognize and reward creative contributions and to derive social benefit from them. In appropriate combination, these measures can add up to powerful strategies for encouraging, supporting, and reaping the rewards of ITCP. Development along with implementation of such strategies is the challenge addressed by this report.

MULTILEVEL STRATEGIES FOR ITCP

ITCP can be engaged at multiple levels—by individual artists and designers who deal with IT tools, media, and themes; in the structuring and management of cross-disciplinary research and production groups working in the ITCP domain; in directing educational and cultural institutions with interests in ITCP; at the level of regional development strategy aimed at fostering ITCP clusters; as an aspect of national economic and cultural policy; and in multinational collaborative efforts. All of these levels are important, and there are cross-connections among them. There is, therefore, considerable advantage in coordinated, multilevel strategies for encouraging, supporting, and benefiting from ITCP.

PROVIDING NEW TOOLS AND MEDIA FOR ARTISTS AND DESIGNERS

Individual artists and designers have experimented with IT since its earliest incarnations. Artistic exploration of the possibilities of computer graphics, for example, now extends back more than 30 years, and 40 years for computer music. As IT has matured and been assimilated into the mass market, the IT tools and media available to artists and designers have become both more diversified and more affordable. There are popular, standardized tools for performing such tasks as creating, editing, and distributing images, audio, and text; there are variants on standard tools customized to the needs of particular artists or designers; and there are highly specialized, purpose-built tools used by nobody but their creators.

To a software developer or an information services manager, it might seem that the keys to ITCP are simply equipment and software—developing and providing access to standard, commercial IT tools for artists and designers. This perspective is useful as far as it goes, and it can provide a good way to get started with ITCP, but in the long run it is an insufficiently rich or flexible one. We make our tools; then our tools make us.¹ Furthermore, software tools encode numerous assumptions about the making of art and design—precisely the sorts of presuppositions that truly creative practitioners will want to challenge. And the more software tools emphasize ease of use or familiar metaphors, the more they must depend on restrictive assumptions in order to do so. Such tools not only must be available, but they also must be objects of critical reflection; they must be open to adjustment and tweaking, they must support unintended and subversive uses—not just anticipated ones—and they must not be too resistant to being torn apart and reconceived. If creative practice can develop the powerful spaces and tools that it needs, like the electronic easel or electronic studio, these spaces and tools could help transform or enlarge the metaphors, spaces, and tools (office, desktop, files) that the rest of us have to work with.

The relationship between IT professionals and artists and designers will be of limited value if it is conceived simply as one of software (or hardware) producer and consumer. It should, instead, be one of flexible and thoughtful collaboration in which the roles of software designer and user are not rigidly distinguished. The advances made by IT researchers may suggest new forms of art and design practice,

¹Inspired by Marshall McLuhan, 1954, "Notes on the Media as Art Forms," *Explorations* 2 (April): 6-13.

while the questions raised by artists and designers may provide new ways of thinking about IT—ITCP work challenges the boundaries of traditional disciplines. Modular, reusable and recombinable code elements may support critical reconceptualization more readily than closed, proprietary software products. Open source development may provide better opportunities for cross-disciplinary collaboration, customization, and reconceptualization than tools developed and marketed as protected intellectual property—no matter how powerful and attractive those tools may be.

PROVIDING OPPORTUNITIES TO DEVELOP ITCP SKILLS

In general, ITCP depends on opportunities for learning across multiple disciplines—some mix of the arts and design plus IT concepts and tools. The growing numbers of artists and designers becoming skilled programmers or hardware developers, like the smaller number of computer scientists and technologists engaging seriously with the arts and design, demonstrates that this is feasible. But it is not easy: Colleges and universities focus mostly on established disciplines, and the cross-disciplinary programs that do exist vary widely in their institutional support, effectiveness, and quality.

Like other professionals, artists and designers can do more with IT if they become deeply conversant with its capabilities and limitations. Achieving that result requires far more than training on standard tools, and it also demands an ability to understand tools and media critically—in cultural and historical context. Such critical thinking about tools is much less typical of education and training in IT, a difference that contributes to the asymmetric participation of artists and computer scientists in ITCP. To date, it seems that artists and designers have made greater efforts to engage IT seriously than computer scientists and technologists have made to acquire deep understanding of creative practices in the arts and design. It is easier to find designers who can program than programmers who can design, or composers comfortable with signal processing than specialists in signal processing who can compose or perform at high levels of proficiency. This imbalance could change, with outreach to the computer science community and interest in ITCP among those who provide funding and other incentives and rewards.

Although motivated individuals can and do acquire complementary IT and arts or design skills, significant ITCP work can also be produced by cross-disciplinary partnerships between computer scientists and artists or designers. This approach has the advantage of requiring that fewer skills be mastered by individual team members, and it is often essential for large projects, but there are some inherent difficulties. Progress in collaborative ITCP requires effective dialogue

between artists and designers and IT professionals. Differences in professional culture, styles, and values, as well as communication problems, can confound effective collaboration. Yet there are strong traditions of successful cross-disciplinary collaboration in architecture (particularly as computer-aided design/computer-aided manufacturing (CAD/CAM) technology plays an increasing role), in film production, and in the creation of video games, and there have been some successful pairings of artists and technologists to produce visual works, performances, and installations.

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CREATING ENVIRONMENTS THAT SUPPORT ITCP

ITCP work can be done in many different places. And the diversity of venues matters, since each type of venue represents different tradeoffs and provides different combinations of opportunities, constraints, and comparative advantage. So an effective ITCP development strategy is likely to be a multivenue one.

ITCP venues may occupy physical or virtual spaces, be large or small, range from loosely organized collectives to formal programs, and be either free-standing or connected to established institutions. Specialized exhibitions, performance festivals, presentation and lecture series, conferences, Internet forums, and display and performance sites have all played important roles in the growth of ITCP communities. By contrast, mainstream arts and design organizations—museums, galleries, arts and design fairs, arts and design publishers, and so on—have played a lesser role, although they have begun to embrace ITCP more as the products of ITCP have played a larger cultural role and as these products have developed in quality and interest.

Much pioneering exploration of ITCP has taken place in studio-laboratories, which build on the tradition of earlier centers of cross-disciplinary research and education in the arts, design, and new technology of the time, such as Germany's Bauhaus in the pre-World War II years, the postwar New Bauhaus in Chicago, and the Center for Advanced Visual Studies established by Gyorgy Kepes at the Massachusetts Institute of Technology (MIT) in the 1960s. MIT's Media Laboratory has been among the largest and most visible, and it has generated affiliates in Europe and Asia. However, the Media Lab's combination of substantial laboratory and human resources with an atelier style of research and education, building on a consortium of industry funders, is difficult to replicate outside the context of a leading research university with strong industrial connections. Some universities, such as Carnegie Mellon University, have formed special cross-disciplinary centers that undertake ITCP, and several arts schools, such as the California Institute of the Arts and the Art Center College of Design in Pasadena, have transformed their curricula to incorporate

IT, yielding numerous focused ITCP activities. Some film schools have shifted their emphasis from traditional to digital production and distribution technologies, and most architecture and design schools have supplemented or supplanted drawing boards with CAD. Several universities have begun to develop cross-disciplinary study programs in aspects of ITCP. But a key challenge, particularly in times of tight finances, is to find effective ways to fund these programs—and to frame them in ways that are pedagogically sound and appropriately adaptive to the continuing evolution of ITCP.

In Canada and Europe, and emerging in Asia and Australia, major efforts are under way to develop standalone, government-backed ITCP centers. Such centers are typically conceived of as instruments of arts and cultural policy, rather than as equivalents of national research laboratories. This is an arena in which the United States lags. In principle, such centers can provide considerable flexibility and freedom of intellectual direction. On the down side, they are vulnerable to changes in government spending priorities, they can lose the very independence that makes them attractive if they shift to executing contracts from industry, and they are usually less able to draw effectively on the laboratories and human resources of large universities.

The technology required for ITCP can be expensive, and ambitious ITCP productions can require major funding. Given the breadth of ITCP, some funding is available through commercial channels. It normally requires close engagement with popular culture and mass audiences, with all the constraints and opportunities that this implies. This path is illustrated by the film and entertainment industries—these ITCP pioneers overcame difficulty and expense and now can produce major commercial successes. A focused example is the flourishing video game industry, a direct outcome of the rise of ITCP. It obviously would not be possible at all without the necessary IT, and its products define a new art form that also resonates with the general public. It has found some highly innovative ways to combine centralized research, development, and marketing with large-scale open-source strategies, and it has evolved unique distribution strategies.

Operating on a small scale and often producing innovative work through commissions from enlightened patrons is another group of players that straddle the boundary between commerce and the arts: Independent architectural design, product design, graphic design, and music and video production houses now make extensive use of IT tools and media, and they frequently have IT specialists on staff. In some cases, this amounts to little more than straightforward use of standard, commercial tools. But more adventurous and innovative houses have seized the opportunity, through IT, to open up some exciting new domains. This is particularly evident in the move of architects into CAD/CAM design and construction—with the resulting emergence of new architectural idioms—and the move of graphic designers into work that is more interactive.

Much important ITCP work occurs outside the marketplace. In addition to academic efforts, individual, independent artists and designers, operating mostly on a small scale, are responsible for a crucial

segment of ITCP. By virtue of their independence, they are well positioned to provide perspectives that challenge mainstream thinking and to engage industry as catalytic outsiders who can instigate new ways of thinking about products and processes. Many forms of traditional art production, such as painting and writing, are labor-intensive and modest in their requirements for investments in technology, but ITCP is often much more capital-intensive. This increased need for capital presents a chronic problem for independents; they often operate on a shoestring, struggle to get access to technology and expertise, and must make whatever technology investments they can manage from project-by-project funding. They usually depend on some mix of the gallery and patronage structures of the art world, arts foundation grants, and relationships with sympathetic educational institutions and corporations.

ITCP activity in all of these venues tends to cluster geographically. Fostering such clusters—with a vital mix of commercial, non-profit, academic, design and production house, and independent practitioner activity—can play an important role in regional economic development. There can be major direct benefits to local economies, and indirect (but potentially even more important) benefits in the form of better design and higher levels of innovation distributed over many sectors of the economy.

In addition, by its very nature, ITCP lends itself to efficient electronic connection of scattered islands of activity. Writers and photographers can submit their work electronically to distant publishers, architects can form geographically distributed design and construction teams, film studios in Hollywood can link electronically to postproduction houses in London or animation shops in Korea, and so on. That capability for connectivity is leading, increasingly, to multinational ITCP alliances and organizations. Such a capability can be particularly important in contexts—such as in developing nations—where the local culture supports some unique ITCP cluster and electronic connectivity adds value to that cluster by providing wider access to resources and markets. It is also important in contexts—such as those of Australia, New Zealand, and Singapore—where small but highly educated populations, combined with the effects of distance, make concentration on high-value, immaterial, information goods and services particularly attractive.

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FOSTERING THE CULTURE OF INFORMATION TECHNOLOGY AND CREATIVE PRACTICES

Providing new tools and media for artists and designers, providing opportunities to develop ITCP skills, and creating environments that support ITCP are all necessary to form thriving ITCP clusters, but

they are not in themselves sufficient. It is also essential to foster the culture of ITCP—the flow and exchange of ideas among those engaged, the development of a sense of intellectual community, the representation of ideals and values, and the recognition and validation of outstanding work.

The academic environment, in particular, is central to the future of ITCP. That is where talent is cultivated, and that is where research and practice of various kinds can take place largely without market strictures. At present, a gulf exists between computer science and the arts and design. Although some computer scientists bridge that gulf—and contribute considerably to ITCP—that activity often happens outside their department. Although some arts departments have been skeptical of “new-media” programs, in general the arts and design on campus have welcomed ITCP more than have computer science departments. The lack of welcome from computer science departments reflects a lack of appreciation of ITCP’s potential to contribute to the advance of computer science as a field, as well as concern about already tight curricula. At the same time, arts and design departments on campuses and arts schools have sought to internalize ITCP facilities and to develop their own research and teaching programs in ITCP. The situation echoes earlier efforts to formalize computer science as a field, establish a theoretical foundation for it, and provide it with some level of autonomy from its predecessor and sister fields. But it is important to explore the potential for constructive interaction between the arts and design and computer science before universities—and practitioners—conclude that “parallel play” is the way to go.

Building academic clusters is a nontrivial challenge. Not only are there cultural differences among the constituent disciplines, but there are also significant differences in expectations for funding, use of time, use of graduate students, definitions of what is acceptable work, and so on. Special centers, seminars, and other venues are being tried on campuses, a kind of institutional experimentation that is vital to developing ITCP. They help to frame and sustain ITCP projects. The time is ripe for academic experimentation with ITCP, from course content and curricula to institutional options and incentives.

Education, collaboration, funding, and professional advancement all depend on how ITCP is received. Because ITCP spans so many activities, there is feedback from the commercial space and popular culture—a powerful reinforcement on the design end—and there is more ambiguous feedback through academic institutions (faculty and administrators); publications, exhibitions, performances, and prizes, as well as those who select for them; and funders of research and the arts.

Because the field of ITCP is young and dynamic, ITCP production is hard to evaluate. Traditional review panels—representing funders; owners and managers of conventional display, performance, or publication outlets; and those making personnel decisions at academic institutions—may be hampered by their members’ ties to single disciplines and the absence of a time-tested consensus about what consti-

tutes good work in ITCP and why. This problem is typical of new fields drawing from multiple disciplines, albeit aggravated by the contrast between computer science and the arts and design. It is offset somewhat by a flourishing array of conferences and other forums, in both virtual and real space, that provide a sense of community and an outlet as well as feedback. Effective evaluation, validation, and recognition of ITCP work are essential for this domain to progress. Building on traditions in the arts and design, prizes can be powerful for stimulating and recognizing excellence in ITCP.

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A NEW FORM OF RESEARCH

ITCP can constitute an important domain of research. It is inherently exploratory and inherently transdisciplinary.² Concerned at its core with how people perceive, experience, and use information technology, ITCP has enormous potential for sparking reconceptualization and innovation in IT. In execution, it pushes on the boundaries of both IT and the arts and design. Computer science has always been stimulated by exposure to new points of view and new problems, which are ever-present in the arts and design. Because of the breadth of use to which artists and designers put different forms of IT, and because they typically are not steeped in conventional IT approaches, artists' and designers' perspectives on tools and applications may provide valuable insights into the needs of other kinds of IT users. The needs and wants of artists and designers can suggest new ways of designing and implementing IT. Engaging their perspectives is a logical extension of recent trends in cross-disciplinary computer science research.

Recently, for example, artists and designers have brought new concerns to the design and implementation of sensor systems, distributed control systems and actuators, generative processes and virtual reality, and the Internet and other networks. Their interests in performance and in engaging the public present challenges for system interactivity; their interests in improvisation present new opportunities for exploring human-machine interaction. Although artists and computer scientists have long interacted in such spheres as computer graphics and music, almost any form of IT may be adopted or adapted for uses in the arts and design. This flexibility of purpose parallels the plasticity of the computer itself—and that helps to explain why artists' concerns may motivate new combinations as well as new forms of IT.

It is important to recognize, however, that serious ITCP research goes beyond appropriation of established IT concepts and techniques for artistic or design purposes, or use of straightforward examples

²In transdisciplinary ITCP work, artists and designers interact as peers with computer scientists, a model that is described in detail in Chapter 4.

drawn from the arts and design to demonstrate the potential applications of new IT. It requires drawing on deep understanding of *both* IT and the arts and design to formulate scientifically interesting new questions in ITCP, and to see the subtle cultural implications of relevant new science. Issues arising from the arts and design have motivated challenging and important domains of computer science and technology research, such as three-dimensional geometric modeling and scene rendering directed at the practices and needs of designers and animators. Sometimes arts-oriented researchers raise cultural, social, ethical, and methodological questions for computer scientists that would not be obvious in a more narrowly focused technological context. Conversely, outcomes of computer science research may challenge artists and designers to rethink their established assumptions and practices (rethinking that includes an evolution from artifact creator to process mediator), as when architects engage the possibilities of curved-surface modeling and associated CAD/CAM fabrication techniques, or when photographers ponder the differences in the roles of digital and silver-based images as cultural products and as visual evidence. And there are areas, such as augmented reality, tangible computing, lifelike computer animation of characters, and user-centered evaluation of computer systems, that are probably best regarded as the joint outcomes of questions posed and investigations conducted by computer scientists and by artists and designers. These developments suggest that the value of ITCP lies not just in the capacity of each field to answer questions posed by the other, but also in the opportunity for each field to gain fresh, sometimes uncomfortable, perspectives on itself.

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MAKING ITCP HAPPEN

The broad scope of ITCP implies that it derives funding from both commercial activity—notably in design and entertainment contexts—and non-profit activity. The latter is where support is particularly uncertain yet essential, since it is in non-profit contexts that much experimentation takes place and some of the broadest public, participant access becomes possible. The hybrid nature of ITCP tends to confound its funding. In the United States, exploratory and productive work in the arts and at the non-commercial frontiers of design is likely to be funded by private philanthropy, while in computer science the leading funders of basic research are government agencies, often in support of specific agency missions. Computer science research grants are larger (by an order of magnitude) than grants (or prizes) typically available to artists—and they tend to be tied to the advances in scientific knowledge or the specific kinds of applications of concern to their funders.

Advancing ITCP requires new approaches to funding. A first step is recognition by both the arts and computer science patrons that topics in ITCP are legitimate; next must come support for exploration of the intersections between IT and the arts and design, and with that support for new kinds of technical and social and intellectual infrastructure for undertaking and providing access to ITCP. Those new approaches, in turn, may require new skills and participants in funders' decision-making processes. Grant program definitions should specifically embrace ITCP, but without that, progress in ITCP will depend on grant seekers' ingenuity in influencing program definitions and relating their ideas to existing programs.

In addition to monetary support, ITCP depends on resolving concerns about intellectual property rights. Not only does ITCP feature a broad range of content and a broad range of expression, but its production can also involve creative reuse or adaptation of previously generated content or expression. It also requires attention to the archiving and preservation of IT-based works, both those of a fixed nature and those designed to change through interactivity or other factors.

The rise of ITCP and the process of contemplating its future point to the need for better data on arts-related activities and trends. Although imperfect, the data available on scientific and technical research is better than that for arts activities. The lack of good data hinders effective planning and policy making.



RECOMMENDATIONS

Realizing the potential of ITCP requires actions on many fronts—by individuals, organizations, and funders of different kinds. The benefits will accrue broadly—in multiple sectors of the economy, geographic regions, and disciplines. Other efforts already address the roles of established arts institutions—museums, galleries, theaters, and so on—in relation to IT-based art works and performances. This report concentrates its recommendations on those most responsible for nurturing the talent and the explorations that are the essence of ITCP. The recommendations below build on discussions in the body of the report, which explores the ecology of creative practices and the components of the strategies through which ITCP can thrive.

FOR EDUCATORS AND ACADEMIC ADMINISTRATORS

1. Support the achievement of fluency in information technology (IT), and the development of critical and theoretical perspectives on IT, by arts and design students through the provision of suitable

facilities, opportunities for hands-on experience with IT tools and media, and curricula that engage critical and theoretical issues relating to IT and to information technology and creative practices (ITCP).

2. Support educational experiences for computer science students that provide direct experience in the arts and design, critical discussion, and formation of broader cultural perspectives—not merely as semi-recreational enrichment, but at a sufficiently challenging level to raise hard questions about the social and cultural roles both of science and technology and of the arts and design.

3. Foster exploration of ITCP through incentives and experimentation with a range of informal (e.g., workshops and seminars) and formal vehicles (e.g., centers, awards)—in particular, by building firmly and boldly on demonstrated local (and often small-scale) strengths and productive relationships already in place.

4. Support curricula, especially at the undergraduate level, that provide the necessary disciplinary foundation for later specialization in ITCP.

FOR FOUNDATIONS, GOVERNMENT AGENCIES, AND OTHER FUNDERS

5. Allocate funding not only to support work by specialists in established and recognized areas of IT and of the arts and design, but also to foster collaborations that open up new areas of ITCP.

6. Structure proposal review processes to encourage not only continued development of established and recognized areas of IT and of the arts and design, but also higher-risk, longer-horizon efforts to develop ITCP.

7. Provide program managers with more time and leeway to learn about new fields and new kinds of grantees; encourage mobility among grant makers, artists, designers, and computer scientists.

8. Develop a new grant-making category for tool (instrument) building, emphasizing designs that are extensible and tools that provide support for improvisation, and for providing broad access to the resulting tools. Expand research program support for work in aspects of distributed control, sensors and actuators, video and audio processing, human-computer interaction, information retrieval, artificial intelligence, networking, embedded systems, generative processes, and other technological areas that are critical to advancing ITCP, with a particular focus on arts-and-design-inspired applications of these technologies that extend beyond conventional uses.

9. Factor infrastructure and archiving and preservation needs into grant levels because this support is essential to enable future work in ITCP.

10. Support the establishment of new prizes for excellence in ITCP and the development of curated Web sites for its display or performance.

11. To support policy decision making, underwrite a better knowledge base—ranging from the history of ITCP to the details of who is doing what, where, when, and how—that parallels the knowledge base in scientific and engineering fields.

12. Underwrite research on the formation of creative clusters and the role that ITCP can play in promoting regional development.

13. Provide support for the creation and maintenance of networks of organizations (composed of participants from academia, industry, and cultural institutions) involved with ITCP.

FOR INDUSTRY

14. Seek opportunities to develop new products and services relating to the growing field of ITCP and to participate in the formation of ITCP clusters.

15. Pursue relationships with centers of ITCP activity, and seek opportunities to engage artists and designers who can contribute to the development of ITCP products and services.

FOR THE NATIONAL ACADEMIES

16. Organize a symposium series on Frontiers of Creative Practice (paralleling the Frontiers of Science and Frontiers of Engineering series) to bring together a cross section of young artists, designers, scientists, and technologists working within ITCP.

Beyond Productivity

Information Technology,

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William J. Mitchell, Alan S. Inouye, and Marjory S. Blumenthal, *Editors*

THE NATIONAL ACADEMIES PRESS
Washington, D.C.
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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

Support for this project was provided by the Rockefeller Foundation. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the sponsor.

International Standard Book Number 0-309-08868-2
Library of Congress Control Number 2003103683

Cover design by Jennifer M. Bishop

Copies of this report are available from the National Academies Press, 500 Fifth Street, N.W., Lockbox 285, Washington, DC 20055, (800) 624-6242 or (202) 334-3313 in the Washington metropolitan area. Internet, <http://www.nap.edu>.

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DAVID DRAKE, Senior Project Assistant
JANICE SABUDA, Senior Project Assistant
JENNIFER M. BISHOP, Senior Project Assistant
BRANDYE WILLIAMS, Staff Assistant

For more information on CSTB, see its Web site at <<http://www.cstb.org>>, write to CSTB, National Research Council, 500 Fifth Street, N.W., Washington, DC 20001, call at (202) 334-2605, or e-mail the CSTB at cstb@nas.edu.

Preface

Computer science has drawn from and contributed to many disciplines and practices since it emerged as a field in the middle of the 20th century. Those interactions, in turn, have contributed to the evolution of information technology: New forms of computing and communications, and new applications, continue to develop from the creative interaction of computer science and other fields. Focused initially on interactions between computer science and other forms of science and engineering, the Computer Science and Telecommunications Board (CSTB) began in the mid-1990s to examine opportunities at the intersection of computing and the humanities and the arts. In 1997, it organized a workshop that illuminated the potential, as well as the practical challenges, of mining those opportunities¹ and that led, eventually, to the project described in this report. Ensuing discussions between CSTB staff and people interested in the intersection of computing and the humanities or the arts, notably Joan Shigekawa of the Rockefeller Foundation, a participant in the 1997 workshop, culminated in a grant from the Rockefeller Foundation to study information technology and creativity (see Box P.1 for the statement of task).

This report should be read with two conditions in mind: First, it is, by design, a record of the project, filled with descriptions, observations, conclusions, and recommendations intended to motivate and sustain interest and activity in the rich intersection of information technology (IT) and the arts and design. Second, in this book form it cannot possibly convey the exciting possibilities at that intersection. Instead, it presents examples and pointers to sites on the World Wide Web and in the physical world where that intersection can be observed and experienced. We urge the reader to treat this report as a

¹See *Computing and the Humanities: Summary of a Roundtable Meeting*, published in 1998 by the American Council of Learned Societies, one of three collaborators with CSTB in organizing the workshop.

BOX P.1
Statement of Task

A series of discussions among a cross section of the arts community and experts in computing and communications will be organized. These discussions will crystallize new ways of conceptualizing joint opportunities and new approaches to the arts (and/or IT [information technology]). They will explore what would make the most conducive environment for IT-arts exchange on an ongoing basis, considering physical and virtual options. They will address possible mechanisms to sustain the discussion, such as funding and institutional support. Finally, they will culminate in both a coherent description of potential futures and an agenda for action, action that bridges the different communities as well as action most appropriate for one or another.

primer and guidebook and to seek out instances of IT and creative practices—ITCP—directly.

.....

COMMITTEE COMPOSITION AND PROCESS

The study committee convened by CSTB featured an unusually eclectic group of individuals (see Appendix A for biographies of committee members). Characterizing most (or all) of them as experts on particular subjects would only begin to suggest the talents of this group. Collectively, the committee had expertise and experience in the intersections of information technology and music, the visual arts, film, and literature and in art history, architecture, cultural studies, and many of the technologies pertinent to ITCP. The committee did its work through its own deliberations and by soliciting input from a number of other experts (see Appendix B for a list of those who briefed the committee). It met first in August 2000 and five times subsequently in plenary session. Additional information was derived from reviewing the published literature, monitoring selected listservs and Web sites, and obtaining informal input at various conferences and other convenings. During the editorial phase of the study, facts were checked for accuracy with either authoritative published sources or subject experts.

The diversity of this committee made it a microcosm of some of the communities it hopes to influence with this report. That diversity posed challenges in the conduct of this project that will be echoed in attempts to learn from it: Conversations among people with different training and professional experience can be confounded by jargon and

prejudices as well as by differing knowledge bases—even when those people share interests. The completion of this report attests to the potential for technologists and artists to find common ground, not only in undertaking creative work, but also in contemplating options for making such work easier to undertake and more widespread. But finding this common ground sometimes proved to be a formidable challenge.

The productive interaction among committee members was captured in some of their career developments during the course of this project. Chris Csikszentmihalyi, for example, left Rensselaer Polytechnic Institute to join John Maeda at MIT's Media Lab. Michael Century left McGill University for Rensselaer Polytechnic Institute. Natalie Jeremijenko was hosted by Jim Crutchfield for a month's professional visit at the Santa Fe Institute. And John Maeda was inspired by the project to build "a new online Bauhaus." These and other developments attest to the dynamism and creative energy of the people who have been exploring the intersection of IT and creativity.

Although the report refers to several companies, products, and services by name, such reference does not constitute an endorsement by the committee or the National Academies. The committee did not evaluate any product or service in sufficient detail to allow such an endorsement.

.....

ACKNOWLEDGMENTS

The committee is particularly grateful to Joan Shigekawa of the Rockefeller Foundation for initiating this study. She approached CSTB with a conviction that the time was right for a conversation among people of different backgrounds about how to enhance and sustain the intersection of information technology and creative practices. We appreciate her guidance and support through the study process, including her participation in two committee meetings, occasional relay of useful information, and continuing demonstration of interest in the process and the eventual results.

In addition, we would like to thank those individuals who provided valuable inputs into the committee's deliberations. Those who briefed the committee at one of our plenary meetings are listed in Appendix B. Others who provided us with important inputs include Bill Alschuler (California Institute of the Arts), Howard Besser (New York University), Shari Garmise (Consultant, Washington, D.C.), Samuel Hope (National Office for Arts Accreditation), Sharon Kangas (Center for Arts and Culture), Anna Karlin (University of Washington), Ruth Kovacs (The Foundation Center), Joan Lippincott (Coalition for Networked Information), and Laurens R. Schwartz (Consultant, New York City). We would also like to acknowledge those organizations that hosted committee meetings: the American Institute of

Graphic Arts, New York University, Stanford University, Pixar Animation Studios, and the Massachusetts Institute of Technology.

The committee appreciates the thoughtful comments received from the reviewers of this report and the efforts of the National Research Council's report review coordinator. The review draft stimulated a comparatively large volume of comments, many of which provided additional reference material, relevant anecdotes, and observations to bolster or counter the committee's earlier thinking. The comments were instrumental in helping the committee to sharpen and improve this report. In particular, Simon Penny of the University of California at Irvine provided an unusually extensive and thoughtful set of comments that served to improve the quality of this final report.

Finally, the committee would like to acknowledge the staff of the NRC for their work. Alan Inouye served as the study director with overall staff responsibility for the conduct of the study and the development of this final report; his effort to bring the report to completion was exceptional and demanded far more of his time than anticipated. Marjory Blumenthal, director of the CSTB, provided essential guidance and input throughout the study process, drafted and edited a number of sections of the final report, and was both helpful and patient in bringing the committee process to a successful conclusion. Margaret Marsh Huynh had primary responsibility for the administrative aspects of the project such as organizing meeting logistics; her efforts made a particularly complicated and demanding process run smoothly. Consultants Laura Ost and David Walczyk generated initial drafts of several sections of the report; Ms. Ost also edited several chapters. Susan Maurizi edited the manuscript for publication. David Padgham and Jennifer Bishop provided research assistance; Ms. Bishop also created several of the original figures that appear in this report (including the cover design). The committee also thanks Janet Briscoe, Janice Sabuda, and Brandye Williams of the CSTB, and Claudette K. Baylor-Fleming and Carmela J. Chamberlain of the Space Studies Board for their support of the committee's work.

William J. Mitchell, *Chair*
Committee on Information Technology and Creativity

Acknowledgment of Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

Anna Bentkowska, Conway Library, Courtauld Institute of Art,
Howard Besser, New York University,
Sandra Braman, University of Alabama,
Donna Cox, University of Illinois at Urbana-Champaign,
Robert Denison, First Security Company,
Steve Dietz, Walker Art Center,
Kristian Halvorsen, Hewlett Packard Laboratories,
Paul Kaiser, Independent Artist, New York City,
Alan Kay, Hewlett Packard Company,
Clifford Lynch, Coalition for Networked Information,
Simon Penny, University of California at Irvine,
Bill Seaman, Rhode Island School of Design, and
Mark Tribe, Rhizome.org.

Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations, nor did they see the final draft of the report before its release. The review of this report was overseen by Edward Lazowska, University of Washington. Appointed by the

National Research Council, he was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

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