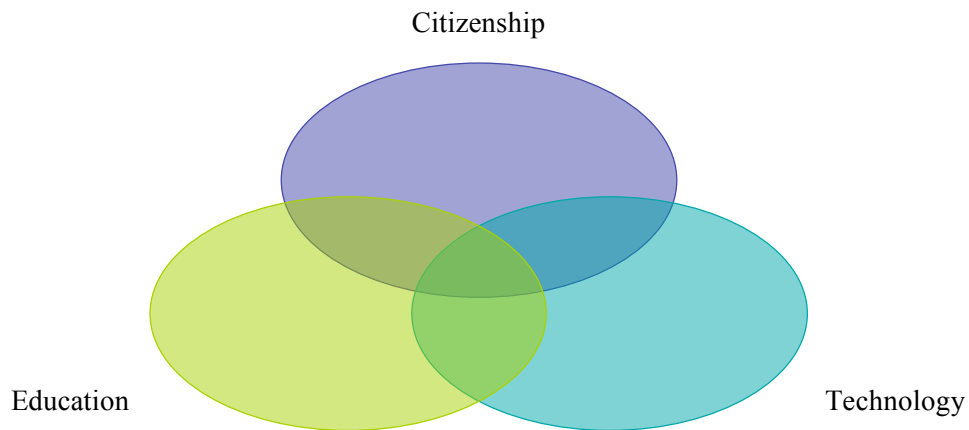


## Education and Citizenship in the Digital Age

Darin Barney & Aaron Gordon  
McGill University

In the Hall of Gonville and Caius College at Cambridge University there is a stained glass window depicting three interlocking circles. The window commemorates the logician John Venn who, among other things, built a machine for bowling cricket balls that made short work of the Australian batsmen who visited Cambridge in 1909 (O'Connor & Robertson 2005). Venn also bequeathed to us a means of graphing relationships whose elegance makes it equally at home in high school math classes and sophisticated philosophy journals.



A Venn diagram indicates eight regions (including the one outside the circles), and suggests a possible 256 Boolean combinations, the sort that make computers work (Venn is as important to the possibility of Google as he was to the perfection of googlies). Assuming that the phenomenon mapped by each of the circles is independently worthy of attention, the central region in a Venn diagram, where the circles intersect each other, defines a territory of particular complexity and significance. It locates the heart of the matter. In this case, the

heart of the matter is the territory where citizenship, education and technology meet.

What appears here graphically can also be rendered discursively: citizenship, however one defines its characteristics and practice, forever and always draws at least part of its sustenance from education; in technological societies, especially nominally democratic ones, citizenship must, in one way or another, come to terms with technology; and the presence of technology—as means, object and context—in the sphere of education is undeniable. Together, these relationships mark a territory of sorts. This special issue of *Techné* is devoted to exploring that territory, as it is being imagined and materialized in the period of technological dynamism currently underway in countries undergoing a transition to something called “knowledge” or “information” societies.

The discussions that follow emerge in the context of a particular constellation of social, political, economic and technological phenomena:

- development of sophisticated digital technologies of information and networked communication, and their rapid application and deployment across a wide range of social, political and economic practices and institutions, domestically and globally;
- emergence of novel and powerful biological and genetic knowledges and technologies that excite moral, ethical and political controversy;
- commitment by most “post-industrial” states to encourage actively the development and application of technology, as crucial to economic growth and material prosperity, national cultural autonomy, democracy and social well-being;
- neo-liberal restructuring of capitalist economies, domestically and globally, around priorities euphemistically styled as “innovation”, “flexibility” and “competitiveness”;
- increased attention to the role played by education and research in generating opportunities, innovation, and sustaining flexibility in knowledge-based economies;
- rapid integration of new information and communication technologies into educational institutions, practices and delivery at all levels;
- intensification of the relationship between private sector research and development interests and traditional public learning and research institutions, including the growth of private, for-profit, commercial learning enterprises;

- pressing crisis of democratic citizenship in most western liberal democracies, manifested in decreasing rates of formal political participation and civic engagement, declining levels of efficacy and trust in political institutions, diminished civic capacity and political knowledge, and normalization of violent protest and state repression of civil liberties;
- ongoing and widespread popular hope in the potential for new information and communication technologies to reinvigorate democratic citizenship and governance.

If the relationship between citizenship, technology and education establishes a territory, then these are the predominant features of its landscape.

Scholarly attention to these issues has been vigorous. Political economists have carefully specified the relationship between new information and communication technologies and globalized, post-Fordist capitalism, and have worked to situate the encounter between these technologies and education/knowledge within this broader, structural context (Noble 2002; Aronowitz 2000; Schiller 1999; McChesney 1999; Dyer-Witheford 1999; Robins & Webster, 1999). Public policy analysts have begun to investigate the education/technology nexus, and activists have drawn attention to the need for an educational focus on technological literacy (Lewis et.al., 2001; National Academy of Engineering 2002). An expansive body of scholarship examining technologically-mediated delivery of education, in a variety of forms, both inside and outside of the classroom has focused attention on issues of educational design, pedagogy, and performance in computer-mediated educational environments (Kuh & Vesper 2001; Cuban 2002; Moll 2001; *Canadian Journal of Communication* 1999). And, as is well known, the “culture wars” of the 1990s generated no shortage of heat surrounding the state of “liberal” education and the university (Levinson 1999; Nussbaum 1997; Reading 1996; Anderson 1992; Barber 1992).

The essays in this special edition speak to many of these concerns. What they add to them is the specific attention of political theorists and philosophers to the central issue of citizenship in technologically-dynamic society, and of the role that education might play in this relationship. What does citizenship mean in a technological society? What can we, or should we, expect from education in these circumstances? How has technology been involved in the ability of education to meet these expectations? These are the questions that the essays

gathered here—presented and debated at a workshop held at the University of Manitoba in June 2004<sup>1</sup>—seek to address.

Leah Bradshaw considers the relationship between technology and the “primary considerations of education and politics,” which she identifies as the abiding concern with mortality and fairness. Drawing on accounts of the relationship between technology and willing given in the philosophies of George Grant and Hannah Arendt, Bradshaw wonders whether contemporary ethical approaches to technology that are grounded in the discourse of “values” are capable of much more than reproducing modern technological consciousness. She goes on to explore the role of education and politics in cultivating the sort of character ethics that might make it possible to stand humanely in the face of technology, and closes with a profound meditation on the politics of refuge in thought.

David Tabachnick explores related ground in his examination of the Bush administration’s current “anti-science” policy concerning biotechnology, and the philosophical contradictions behind this position. Tabachnick juxtaposes the administration’s Aristotelian claim that technology must be subordinated to politics with its Heideggerian conception of technology as essentially dehumanizing and beyond control. Exploring the manner in which this contradiction has played out in the President's Council on Bioethics, Tabachnick shows how it has affected the possibilities of coherent public policy, science education, and citizenship in relation to technology more generally.

Contradiction is also a dominant motif in Edward Andrew’s critical essay on the academic economy of contemporary post-secondary education. Here, the contradiction is between the technological multiversity and scholarship. For Andrew the current economy of knowledge production—in which academic recognition is tied to economic success—converts scholars into researchers, and indebts them to various public and private dispensaries of capital. Contrasting the present situation with earlier ecclesiastical and patronage-based models, Andrew draws out the implications for scholarship of direct research funding by private corporations and the commercialization of intellectual property. At stake are not just academic freedom (as Andrew says, “he who pays the piper calls the tune” and there are “no free lunches”) but also the place of love in the soul of scholarship.

Ronald Beiner asks whether people can be educated to citizenship, and concedes the failure of politics to accomplish this purpose in the face of modern

technology. Beiner's essay proceeds to explore the possibility that architecture might succeed where politics has failed, and recommends that we turn our attention from theorizing public *reason* to philosophical inquiry and political investment into the civic possibilities of public *space*. In a nuanced reading of Hannah Arendt's political philosophy, Beiner argues for a "notion of citizenship as *constituted* by a sense of built civic space," and a corresponding civic architecture capable of evoking, against the worldlessness of modern technology, the ultimate meaning of citizenship: the "sense that public things matter."

Graham Longford is also interested in the relationship between citizenship and built environments—in this case the environment built through digital code. In Longford's view, the norms, rights and obligations of citizenship are encoded in the design and structure of digital networks. This leads him to a conception of "technological citizenship" defined by engagement with the technical codes and protocols that shape our inhabitation of technological environments, and by the capacity for agency in relation to the legislative character of technological design. Longford's essay examines the conditions under which such citizenship is either undermined or supported—including, for example, the "hidden curriculum of e-commerce"—and the ongoing political contests over their determination.

The "politics of code" is precisely what is at stake in Edward Hamilton's and Andrew Feenberg's essay on the affordances of online education. Against deterministic approaches to digital technology, Hamilton and Feenberg argue that "educational technologies only gain definition, functionality, and value in the framework of the pedagogical models they instantiate, the forms of social relationship they construct, and the educational goals they are applied to achieve." To illustrate, they compare two modes of online education: computer-assisted instruction, in which the representational capacities of the computer are directed towards automation and commodification; and computer conferencing, which emphasizes the communicative functionality of networks. Hamilton and Feenberg argue persuasively in favor of the pedagogy of communication, but their real contribution lies in demonstrating that neither model is a necessary outcome of the technology itself. Which will prevail depends instead, they write, on the struggles over design and policy that comprise the politics of technology.

Our collection ends with Langdon Winner, inventor of the Automatic Professor Machine and seminal figure in the critical theory of technology. Winner investigates the American euphoria that aligns technological novelty with greater

freedom, the latest symptom of which is the popular expectation that the Internet will deliver a reborn democratic citizenship. In characteristic fashion, Winner exposes the distance between such expectations and their realization in the context of contemporary American culture, politics and economy. This is cause for sobriety, but not passivity. Thus, Winner concludes with a call for political, as opposed to technological, innovation: democratic reform of the institutions that currently direct the course of technology in our midst.

Together, these essays testify to the role of philosophy in addressing the concrete challenges of living well in contemporary technological society. The authors gathered here are all educators, and so their reflections on education, citizenship and technology are not simply abstract, but rather a thinking-through of the daily reality of their vocation, as they see it. Obviously, each of them does not necessarily see this reality in exactly the same way. Nevertheless, there is a common note of urgency winding its way through these essays. It is not so loud as to drown out the nuances of thought that define the enterprise of theory, but nor is it so soft as to go unheard by those who also have an ear for politics.

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## End Notes

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