Canadian Education
Governing Practices & Producing Subjects

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Canadian Education: Governing Practices and Producing Subjects is an absolutely critical volume bridging a number of key areas in Canadian education – classroom politics, schools, teachers’ work, higher education, and much more – with the theoretical contributions of Michel Foucault. The result is illuminating, engaging, and critically provocative. The essays are carefully chosen and utilize Foucauldian concepts such as governmentality, discipline, subjectivity, and genealogy to excellent critical effect. With a skillfully crafted introduction that nicely brings the entire collection into sharp focus, the editors have provided a text that is a must read for critical scholars and students alike.

Mona Gleason, Department of Educational Studies, University of British Columbia

This excellent text presents a Foucauldian analysis of selected educational practices, contemporary reform initiatives, and current educational policy, in the Canadian context. The authors demonstrate how rich theoretical constructs such as bio-power, governmentality and disciplinary power can illuminate everyday practices and policies, making “the cultural unconscious apparent” (Foucault, 1989, p. 71).

Canadian Education: Governing Practices and Producing Subjects is essentially a hopeful book: it demonstrates the radicalizing role of theory as we try to understand and complicate educational structures and processes. This is an essential text for all those interested in Foucauldian analyses of education and a must read for undergraduate and graduate students in Canadian faculties of education.

Anne M. Phelan, University of British Columbia

This volume is most useful in the ways in which it achieves a close look and a wide sweep of education policy, its deployment and its effects, as these are embedded in schooling practices, educational strategies, and pedagogy. It offers the ground from which to consider the potential for education to be aimed at the development of a socially just citizenry while also helping to reveal the structures of power and processes of social control that operate within current neoliberal technologies of governmentality. It is against these that reform-minded educators and curriculum and policy developers can set themselves. While theoretically complex and original in its conceptual approach, this book is also practically informative and eminently readable, making it useful to teachers, school administrators, education policy developers, parents, students, and communities at all levels of the schooling spectrum.” Magda Lewis, Ph.D. Professor and Queen’s National Scholar, Queen’s University, Kingston.

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ACKNOWLEDGEMENTS

This volume is the product of a project that began several years ago when Kari Dehli and Jim Ryan decided to compile a set of chapters written by students and colleagues who were using the ideas of Michel Foucault in their work and writing about education and educational research. Over the time it took to bring this book to fruition, some of those who had originally planned to contribute decided not to, and others joined in as the project evolved. In addition, still others contributed by participating in the early planning sessions and in the many ensuing discussions we had about the book and its progress. So, we would like to acknowledge those whose work and ideas do not appear as chapters in this final product, as they indeed contributed to our understandings of Foucault and of Canadian education. Our thanks goes to the following people for sharing their insights and for supporting us in various ways at different points in the process: Maureen Ford, Eric Jabal, Fred MacDonald, Gada Mahrous, Andre Mazawi, Patrice Milewski, Veronica Pacini-Ketchabaw, Dominique Riviere, Michelle Stack, Coleen Stewart, and Lindy Zaretsky.

In addition, we would like to extend a special thanks to Kenneth D. Gariepy. As well as being a contributing author and content editor, Kenneth worked as our copy editor and indexer, and over this past year has helped us to finally bring the project to publication. We could not have completed the project without Kenneth’s expertise, not only as a superb editor and librarian, but also as a keen scholar familiar with Foucault’s ideas and texts—a rare combination that has been especially helpful in producing this volume.
INTRODUCTION

Over the past two decades, many scholars and students in the humanities and social sciences, including education, have demonstrated their interest in the work of Michel Foucault. In doing so, they have enriched theoretical and political debates, and contributed to philosophical interpretations of Foucault’s work. This collection departs from the majority of Foucault-related work by taking a more practical and applied approach: It provides concrete examples of how Foucault’s ‘methods’, ideas, and questions can be put to productive use in education research and practice across several sub-disciplines: history and sociology, administration and policy, and curriculum and pedagogy.

This volume focuses on Canadian education, including chapters that bring fresh perspectives on the formation of education systems, curricula and subjects, and on epistemological challenges that, we hope, will prompt readers to reconsider the terms and effects of contemporary debates about education reform and renewed commitments to standards and performance. In this way, the collection makes a contribution to Canadian content that is significant yet often underrepresented or neglected in the literature about educational history, policy, and practice in Western nations or on the international stage.

Highlighting work over a comprehensive range of areas and topics in education, this volume is not only the first to focus on the uses of Foucault in studies of Canadian education, it is, to our knowledge, the first and only with this emphasis that attends to Canadian content in any discipline that will also be of interest and relevance to areas of study, practice, and research beyond the field of education and beyond the Canadian border. Furthermore, we believe that this collection is a solid representation of an emerging and exciting body of work by promising Canadian scholars whose critical studies offer an alternative to mainstream or traditional analyses of timely and important social policy issues.

Drawing from different aspects of Foucault’s extensive and varied publications, each of the chapters helps us to rethink familiar questions in education research and practice. As we invited contributions, we asked each author to write a chapter that would examine, in their fields of education research, when, where and how Foucault’s questions can be of use to education researchers and practitioners. Yet, this is not to suggest that the book is a wholesale recommendation of Foucault or that the contributors and editors are ‘Foucauldians.’ Indeed, our approach is more strategic and pragmatic; some of the authors explore the limitations of Foucault’s work, while others integrate some of his insights, along with those of other thinkers, to develop critical perspectives on their particular questions.
The authors in this volume employ Foucault’s notions of genealogy. Foucault employed genealogy to situate present categories and problems in historical contexts, and to trace the historical making of terms and positions that seem familiar and obvious, including those assumptions that mark objectivity, subjectivity, and identity. In doing so, Foucault attended to mundane and procedural features of power and knowledge and to the particular sites where power circulates. He positioned his work as a challenge to historical analyses that focused on ‘great men’ or on the state as a ‘sovereign’ source of power to be controlled or challenged. One contentious political effect of this approach is that human subjects are radically de-centred; it is not individuals who are the targets of political critique but practices, techniques, and forms of domination or government. ‘Foucauldian’ scholarship argues that the subject can be traced in particular and contingent material, political, and discursive practices.

In this book, some of the authors make use of Foucault’s ideas about power as diffuse and microphysical to examine the forms and practices of schooling—the rules, standards, and categories that regulate, control and normalize the experiences and effects of schooling. Others trace how educational knowledge and educational practices give meaning to terms such as student, teacher or school administrator. Educational knowledge, in this sense, not only provides knowledge that children, youth, and adult students may acquire or discard; it also positions them as particular kinds of subjects, primarily that of student, but also as smart, creative, successful, competent, and so on. From this view, then, the very terms we use to identify ourselves can be traced in their historical formation, and they can be seen as effects of power.

The collection includes historical, philosophical, and field-based studies that employ a variety of research designs (e.g., archival, case study, critical and performed ethnography, media study) and methods for gathering data (interview, focus group dialogue, observations, document and textual analysis). Together, the application of ‘Foucauldian’ modes of inquiry to topics and issues of Canadian education allows an investigation of the following themes or ideas:

– Subjectivity, identity, bio-power, population
– Space, surveillance, normalization, discipline/punish
– power-knowledge, governmentality, counter knowledge/resistance

These themes or issues overlap and intersect across the chapters of the collection, but also emerge as examples of how Foucault’s perspectives and questions are used in particular ways, for particular purposes, and with particular results in Canadian education contexts—to produce and govern subjects who, simultaneously, produce and govern those knowledges and practices that shape and regulate the ways in which we live together and understand one another (or not) in the social world. This volume provides alternate ways of understanding the historical roots of selected educational practices, contemporary reform initiatives, and current educational policy and practice.

The editors of this collection have worked over several years to bring this volume to fruition. The original idea for the book came from conversations...
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Kari Dehli and Jim Ryan had about compiling work that students in their graduate classes were producing in response to their introduction to Foucault’s work and how it was influencing their questions about educational research and practice. This reflected the desire of Kari and Jim to have such a collection for subsequent classes to draw on not only for examples of the many ways in which Foucault’s work is utilized, but also specific to a Canadian context familiar and relevant to students. In this vein, we hope that the book will be useful to teachers and students of upper-level undergraduate college and university courses, teacher education, and graduate degree programs. Beyond the classroom, we anticipate that this compilation or its individual chapters will be of interest to the broad academic community, with scholars and researchers perhaps looking to the work for examples of methodological approaches or for a different take on substantive educational topics or problems. We also hope that, by bringing Foucault’s theory close to the realm of practice, this volume will help teaching professionals, especially in schools, colleges, and universities, to think about what they do and the effects of their work from a position that offers new understandings and alternative questions about public education.

While early on Kari and Jim invited students to contribute, over the time it took to produce this work, some of these students began academic careers and later reworked their chapters, some decided not to participate after all, and other scholars came on board at more recent points in the process. So, while the volume has been an evolving project, we acknowledge that the chapters are also indicative of the evolving scholarship of contributors and of scholarship reflective of a range of points among the academic careers of the authors. As mentioned above, we believe that the strength of the compilation is in its representation of the diverse ways in which Foucault’s ideas are drawn upon to think about education in Canada, but we furthermore see the collection’s diversity as reflective of the varied social locations, experiences, and research interests of the authors. Hence, in keeping with a Foucauldian critique of that which claims to be ‘whole’ and ‘correct’, we do not present this compilation as a definitive or comprehensive collection. We also wish to acknowledge that our ideas and arguments are defined by the perimeters and pragmatics of compiling a series of chapters into an edited book and by the always incomplete nature of the work we endeavour to produce and publish. We also hope that the work promotes the kind of immanent critique that, following Foucault, we hold as important. So we expect that our emerging ideas will illicit questions and criticism, and we believe that scholarship can only improve as long as we are willing to learn through the challenges and debates that our work engenders, and to be respectful of each other’s ideas.

ABOUT THE CHAPTERS

Through the process of putting this book together, at times we had different ideas about how to organize the volume but, due to its evolving nature, we ended up simply ordering the chapters alphabetically, by author’s last name.
In chapter 1, “Grade 12 or Die: ‘Literacy Screening’ as a Tactic of Bio-power”, Tannis Atkinson examines how the definition of ‘literacy’, embedded in neoliberal welfare regimes, is a key tactic in justifying the growing social inequalities in Canada, Australia, and the United States. During the mid-1990s, these nations, among others, undertook welfare reforms that radically transformed social assistance into a ‘contract’ which imposed obligations on applicants and asserted norms about self-sufficient citizenship. In Ontario, people applying for social assistance are now required to prove that they have secondary education, and that ‘literacy’ is not the reason that they are unemployed. While some critical attention has been focused on how workfare ‘responsibilizes’ citizens and on how the Organisation for Economic Co-operation and Development (OECD) has linked a particular literacy to economic productivity, little attention has been paid to how this ‘literacy’ became a critical tactic of neoliberal power. Atkinson aims to show that the education requirement within workfare regimes is much more than a neoliberal policy effort to manage marginally employed individuals or to disentitle them from social assistance; rather, it asserts a set of norms that justify structural inequalities that allow bourgeois subjects to thrive while forcing the most disadvantaged into living conditions that threaten their very survival.

Chapter 2 is entitled “Foucault, Authority, and the Possibility of Curriculum Reform in Secondary School Science Education”. Here, David Blades considers the contested space of teacher education and the attendant tensions arising between universities and schools. Specifically, he considers the case of a new curriculum initiative in science education which, in effect, resulted in little or no change to classroom practice and no improvement in students’ attitudes towards further studies or careers in science. Pointing out the limitations of structural conceptions of teacher education as they are generally conceived of in terms of competing discourses, either of the theoretical space of the university/college or of the practical space of the school classroom, Blades suggests that a poststructural analysis helps us to see the discourses of the different educational fields as productive power-knowledges, and not merely as the claims to truth of one side or another of an ‘either or’ debate. He concludes the chapter by suggesting that Foucault’s notion of the ‘specific intellectual’ provides a way for both university professors and school teachers to think of themselves as positioned and able to bring a critique to the assumed meanings that organize their professional spaces and knowledges, thereby allowing students teachers to learn in environments that foreground the possibilities of working together as educators, rather than maintaining and reproducing the differences that divide and promote antagonism in teacher education.

In chapter 3, “Partnering Power: Questions Posed from Governmentality”, Kate Cairns introduces the reader to the legacy of Canadian reforms that have resulted in a shift towards market-oriented model of public education characterized by new arrangements between business organizations and the school. Focusing on the concept of partnership, Cairns critically examines this new kind of public-private relationship as limited and problematic, not by asking whether or not partnerships are a form of marketization, but by asking how partnership operates discursively in
INTRODUCTION

the educational field. Specifically using Foucault’s concept of governmentality, she examines the conditions under which the notion of partnership has been made possible, and traces the related effects. By offering a critique of marketization that reframes the phenomenon in terms as neoliberal rationality that is operationalized by partnership technologies, Cairns helps the reader to understand how, through a multiplicity of diverse arrangements that emerge locally and contingently, partnership has come to circulate as a new ‘truth’ about education in the global age.

Sheila Cavanagh, Cara Ellingson, and Brenda L. Spencer’s chapter 4, “Subjectivity and Discipline: Women Teachers and Contradictory Norms of Recognition”, offers an examination of education discourses of corporal punishment and of the progressive education, mental hygiene, and child-centred pedagogy movements of mid-20th century Ontario, and considers how these discourses influenced women teachers’ understandings of themselves as effective educators. Working within a range of disciplinary practices, women teachers were required to employ both a hands-on and hands-off approach to classroom discipline. Utilizing the concept of subjectivity developed by Foucault and extended by scholars such as Walkerdine and Butler, the authors explore norms of recognition in participant interviews that reveal women teachers’ struggles to be effective disciplinarians and, therefore, good teachers, while negotiating discourses that shifted, overlapped, and contradicted. The implications of narrative and memory of the accounts are also considered. The difficulty that was experienced by these now retired teachers is revealed not only in what can be made sense of through conscious meaning making, but what might also be revealed about the unconscious in the participants’ accounts. In this sense, a psycho-social notion of subjectivity offers an important dimension of meaning about subjectivity for those researchers interested in historical interviews.

In chapter 5, Margarete Daugela writes about “Understanding the World Bank’s Education for All Policy as Neoliberal Governmentality”. By tracing intertextual shifts in policy over time, her chapter examines how discourse is constructed in particular ways within the same institution, at different times. Specifically, Daugela compares and contrasts the discourses of the 2001 and 2007 versions of the World Bank’s Education For All (EFA) policies. Guided by questions about how education has come to be exercised as a tool for integration in the international political economy, about what types of knowledge inform the creation of the key documents, and about how appropriate means and ends are constructed by the particular forms of knowledge manifested in EFA documents, this chapter reveals how education is understood to be the vehicle for improving well-being, particularly for those from lower income states, through its strong links to a particular kind of economic rationality.

In the sixth chapter, “Towards a Genealogy of Academic Freedom in Canadian Universities”, Kenneth D. Gariety argues a place for a Nietzschean-Foucauldian approach to the study of the freedom to think in the Canadian academy that would specifically interrogate the social construction of the academically ‘free’ subject. Using Foucault’s seminal essay “Nietzsche, Genealogy, History” as a basis upon which to critique the literature, Gariety then poses questions along the three domains of genealogy–truth, power, and ethics–intended to interrupt what is
commonly presented and accepted as the ‘history’ of academic freedom in this country, as well as the epistemological assumptions that inform its narrative. Through such an inquiry, he suggests, it is possible to learn something not only about how it is that the subject is free and unfree to think in relation to disciplinary power, but also about how academic freedom discourse operates in relation to the subject’s ethical behaviours and desires.

“The Social Construction of the Skilled Immigrant Worker” is the title of chapter 7, and here Michelle Goldberg looks at how workers from outside Canada are objectified, specifically as effects of the ways in which Ontario government policy related to apprenticeship trades served to organize individuals intertextually into labour categories and other discursive arrangements, based on particular understandings of skills, standards, professions, and qualifications.

Finally, in chapter 8, “Counting In, Counting Out, and Accounting For: The Administrative Practices of Standardized Literacy Testing”, Brenda L. Spencer examines how one provincially mandated accountability policy, the Ontario Secondary School Literacy Test, operates to construct social practices and relations and to constitute those in schools as the subjects of reform. As an orientation to empirical data, the research employs the concept of governmentality; it focuses on the effects of the administrative practices of standardized testing in a culturally diverse urban high school. Specifically, Spencer explores the ways in which the test is administered, through the rationality of accountability and the technologies of accounting and audit, as one dimension of the complex and uneven conditions of possibility of Ontario’s reform context. Data challenge what is assumed or self-evident in policy and practice, reveal the provisional and contingent quality of the terms and conditions of such reforms, and thus suggest that alternatives to the way we do things in schools can and ought always to be considered.
TANNIS ATKINSON

1. GRADE 12 OR DIE

‘Literacy Screening’ as a Tactic of Bio-power

Over the past decade, a significant body of work has explored the impact of neoliberal globalization (Rizvi & Engel, 2009) on all levels of education. The focus of much scholarship on adult literacy in advanced capitalist nations has been to critique the Organisation for Economic Co-operation and Development (OECD) project to explicitly link literacy to economic productivity through surveys starting with the 1994 International Adult Literacy Survey (IALS). For example, Walker (2009) asserts that OECD framing of literacy operates as the ideology of “inclusive liberalism” and Rubenson (2008) argues that indicators such as the IALS have been used to “manufacture a consensus” that “more strongly integrate[s] education into the core of labour market and economic agendas” (p. 257). Darville (1999) points out that, by measuring sight-reading ability, IALS constructs literacy as “the counterpoint of flexibility as labour force attribute” (p. 280) which will increase productivity and national competitiveness. Hamilton & Barton (2000) examine how the OECD framing reinstates a distinction between “vernacular and dominant literacies” (Barton & Hamilton, 1998) and Hamilton (2001) argues that the IALS tests occlude processes through which “certain literacy practices are supported, controlled and legitimated… [and] others are de-valued” (p. 179). More recent work has drawn attention to the importance of attending to how literacy reinforces power imbalances along lines of race, class and other markers of social difference (Blommaert, 2008; Collins & Blot, 2003). Hernandez-Zamora (2010) argues that market-oriented adult literacy policies may be “further deepening the gap between social groups whose unequal access to the knowledge economy has nothing to do with an ability to decode the alphabet” (p. 185).

Although much literacy scholarship points out that print materials never circulate outside of a material, cultural and historical context, relatively little attention has been paid to how definitions of literacy are used to produce subjects “within particular discourse sites” and how constructed identities “[serve] political and ideological interests” (Wickert, 1993, p. 37). In this chapter, I consider how the OECD’s 1994 definition of literacy was taken up during neoliberal reforms of welfare in Ontario, Canada. Starting in 1997, the province began a process of restructuring through which welfare shifted from a social program that guaranteed a minimum income to a system that required recipients to sign contracts outlining the responsibilities they were required to fulfill in exchange for benefits. Reforms to welfare were designed to reduce the number of people who apply for, are
eligible for, or continue to receive welfare benefits (Herd, Mitchell, & Lightman, 2005): the maximum benefit amount for a single person in 2009 was $7,020 a year, while Statistics Canada calculated that a single person in Toronto could not live on less than $17,954 (Monsebraaten, 2009).

To reflect the shift from a program that helped people in need to a program that aimed to transform non-productive subjects into workers, welfare was renamed Ontario Works. Welfare reform in Ontario was accompanied by administrative changes, including contracting out some portions of the intake process to private consultants. The “new business practices and the technologies to support them” (Herd, Mitchell, & Lightman, 2005, p. 68) increased the regulation and surveillance of people applying for benefits. Although the Ontario Ministry of Community and Social Services maintained authority to set regulations governing the program, responsibility for administering Ontario Works was transferred from the provincial to the municipal level. Starting in 2001 a mandatory literacy test was introduced; now every person applying for benefits who cannot prove that they have secondary education must take the Ontario Works Literacy Screening Test (Ontario Ministry of Community and Social Services, n.d.). The government document guiding how welfare offices across Ontario must use this test is Directive 8.3: Literacy Screening, Assessment and Training (Ontario Ministry of Community and Social Services, 2011).

My aim in this chapter is to mobilize Foucault’s concepts of disciplinary power, bio-power, and governmentality to consider how the mandatory literacy test, and the regulation governing its administration, operate as technologies of neoliberal governmentality. To undertake my analysis I sketch how a particular kind of literacy became one of the conditions that people seeking social assistance were expected to meet, outline how prevailing discourses of literacy and of entrepreneurial subjects emerged in tandem in Ontario in the 1990s, and analyse some effects of these changes. Looking at the role literacy plays in the current welfare regime in Ontario can, I believe, shed some light on the role of literacy in constructing neoliberal subjectivities and can illuminate how normative literacy produces and reproduces social inequalities.

**FORMS OF POWER IN NEOLIBERAL WELFARE REGIMES**

In works such as *The History of Sexuality, Volume I* and “Governmentality”, Foucault (1990, 1991) examines how political power shifted with the demise of monarchies in Europe; he concludes that sovereign power depended on the monarch’s ability to threaten citizens with death, while in modern societies power is a set of “mechanisms … addressed to the body, to life, to what causes it to proliferate, to what reinforces the species, its stamina, its ability to dominate, or its capacity for being used” (Foucault, 1990, p. 147). In the modern era, power operates by “optimiz[ing] forces, aptitudes, and life in general without at the same time making them more difficult to govern” (p. 141). This *disciplinary* power works to “qualify, measure, appraise, and hierarchize” in order to “distribute[e] the living in the domain of value and utility” (p. 144). By drawing attention to those
who do not fit, established norms structure what choices are available for individual subjects as they act to constitute themselves. Foucault also asserts that a defining characteristic of the modern era is that the “fact of living” (Foucault, 1990, p. 141) entered politics and became a target of transformation. In modern power, the “ancient right to take life or let live was replaced by a power to foster life or disallow it to the point of death” (p. 138), and this is kind of power merged in the bio-politics of population. Capitalism would not have developed, he argues, without mechanisms for increasing the number of bodies available, able and willing to work. Thus “economic processes” (p. 141) are supported by “numerous and diverse techniques for achieving the subjugation of bodies and the control of populations” (p. 140), including efforts to eliminate ‘degenerates’ and ‘abnormals’ in order to strengthen the population as a whole. In the new capitalist regime, the threat was not from “political adversaries, but those identified as external and internal threats to the population” (Stoler, 1995, p. 85). Thus, through the operation of bio-power, the state is authorized to act as the “protector of social purifications” (p. 81).

The term governmentality describes tactics and techniques of power which encourage individual subjects to act in ways that serve the interests of the population as a whole, “regardless of what the particular interests and aspirations may be of the individuals who compose it” (Foucault, 1991, p. 100). Since the 18th century when liberalism first sought to manage the “domain outside ‘politics’” (Rose & Miller, 1992, p. 180), political rationalities have framed problems in order to act on them, and increasing numbers of agents have been involved in defining, representing, and administering these problems. While liberalism assumes that individuals are free to make choices, the concept of governmentality draws attention to the “self in the world” as “a relation to an always open and ever-changing complex social whole, itself structured by relations of power, and necessitating techniques of governance” (Olssen, 2009, p. 91). Governmentality refers to the technologies which regulate individual conduct as an element of population, but also to the “problematic of government in general” (Foucault, 1991, p. 88). This notion draws attention to the particular “social-institutional and political contexts” (Olssen, 2009, p. 91) and historical moments within which processes of subjectivation occur.

FROM LIBERALISM TO NEOLIBERALISM AND FROM WELFARE TO WORKFARE

Foucault studied the neoliberalism promoted in the mid-20th century by the Chicago School, which constructed subjects as “entrepreneurial” (Peters, 2009, p. 103) beings. Neoliberalism denotes a shift from a liberal rationality, which viewed individuals primarily as beings involved in relations of economic exchange. Within neoliberalism subjects are “fashioned as free and autonomous entrepreneurs fully responsible for their presumably rational self-investment decisions” (Hamann, 2009, p. 43). Subjects are expected to use “market-based values in all of their judgements and practices in order to amass sufficient quantities of ‘human capital’ and thereby become ‘entrepreneurs of themselves’” (p. 38), and education is one
investment option open to them. Anyone who is not economically self-sufficient and actively investing in their own development is constructed as a problem only because they do not fit the norm.

Rose and Miller (1992) assert that neoliberalism should be understood as a kind of governmentality, a “re-organization of political rationalities” marked by “the proliferation of strategies to create and sustain a ‘market’, to reshape the forms of economic exchange on the basis of contractual exchange” (p. 199). The subject within neoliberal states is

less a social citizen with powers and obligations deriving from membership of a collective body than an individual whose...citizenship is to be manifested not in the receipt of public largesse, but in the energetic pursuit of personal fulfilment and the incessant calculations that are to enable this to be achieved. (p. 201)

While the tenets of neoliberalism espouse a diminishing role for government in the social sphere, neoliberal governments spend significant energy and resources enforcing market logic. Policies are based on the understanding that “competition between individuals can only be fostered through social mechanisms that are exclusively coded, ordered and reassessed by market values...[and] must be brought into being and maintained through social mechanisms of subjectification” (Hamann, 2009, p. 42).

During the 1980s and 1990s, governments in many advanced capitalist nations reduced spending on social services, shifted responsibility for social programs from the public to the private sector, and drastically restructured welfare systems. Market values and cost-benefit judgements were used to justify transforming welfare from a program of entitlement that ensured people did not starve to a contractual program that required people to be ‘productive’ in exchange for receiving benefits (Dean, 2007; Fraser & Gordon, 1994; Marston, 2008; Schram, Soss, & Fording, 2003). These changes were part of the larger neoliberal trend toward “responsibilizing” citizens (Ilican, 2009; McDonald & Marston, 2005). Neoliberal welfare reform was based, in part, on public discourses which asserted that people dependent on social assistance were a major drain on the economy, the government, and the population of taxpayers (Alfred, 2006; Harris, 2001; Myles, 1996; Sandlin, 2003; Schram, 2006).

Specifically, the spectre of subjects who are ‘welfare frauds’ constructs the ideal as an active subject who, starting in high school, begins to accumulate human capital by amassing educational resources. At the same time, the statement invokes the opposite: the person who is wasting their human capital rather than treating life as an asset to be invested in. The discourse of the ‘welfare fraud’ creates a hierarchy of citizenship in neoliberal regimes: unemployed persons are constructed as uneducated, devoid of useful skills and dependent on the state. In Canada, reduced social spending relied heavily on asserting that every citizen was “personally accountable for the deficit” (Thobani, 2007, p. 209) and simultaneously distanced deserving citizens from the “inherent unworthiness” (p. 210) of immigrants.
Lightman, Mitchell and Herd (2005) offer vivid evidence that the neoliberal welfare reforms in Ontario have forced particular groups of people into poverty. Their survey of individuals in Toronto who stopped receiving social assistance in 2001 found that very few people had found permanent jobs that paid a living wage, and that employment outcomes were the worst for people born outside of Canada. Respondents were more likely than others to be living in poverty; they were also more likely to be employed in ‘precarious’ temporary and part-time, low-wage jobs. Although these researchers do not use Foucauldian analytics to interpret their findings, their results offer a clear picture of how welfare reforms operate as bio-power that “foster[s] life or disallow[s] it to the point of death” (Foucault, 1990, p. 138).

REDEFINING LITERACY, RESHAPING SUBJECTS

While some critical attention has focused on how workfare responsibilizes citizens and on how the OECD has linked a particular literacy to economic productivity, little attention has been paid to how the current discourses of literacy have been mobilized to support neoliberal reforms. In this section I draw on Foucauldian scholarship to consider how dominant norms of literacy are operating within the political and economic context of neoliberalism.

Campbell (2000) argues that analyses of policy must pay attention to the “governing mentalities” (p. 33) which, through tropes, metaphors, and imaginary characters, shape popular discourse and serve to maintain relations of “social subordination, political exclusion, and economic inequality” (p. 223). She notes that discourses both mobilize specific ideas for people and institutions to use for particular purposes and limit how people can think about their situation and the options open to them. Further, she stresses the importance of locating how policies and practices connect to prevailing discourses and to the political and economic climate of specific eras. Campbell asserts that unless we pay attention to governing mentalities, efforts to reform policies will ignore “those who are politically vulnerable and economically marginalized” (p. 32)–women of colour and poor women–and will continue to subject them to intense scrutiny and coercion. Similarly, Hamann (2009) argues that it is vital to pay critical attention to how contemporary processes of subjectivation “continue to reinforce and expand … greater wealth disparity and increasing poverty” (p. 59), and how these processes produce a growing racialization of poverty and hierarchies of citizenship.

McDonald and Marston (2005) insist that “social policy researchers, activists, and practitioners… [must place] the problem of unemployment within a social context of power and authority” (p. 397). Using the example of the Job Network program in Australia, an early experiment in mandatory job counselling for people on social assistance, they analyze what modes of authority case managers use to encourage clients to embody “the right attitudes and behaviour representative of responsible self-government” (pp. 390–391). They note that case managers are empowered to use “coercive authority”, which forces clients to comply with “requirements which would not result in a greater chance of finding employment, but which would create some material hardship, particularly financial hardship”
These forms of authority are the means by which “the unemployed are enjoined to take up … the ethics of self-reliance and responsibilization” (p. 395) that are so central to neoliberal governmentality.

NEOLIBERAL DISCOURSES ABOUT LITERACY

In 1994 the first International Adult Literacy Survey (IALS) collected data in Canada, France, Germany, Ireland, the Netherlands, Poland, Sweden, Switzerland, and the United States. The survey was subsequently administered in a total of 20 countries; the major report of its findings boasted that “the survey covered 10.3 per cent of world population (United Nations, 1998) and 51.6 per cent of world GDP (World Bank, 1999)” (OECD & Statistics Canada, 2000, p. 87). The aim of the IALS was to “provide the world’s first reliable and comparable estimates of the level and distribution of literacy skills in the adult population, and [offer] new insights into the factors that influence the development of adult skills at home and at work” (National Literacy Secretariat, 2000, p. 1). The information collected was designed to inform “lifelong learning, social and labour market policies” (OECD & Statistics Canada, 2000, p. xii) that would offset the effects of “major structural changes in OECD countries” resulting from “internationalization of production and of financial markets and…increased competition” (p. 1). For the OECD, literacy is “a broad set of ‘information-processing competencies’ and a ‘multiplicity of skills’” but also a “particular capacity and mode of behaviour” (p. x).

Scholars of adult literacy have, for many years, explored literacy as sets of complex practices and have examined how literacy practices vary depending on the specific social contexts in which they arise and are used (Barton & Hamilton, 1998; Barton, Hamilton, & Ivanic, 1994; Breier & Prinsloo, 1996; Heath, 1983; Scribner & Cole, 1981; Street, 1995). In direct opposition to this understanding, adult literacy policies in many highly industrialized nations have become aligned to the narrow employment-related goals of the IALS (Darville, 1999, 2011) and use “productivity as [their] primary imperative” (Houp, 2009, p. 698). Governments manage program outcomes through increasingly rigid administrative accountability frameworks that require extensive reporting (Hamilton, 2001; Hautecoeur, 1997; Jackson, 2005; LoBianco & Wickert, 2001; Merrifield, 1997). As Crooks et al., (2008) state, in Canada adult literacy practitioners are concerned that “increased administrative demands [have] caused a considerable burden on program staff and in some cases affected quality of service” (p. 24). One effect of these changes is that programs increasingly serve those who face the fewest barriers and can most readily show improvement related to particular conceptions of literacy (Bathmaker, 2007; Hillier, 2009; Smythe, 2011; Veeman, Ward, & Walker, 2006).

When results from the IALS—and subsequent OECD surveys based on the same set of assumptions—were published, Canadian media reports of the findings announced that 48% of Canadians were unable to succeed because they “struggle with low literacy” (ABC Canada, 2008). Another common representation was that people who had low levels of literacy were a danger to themselves or others. This trope was taken
directly from the OECD/Statistics Canada descriptions of the IALS levels, which describe a person at the lowest level as someone with “very poor literacy skills” who “may, for example, be unable to determine from a package label the correct amount of medicine to give a child” (OECD & Statistics Canada, 2000, p. xi).

While the IALS test introduced the notion of literacy as a continuum rather than as a fixed attribute, it also ranked literacy into five levels. Level 3 is defined as “a suitable minimum for coping with the demands of everyday life and work in a complex, advanced society. It denotes roughly the skill level required for successful secondary school completion and college entry” (OECD & Statistics Canada, 2000, p. xi). The assertion that subjects cannot cope with “life and work in a complex, advanced society” unless they have completed secondary school becomes, in Ontario Works, the “suitable minimum” level required as proof of literacy by people who apply for benefits.

LITERACY DISCOURSES IN WELFARE REFORM

Ontario’s welfare reform began in 1997, and the mandatory literacy screening assessment was introduced in 2001. In this section I will examine the Ontario Works Literacy Screening Test (Ontario Ministry of Community and Social Services, n.d.) and the policy document, Directive 8.3: Literacy Screening, Assessment and Training (Ontario Ministry of Community and Social Services, 2011), which regulates the administration of the Test. Following Campbell (2000), I will pay attention to how these documents frame the links between literacy and employment, and what images, metaphors and characters they use to do so. I will examine how these documents operate as technologies of disciplinary, bio-, and governmental power to construct subjects and to mask certain realities.

LINKING LITERACY AND PRODUCTIVITY

Both the Ontario Works Literacy Screening Test and Directive 8.3: Literacy Screening, Assessment and Training explicitly link literacy and employment; both imply that secondary education is required for all jobs in Ontario. The Test includes a note that case workers must read to “applicants/participants… before administering the literacy screening test.” The first sentence states: “This test will help determine if your reading, writing and math skills may be a barrier to employment” (Ontario Ministry of Community and Social Services, n.d., p. 1). The Test does not ask what kinds of work the applicant has done in the past. Instead it begins with the question, “Do you have an employment goal?” (p. 1).

The Directive states: “Participation in literacy assessment and/or literacy training may be needed to assist participants in achieving employment goals and meeting local labour market needs” (Ontario Ministry of Community and Social Services, 2011, Application of Policy section, para. 1). Later in the Directive, the link between literacy and employment is made more clear: “The approved literacy screening questionnaire is intended to help identify whether an applicant’s or participant’s abilities may be preventing them from getting a job” (Ontario
Ministry of Community and Social Services, 2011, Literacy Screening section, para. 1). By stating that the goal of “literacy assessment and/or literacy training” is to “assist participants in achieving employment goals and meeting local labour market needs” (Ontario Ministry of Community and Social Services, 2011, Application of Policy section, para. 1), the Directive asserts that the needs of the labour market are the ultimate aim of the policy.

I argue that both of these documents construct individuals as responsible for being unemployed and in need of financial assistance; both assert that the cause of unemployment and financial need is the applicant’s lack of skills and abilities. By focusing on assessing subjects’ literacy skills, these documents enrol case workers in enforcing the notion that unemployment and poverty result from individuals not investing in their human capital. Both mobilize the image of the entrepreneurial subject as the ideal against which to judge those who have failed to achieve the “suitable minimum” level of education. However, this framing does not acknowledge any structural imbalances inherent in the labour market, such as the discrepancy between the number of jobs and number of people looking for work. It does not acknowledge systemic forms of discrimination that keep particular subjects unemployed, underemployed, or marginally employed (Arat-Koç, 2010; Bannerji, 2005; Kapsalis, 2006; Thobani, 2007). Nor does it acknowledge the fact that education systems perpetuate systemic advantage for white, middle-class subjects (Heath, 1983; Scheurich, 1994; Willinsky, 1998).

FRAMING LITERACY-FOR-WORK, FIGURING PEOPLE

In the past, individuals receiving welfare benefits would have been referred to as ‘clients’ or ‘recipients’; the Ontario Works Literacy Screening Test and the Directive, on the other hand, name these subjects as “applicants/participants”. Labelling people who receive benefits as ‘participants’ explicitly indicates that people who receive welfare benefits are expected to be active and independent. This label is a technique for asserting the neoliberal principle that social assistance is a contract between the state and entrepreneurial subjects. In this contractual relationship, the ‘participant’ does not have rights to a minimum subsistence income; rather, they can only receive benefits if they fulfill specific obligations. Naming ‘applicants’ as separate from ‘participants’ discursively reinforces the idea that everyone who applies is not automatically entitled to benefits. These labels are evidence of the notion that not all subjects are deserving of social assistance.

The second sentence of the Directive states: “All applicants and participants with less than a Grade 12 or equivalent education are required to take the literacy screening questionnaire unless confirmation of a learning disorder can be provided” (Ontario Ministry of Community and Social Services, 2011, Application of Policy section, para. 1). This statement asserts that only people with a proven learning disorder are exempted from the literacy requirement. That is, those with a disorder that marks them as medically or pathologically less-than-normal are not expected to have completed secondary education. This statement, I suggest, constructs them as subjects who are likely to be dependent.
The neoliberal entrepreneurial subject is reinforced by the manner in which the Directive explicitly names “self-sufficiency” as a goal. In a section titled “Reviewing the Results of the Literacy Screening Questionnaire” the Directive outlines what actions case workers must take after assessing an individual applicant’s test. Case workers are expected to undertake “a comprehensive consideration of a number of factors with the primary goal of supporting participants as they move toward self-sufficiency through employment” (Ontario Ministry of Community and Social Services, 2011, Reviewing the Results of the Literacy Screening Questionnaire section, para. 3). By stating that the primary goal is to make participants self-sufficient, the Directive articulates the government’s desire to be freed from the burden of paying benefits. It simultaneously makes disentitlement a contractual obligation of every participant who signs the Agreement.

POWER IN THE WORKS

The Test constructs the aptitudes and capacities that it wishes to increase while containing the threat posed by those capacities (Foucault, 1977, p. 138). The Directive states that the Test is an unconditional requirement of Ontario Works: “Applicants who refuse to take the literacy screening questionnaire are ineligible for social assistance” (Ontario Ministry of Community and Social Services, 2011, Application of Policy section, para. 7). To achieve its bio-political ends, Directive 8.3 outlines how workers are to use the Test. Case workers—or contracted ‘delivery agents’—have discretion about when applicants must take the Test; they are also authorized to interpret the results of the assessment. These workers are given authority to decide what the ‘participant’ must do to rectify their ‘literacy problem’ and to write the contract—called a Participation Agreement—outlining what obligations the participant must fulfil in order to continue to receive benefits (Ontario Ministry of Community and Social Services, 2011).

The Test can be seen as a technology of authority because “[a]ny participant can be required to take the questionnaire regardless of their education if literacy is a barrier to securing and maintaining employment” (Ontario Ministry of Community and Social Services, 2011, Application of Policy section, para. 2). While previous clauses of the Directive identify Grade 12 as the educational norm, this sentence introduces an undefined quality simply referred to as literacy. While the construct of literacy operates on one hand to define a set of norms by which eligibility for assistance is measured, it also operates as a quality that is open to interpretation. Thus, in inconsistently rendering the notion of literacy both static and fluid, this regulation opens the possibility for literacy to be called upon, at the discretion of the case worker, as a disciplinary tool. Applicants and participants are held in a state of uncertainty about their eligibility for Ontario Works because their educational credentials can be challenged at any time, not only when they apply for benefits.

To summarize, the Test and Directive 8.3 operate as technologies of disciplinary power because they clearly articulate the norm of literacy to which all subjects in
Ontario are expected to conform; bio-power is evident in how the documents construct knowledge about lack of literacy as a threat to the population and the economy. By defining how subjects in Ontario are expected to conduct themselves in order to maximize the competitiveness of the province, the Test is a tactic of neoliberal governmentality.

MASKED REALITIES

During the period in which welfare was reformed, the gap between rich and poor widened and the employment prospects of poor people worsened. For example, a 2005 report found that while the Canadian standard of living increased 43% between 1981 and 2003, the number of adults earning less than $10 per hour remained steady at one in six. These workers—who are disproportionately women (especially single mothers), recent immigrants (especially racialized persons), Aboriginal people and people with little formal education—tend not to receive any employment benefits such as supplementary health insurance. Further, they are unlikely to be able to move into better jobs (Saunders, 2005, p. v).

When Ontario Works was introduced, one of its aims was to reduce the number of people collecting benefits. Recent research has shown that the declining number of cases may indicate ‘success’ in neoliberal terms, but it masks the fact that most people who left social assistance did not find stable employment (Lightman, Mitchell, & Herd, 2005). Researchers have concluded that current policies serve the new economy because they force people off of welfare, rendering a faction of the population desperate for any work and, thus, establishing circumstances that allow for a “reduction of wages and conditions at the lower end of the labour market” (Herd, Mitchell, & Lightman, 2005, p. 76). That is, the current structure of welfare in Ontario serves to “ensure a ready and willing supply of labour for the lowest tiers of the labour market” (Lightman, Mitchell, & Herd, 2005, p. 103). Furthermore, it is important to note that the punitive effects of the current welfare regime are not equally distributed: People born outside of Canada are the least likely to find employment of any kind when they are disentitled from Ontario Works. That is, the discourse masks the growing racialization of poverty in Ontario. For example, the Colour of Poverty campaign found that racialized people are much more likely to be unemployed than those of European backgrounds…and most likely to be in low-status jobs. More workers are being hired in temporary and insecure positions. The Ontario Employment Standards Act does not adequately protect the rights of people in temporary and part time work, many of whom are women, racialized and/or newcomer workers. One in four workers in Ontario earns below the poverty line. This number is higher for women overall (31%) and women of colour especially (38%) (Colour of Justice Network, 2007).

Living in poverty means that racialized groups are less likely to be able to afford healthy food, potentially leading to poor health, and less likely to be able to afford...
adequate housing, resulting in high levels of homelessness. These facts reveal how neoliberal restructuring has the greatest adverse effects on racialized groups (Colour of Justice Network, 2007).

The Ontario Works discourses also mask the fact that Canada has a long tradition of devaluing education for working people, particularly basic education for adults. Adult literacy programs across Canada are under-funded and under-resourced and there is little initial or continuing professional development for instructors in these programs. Because of the range of provision and commitment between jurisdictions, working conditions range from unpaid volunteer work to low-paid contract work with no job security or benefits to salaried employment. In some places, adult literacy practitioners hold secure full-time jobs; in others the staff must apply for short-term project funding in order to offer, and be employed by, a program in their community (Woodrow, 2006). These material conditions result in extremely high staff turnover in many parts of the country. For students who seek adult basic education, few policies actively support their aspirations or recognize the barriers that make it difficult for them to find, or stay in, programs. In fact, two recent studies have both found that the current system of provision privileges students who can move most quickly through the system rather than the students who have the least formal education or who face the greatest barriers (Hoddinnott, 1998; Veeman, et al., 2006).

EFFECTS OF THE LITERACY SCREENING

The education requirement within Ontario’s welfare regime clearly serves its stated purpose of limiting the number of people who qualify for benefits. The literacy screening assessment, as defined and regulated by Directive 8.3, achieves much more. In addition to directing and managing the lives of people who are poor and marginally employed, the literacy requirement in Ontario Works asserts an educational norm expected of all subjects in the province. By indicating that all self-sufficient subjects in the province are expected to invest in their human capital, these documents operate as tools of disciplinary power. The disciplinary norm of literacy borrowed from the IALS “introduce[s] a break… between what must live and what must die” (Foucault, 2003, p. 254). It justifies why certain groups of people are forced into poverty and into accepting low-paying, temporary jobs with no benefits while other bodies are made to thrive. By normalizing the growing racialization of poverty, the Test and Directive operate as techniques of bio-power. In requiring all subjects to prove that they have invested in their education to the “suitable minimum” level of secondary school completion, the mandatory literacy test is central to the neoliberal project of responsibilization. Both the Ontario Works Literacy Screening Test and Directive 8.3: Literacy Screening, Assessment and Training are mechanisms for asserting that the economy relies on citizens’ self-sufficiency and productivity and that all subjects are expected to constitute themselves as entrepreneurs who undertake education as a form of investment in themselves as human capital. Furthermore, in detailing how to administer the Test, the Directive gives case
workers authority which enrols them in the process of enforcing neoliberal subjectivation. These effects make the Test and Directive powerful technologies of neoliberal governmentality in Ontario.

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2. FOUCAULT, AUTHORITY, AND THE POSSIBILITY OF CURRICULUM REFORM IN SECONDARY SCHOOL SCIENCE EDUCATION

INTRODUCTION: THAT IVORY TOWER CRAP

One of the pleasures of participating in a university teacher education programme is being visited by recent graduates who have secured teaching positions. One conversation during such a visit turned to the success of the student’s practicum and the lack of opportunities to use the principles of instruction introduced in pre-service education. The student acknowledged the usefulness and importance of the philosophical approaches advocated in the programme, but admitted that once in the classroom, there were few chances to actually use them. Surprised, I asked what prevented her from applying such instruction. Rather sheepishly, the student informed me that during a discussion with the classroom teacher who was supervising her practicum, she was advised to “forget the ivory tower crap” learned at university, a recommendation that was reinforced by the supervising teacher’s further comment that the student was now entering “the real world.”

Among classroom teachers, such perspectives on the effectiveness of teacher education are common (Fullan, 1991; Korthagen, Loughran, & Russell, 2006; Russell & Korthagen, 1995; Sarason, 1990). There is, of course, a tension in this stance: Generally, Canadian classroom teachers are themselves graduates of teacher education programmes that, presumably, have enabled some success in their teaching careers. But it is a truism that students in a teacher education programme typically find their field experience in schools to be the most useful and significant part of their teacher education (Blades, 2005). This experience, which is mandatory in all Canadian teacher education programmes, is typically seen as the “practical” part of the students’ education, and their university or college education the “theoretical” component. This theory-practice split (Russell & Korthagen, 1995) characterizes teacher education and is reinforced by supervising classroom teachers who believe that the “real world” only exists in their schools; all else, they suppose, is theory with dubious practical value.

The result of this dichotomy is classroom teachers’ almost fashionable distance from the theoretical discussions that animate university research and writing, strengthened by the axiom that universities and colleges are an “ivory tower.” This metaphor first appears in English in the 1911 translation of Henri Bergson’s *Laughter*, where he states that:

Each member [of society] must be ever attentive to his social surroundings... he must avoid shutting himself up in his own peculiar character as a philosopher in his ivory tower. (“Words to the Wise”, 2000)

_Ivory tower_ continues today to refer to “a condition of seclusion or separation from the world; in general, protection or shelter from the harsh realities of life” (“Ivory tower”, 2011), i.e., a removal from the “real world” of practice. In this way, classroom teachers’ descriptions represent a mildly derogatory critique inferring that when it comes to practice, university-based teacher educators are out of touch with the realities of classroom practice. To the charge of being out of touch, university and college professors can counter that their colleagues teaching in schools reproduce pedagogical approaches that do not reflect current theories and research about how students learn. They might also respond that teachers are too embedded in the day-to-day realities of teaching to see the bigger curriculum picture, and that they are too removed from the very theories that might enable change in a school system that still reflects outmoded, 19th century arrangements and practices. Caught in the middle are teacher candidates who must on one hand demonstrate to their professors an ability to apply the theories they have learned, and on the other must adapt to classroom teachers’ expectations, which often do not reflect these theories.

It is tempting to characterize the world of professors and the world of classroom teachers as two solitudes, each involved in the education of the next generation of teachers but holding competing or even incommensurable agendas. From this perspective, the gulf between theory and practice in teacher education is a problem to be solved once the existing structures in the two worlds are fully elaborated. Such structuralist approaches, however, are problematic in their assumptions and limited in their utility. Through an example of a curriculum implementation initiative in science education, in this chapter, I present a key flaw in the assumption that teacher education is enacted as two discourses, i.e., the theoretical space of the university/college, and the practical space of the school classroom. Drawing on the work of Michel Foucault, I outline how a post-structuralist approach to teacher education suggests a new view of this discourse, a hopeful perspective that invites the key players to adopt new identities as teacher-educator-intellectuals able to transcend in theory and practice the borders of our present situation, thus revealing possibilities for change.

**THE PEDAGOGY OF CURRICULUM CHANGE IN SCHOOL SCIENCE EDUCATION**

The Social Sciences and Humanities Research Council is the federal agency that regularly supports educational research in Canada. In 2005, however, for the first time, the federal agency that supports research in the natural sciences and engineering, the Natural Sciences and Engineering Research Council (NSERC), introduced a five-year, $5 million funding programme to support a series of university-based centres across Canada charged with the responsibility to research possibilities for improvement in Canadian school science education. This support exists in parallel with the more significantly funded Imperial Oil Foundation programme (1999-present) to improve the pedagogy of school science education across Canada (see Blades, 2001b; Imperial Oil, 2011).
Given the history of sustained science education curriculum development in Canada, this recent flurry of support for improvement in Canadian school science education is surprising. For example, in the 1980s, the now-defunct Science Council of Canada (SCC) conducted one of the most thorough studies of school curriculum undertaken by any country. The comprehensive study, conducted between 1980 and 1984, concluded bluntly that in Canada, “renewal in science education is needed. Now” (Science Council of Canada, 1984, p. 2). Similar studies in the United States confirmed that school science education in that country was in a similar state of crisis. During the 1950s and 1960s, fuelled by the paranoia of the Cold War, the United States dedicated vast resources–human and financial–to the development of science curricula that would encourage high school graduates to become scientists and engineers. This curriculum, imported virtually unchanged into Canada, had exactly the opposite effect; despite the best intentions of the designers, students experienced the new programmes as a bulimic pedagogy (Blades, 2001a) of the memorization of vast amounts of scientific facts they found dry, boring, and socially sterile. As a result, interest among secondary school students in a science-related career plummeted (Aikenhead, 1980; Beardsley, 1992; Stenhouse, 1985; Yager & Yager, 1985).

Acknowledging that the new curricula were not working, university educators began to argue that the focus of school science education should shift from recruitment to science careers towards the essential understandings of science, technology and society (STS) for citizenship (Hurd, 1975). In the mid-1970s, the STS approach to science education quickly became the focus of academic theorizing and research in Canada, which was one of the first jurisdictions to experiment with it. By the late 1970s, science educators in Alberta developed an STS approach to secondary school chemistry, and a science curriculum emphasizing the connections between science and technology was also introduced in British Columbia. Similar projects were introduced in Nova Scotia, Ontario and other regions of the country. Perhaps the most ambitious of all these initiatives was in Alberta, where in the 1980s and early 1990s, an STS approach to the entire secondary science programme was advanced through the writing of new curricula and textbooks, and then supported through extensive workshops for teachers. Across the country, these changes were promoted by university educators who argued that reorienting the science curriculum towards the kind of “science literacy” that enables civic engagement would be particularly appealing to students, while also ensuring that every graduate from a Canadian secondary school understood the nature of science and technology in modern society, and how STS issues affect the environment (Blades, 1997).

In the mid-1980s, to reflect the additional emphasis on environmental issues, STS was renamed STSE, and the approach was promoted nationally in the first pan-Canadian framework for curriculum development (Council of Ministers of Education, 1997). The first of the four foundations for this national curriculum overview states that:

Students will develop an understanding of the nature of science and technology, of the relationships between science and technology, and of the social and environmental contexts of science and technology. (p. 6)
Walk into almost any science classroom in a Canadian public school, however, and it becomes clear why agencies such as NSERC and the Imperial Oil Foundation have supported recent attempts to improve the science education pedagogy in schools: Despite almost three decades of development of the STSE approach, and extensive investment by provinces in reorienting their school science education towards the education of a scientifically literate citizenry, change in school science education remains mainly at the level of theorization. Little has been done to address the shocking lack of science education in elementary schools, and the practice of secondary school science is still organized by disciplines that are primarily taught as transmission of subject content, leaving little or no room for consideration of the role of science and technology in Canadian society. In essence, changing the science education since the SCC report in 1984, even with the development of a pan-Canadian science curriculum, has proven to be an academic exercise with little or no effect on school practice–curriculum development without implementation.

It is easy to see why corporations that depend on scientists and engineers, such as Imperial Oil, are concerned about the state of school science education. An Organisation for Economic Cooperation and Development (2006) study revealed that the decline in student interest in science-related careers continues its downward trend world-wide. Aside from self-interest, corporations, the Federal government, and the Canadian provinces are justly concerned that students will not graduate with the science literacy necessary to understand the role of science and technology in engaging increasingly complex and urgent societal and environmental issues, such as global warming and bioengineering.

Given the failure to implement an STSE approach to science education, it is time to consider whether the issue lies with the approach to curriculum change. In general, ministries of education adopt a structuralist approach to understanding and implementing curriculum change. Structuralism is widely used in the social sciences as a framework for analyzing phenomena through the explication of their underlying structures, with particular reference to the relationships among the elements in those structures (Cherryholmes, 1988). In education, structuralist assumptions appear in both analyses of, and prescriptions for, change. As Cherryholmes (1988) notes, structuralist approaches to the study of curriculum assume that curriculum change is a logical-rational, cyclical process consisting of structurally oriented investigations that inform educational texts, discourses, and practices, which contribute to structural prescriptions, which lead to structurally organized practices that are investigated structurally, and so on (p. 17).

Practically every ministry of education across Canada follows this pattern in its approach to curriculum renewal. When it comes to implementing a new curriculum such as an STSE science education, they adopt the unmistakable logic of technicality in assuming that the school curriculum can be changed if the relationships between the “factors” or elements comprising the school system can be explicated. That is, once the machinery is understood, repairs and modifications are possible to create a reformed or even new “product”; in this case, a new science curriculum.
With STSE, some of the factors considered by ministries of education to be necessary for the successful implementation of the new curriculum have been custom design of textbooks for teachers; teacher workshops focused on the change; hiring of support personnel to assist in the change efforts; and cooperation with school district administrators to help ensure adoption of the new curriculum (Blades, 1997). Yet the history of attempts to reform school science education in Canada urges caution in adopting the easy assurance that structuralist approaches are effective. For example, in my analysis of Alberta’s attempt to move its science education towards an STSE approach, I found that, despite the consideration of many factors operating in the structure of provincial education, and even though efforts were made to put all the support structures necessary for curriculum change into place, there was little or no effective shift in classroom practice towards the new approach (Blades, 1997). The fact that agencies such as NSERC support research into science education renewal is clear evidence that despite decades of investment—both human and financial—in structuralist approaches to change, there is little evidence that it has been successful.

In light of the school system’s well-documented resilience to change (Cuban, 1990), especially in the area of science education (Hurd, 1991), one would expect ministries of education in Canada to explore other avenues for curriculum change; however, structuralism continues to be the major method of analysis and the main approach. From a structuralist perspective, the difficulties of change are issues of technique; that is, theorists assume that we still do not have all the factors necessary to successfully effect change. The determined hope that it is possible to “get it right” is sustained by the belief that a method for effecting change can be discovered and applied generally to all educational situations.

One possible avenue for change is the education of the next generation of teachers. This hope supposes that new teachers, equipped with the latest forms of pedagogy and an understanding of STSE principles, will be able to implement the approach in their classrooms, as promoted in the provincial and national-level curriculum guides. As we have seen, that hope is usually disappointed, however, as soon as teacher candidates enter classrooms. Dealing with the pressure of getting a good evaluation in a climate of high stakes testing, and the suspicion that university professors live in an ivory tower divorced from the real world of classrooms, teacher candidates quickly slip into a classroom-based discourse of science education that is familiar, comfortable and expedient to their careers.

The failure to effect change in new teachers’ pedagogy is due, in part, to the failure of universities and schools to work together. From a structuralist perspective, there appear to be two mutually exclusive solitudes in science education pedagogy: the university educators’ world of theory, and the classroom teachers’ world of practice. Structurally, this estrangement can be analyzed as a difference in who holds power. As Sarason (1990) points out:

From the standpoint of the school system, the power of the university resides in its legally sanctioned role in preparing, certifying, or credentialing school personnel. School systems depend on these programmes for their personnel needs but they have little or no power to influence them … They see the
university faculty as having a more elevated status and, publicly at least, they accord them respect for superior knowledge and understanding of the educational process and its problems… in the educational hierarchy, university faculty are at the top. (p. 65)

Sarason reminds readers that school systems hold power in their relationship with universities by providing sites for teacher candidates’ school experiences, admitting university researchers to their schools, and by acting as the source of students for university programmes. He also notes that “the symbiotic relationship between schools and the university is marked by strong ambivalence” (p. 66):

School personnel often derogate the quality and relevance of their professional education, and university faculty look down upon the poor quality of our schools as in large measure due to the poor intellectual and personal qualities of school personnel. (p. 66)

The result, he claims, is a relationship where each agency goes about its business in ways that do not effect change in either institution— a dance of convenience maintained, it would seem, by each holding power in certain ways. This relation is further complicated by the fact that many faculty members in schools of education “have not thought of themselves as teacher educators … instead, they are specialists in subjects like sociology, psychology or reading” (Darling-Hammond, Bransford, Pacheco, Michelli, LePage, Hammerness, & Youngs, 2005, p. 451), whereas teachers in schools typically see themselves as experts in the practical skills required to be a good teacher. In this situation, the relationship between teachers and education professors is essentially competitive: Professors maintain the necessity of studies drawing from a wide range of disciplines, where the application of this knowledge rests largely on the teacher candidate, while teachers insist that such knowledge, while interesting, provides little practical value in developing the survival skills needed to teach in today’s schools (Darling-Hammond, Bransford, LePage, & Hammerness, 2005, p. 451).

This complex relation is particularly strained when a new curricular approach is developed at the university level, and translated into new approaches to school subjects that are subsequently mandated by governments. While teacher representatives are often involved in some aspects of the planning and implementation process, the reality is that for most teachers, curriculum changes “come from on high”, which exacerbates the relationship between university educators and teachers (Barrow, 1984). This can also become an issue in teacher education, where teacher candidates might take university courses that emphasize the new curriculum approach but find that approach ignored or even dismissed by the classroom teacher assigned to mentor the candidate during the field experience.

Upon such analysis, any attempt to solve the problem of implementing an STSE approach to science education through teacher education focusses on bridging the supposed gap between academic theory on one side, and practical knowledge on the other. Some proposed solutions include: more workshops for teachers (so they will understand theory); longer practicums for teacher candidates (so they will have time to try out STSE approaches in their
classrooms); cooperative bridging programmes, where teachers come to university campuses to share their expertise; and university-school partnerships, where academics spend more time in schools engaged in the supervision of teacher candidates, at the same time having the opportunity to share the latest research in school science education with teachers. Behind each solution is the assumption that teachers and university academics actually do live in different worlds, and that once these worlds are explicated, opportunities can be found for the meeting of theory and practice. This technical-rational approach to curriculum change conveniently ignores the barren history of structuralist approaches to curriculum change, especially in efforts to implement an STSE approach to science education in the schools of Canada. Given this history, it is appropriate to consider the role of teacher education in curriculum change from a new perspective that departs from structuralism.

A POST-STRUCTURAL LOOK AT TEACHER EDUCATION

Since World War II, European continental philosophy has increasingly challenged the rational assumptions of structuralism and positivism as part of a growing "hermeneutics of suspicion" (Riceour, as quoted in Dreyfus & Rabinow, 1983, p. xxiii). As Cherryholmes (1988) points out, this post-structural critique interrupts several assumptions of structuralism, including the centring of the individual in the construction of meaning, and the diminishing of "historic cultural traditions and values" through a "focus on structure at a point in time" (p. 31). Moreover, Cherryholmes argues that structuralist assumptions also "contain arguments that subvert themselves" (p. 31), referring to the assumption that meanings are fixed enough in the phenomenon under analysis to be reported, and that these meanings point to larger, transcendent signifiers that the researcher can discover. In other words, structuralism assumes that systematic knowledge of a phenomenon, such as education systems, is possible. Apart from the obvious problem of researcher bias, then, structuralism is further subverted by the elusive nature of transcendent signifiers, raising deep suspicions about the ability of any researcher to create knowledge claims. In the case of curriculum change, for example, the claims that teachers and university educators live in different worlds rests on the belief that such worlds exist and that they can be described using transcendent signifiers such as teacher practitioner, educational researcher, or (my favourite) science education. The issue with such taken-for-granted terms is the assumption that, as signifiers, they actually refer to things that exist, and that these things have fixed meanings in the system under analysis. Poststructuralist theory argues that an exact, transcendent definition of signifiers is impossible, since there is always an endless play of possibilities and meanings with signifiers. For example, when we used the signifier science education, what, exactly, is signified? Is reading about stars science education? Are students experiencing science education when they cram for a unit exam on the biosynthetic pathways of photosynthesis? Are traditional ways of relating to the natural world by Aboriginal peoples a form of science education? When a mother teaches her daughter the lore and uses of plants found in the forest, is this science education?
Post-structuralist research is therefore less concerned with the meaning of signifiers than how these signifiers come to be present, and their functions in the discourses that comprise present social practices. Foucault’s work contributes to these critiques by attempting to reveal the historical contexts of such discourses, specifically “those systems which are still ours today and within which we are trapped” (Foucault, 1989, p. 64). His radical contribution to 20th century philosophy is to identify the systems of relations that comprise this entrapment as power.

Foucault’s alternative view of power provides a different way to examine the role of beginning teachers in curriculum change. He maintains that what passes as knowledge, truth, and values in discourse maintains power relations. He steadfastly refuses the structuralist position that power is a commodity, i.e., something that can be possessed or lost. According to Foucault, power is productive, and it is the historical disruptions and present effects of its production that are of interest. In particular, he asserts that the production of truth and knowledge enables power relations. He argues that each society has its régimes of truth, its ‘general politics’ of truth: that is, the types of discourses which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true. (Foucault, 1977, p. 131)

Foucault is thus not interested in the structure of truth, or whether what is considered true in a social system is, in fact, true; rather, he is interested in how what passes for truth and knowledge operate to maintain the discourses that produce claims of truth and knowledge, and how this production in turn continues categories. In this chapter, I am concerned with the categories of professor and teacher.

TEACHER EDUCATION AND THE POWER OF AUTHORITY

A Foucauldian understanding of power in educational discourses requires first an examination of the historical disruptions that led to the existing discourse-practices. In the case of teacher education, the present relations between teachers and university teacher educators have roots in the movement of teacher education programmes to universities. In most provinces, pre-World War II teacher education occurred in normal schools, which offered a series of post-secondary programmes that led to certification. But the landscape of education changed drastically after World War II, with the focus on how schools might contribute to the security and economic prosperity of the nation (Blades, 1997). Increasingly, previous approaches to teaching and teacher education were seen as soft, if not antiquated. In the light of this “truth”, universities became “known” as leaders in understanding the psychology of learning and the dynamics of curriculum development, and as institutions possessing deep perspectives on the history and philosophy of education.
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(see Storey, 2003). The argument for expanding teacher education towards a university degree thus became compelling, leading provincial governments across Canada to relocate normal school programmes to colleges and universities.

This shift would not have been possible without the development of knowledge, such as theories of learning, which are invested with the belief that they are somehow more valid than practical experience. An entire system of truth and knowledge claims enables a university, or, at least, a faculty of education, to imagine its work apart from public education. This vision of separation and distinctness, coupled with the “truth” that professors have exceptional knowledge, contributes to the public truth that universities are institutions of prestige elevated in status above school systems.

The dislocation of teacher education from the intimate involvement of teachers was an essential step in the development of the “truth” that university knowledge is superior to the practical wisdom of classroom teachers. But the positioning of university educators above classroom teachers is subverted as teachers claim exclusive knowledge about what defines successful teaching practice. The result is not two discourses, but one discourse enabled by each group’s investment in the “truth” about their authority vis-à-vis their claims to exclusive knowledge. In the case of teacher education, assumption of authority is a “procedure of power” (Blades, 1997) enabled by knowledge and truths, such as the truth that universities are not the “real world” or the elevation of published research as a form of knowledge that is more valuable than the practical understanding that comes from years of classroom teaching experience.

The process of educating the next generation of teachers brings authority as a procedure of power into sharp focus. In order for teachers or university professors to assume authority in teacher education, one group has to assume that the other group is does not have authority in the education of teacher candidates or, at best, little authority. Each group thus depends on the other group to be in opposition precisely to maintain the set of relations that enable each group to claim authority. When a teacher describes university-based teacher education as “crap from the ivory tower,” she reinforces a discourse of authority that places classroom experience as more valuable than the work of university educators.

To gain tenure and promotion, professors must engage in research and produce papers; thus their authority is directly related to the public truth that this work somehow enables the professor to have broader, more comprehensive knowledge about education than teachers. This can lead to a condescending attitude towards those not engaged in research. To maintain the discourse of authority, university educators describe teachers as practitioners who, presumably, never (or rarely) engage in valid research—where the concept of valid includes forms of representation (e.g., journal articles) that are typically unused by very busy teachers. Even when the professional, practical knowledge of teachers is described by professors in positive, complimentary terms, the effect is still to locate authority for what counts in teacher education with university educators. As a university teacher educator, I find this point very disturbing. It means that I participate in a system of relations that, in order to preserve my authority as a professor,
deliberately and somewhat violently positions teachers as “not fully in the know” when it comes to teacher education, curriculum change, and educational research. Worse, what is revealed is the extent to which my colleagues and I have assumed authority unknowingly.

I argue above that the inability to implement STSE school science education is a curriculum issue. In general, university professors of science education support the position that the school curriculum should shift towards STSE science education. But an STSE approach is promoted by university educators who have, in general, not provided any opportunities for their colleagues teaching science in schools to consider if an STSE approach is acceptable, or to even engage them in a dialogue about what might constitute an acceptable science education in schools. The call for an STSE science education—even the call in this chapter—is thus another example of the promotion of a truth claim that further entrenches a system of relations and discourse of authority, which ironically almost guarantees little or no curriculum change.

This slippage to authority suggests that an approach to curriculum change in science education through teacher education is doomed from the outset, since acknowledging that teacher candidates can contribute to the discourse without considerable experience either as teachers or educational researchers subverts the truth statements that enable the discourse to exist. And, of course, by the time the teacher gains the requisite experience, she has participated as a teacher to the extent that finding new ways to think about the discourse is extremely difficult. A similar obstacle faces professors of education because changing the discourse, by necessity, requires changing the truth about the prestige of the very knowledge claims that define being a professor. In essence, all the participants are entrapped in a system of relations that they maintain and promote, and newcomers quickly learn the rules of the game as a survival strategy, which further frustrates any possibility of curriculum change. Even those teacher candidates willing and able to rebel against the system by adopting a new approach to science education face formidable obstacles, particularly the approval of teachers and professors who are part of the system. Anything less than conformity to the expectations of either group, even when these expectations conflict, could prevent the candidate from being certified as a teacher. It is in the best interests of the teacher candidate, then, to “play the game” in order to win the prize of certification, although by then the candidate has already become engaged in the existing discourse of school science education, which, again, makes the hope of changing the discourse through the education of newcomers a misplaced optimism.

SPECIFIC INTELLECTUALS AND HOPE FOR CURRICULUM CHANGE IN SCIENCE EDUCATION

From a post-structural perspective, university or ministry of education initiatives to change the school curriculum change are doomed before they start. First, the structural approach of factor analysis informing technique has proven to be naïve in its assumptions lacking in its effectiveness. Second, post-structuralism complicates the situation by revealing that the present discourse of authority is maintained by the truths and knowledge claims assumed by the participants in the discourse. Yet as
social critique, post-structuralist analysis is also a political act that intends to critique the workings of institutions that appear to be both neutral and independent. That is, it critiques them in such a manner that the political violence which has always exercised itself obscurely through them will be unmasked, so that one can challenge them (Foucault, as quoted in Rabinow 1984, p. 6).

So, while a critique from a Foucauldian perspective might paint a bleak picture for the possibility of social change, at the same time, there is also an undercurrent of hope in it. Foucault died before he could tackle the question of hope, but hints of his direction are found throughout his work, and modelled in his life. In particular, he identified “specific intellectuals”, whose specificity is “linked … to the general functioning of an apparatus of truth” (Foucault, 1977, p. 132), as able, due to their location, to “operate and struggle at the general level of that régime of truth which is so essential to the structure and functioning of our society” (p. 132). In this way, there is “the possibility of constituting a new politics of truth” (p. 133). Hope lies, suggests Foucault, in the possibility of these intellectuals “detaching the power of truth from the forms of hegemony, social, economic and cultural, with which it operates at the present time” (p. 133), an approach he calls making “the cultural unconscious apparent” (Foucault, 1989, p. 71).

The possibility of transformation begins, argues Foucault, with the self as critic. By investigating the discourses in which we participate, maintain and reproduce, Foucault believed that one can “show that things are not as self-evident as one believed … see that what is accepted as self-evident will no longer be accepted as such” (Foucault, 1988, p. 155). He then points out that as soon as one can no longer think about things as one formerly thought, transformation becomes both very urgent, very difficult, and quite possible (p. 155).

Foucault understood that change is ontological, i.e., a change in being. Such a viewpoint reveals why change is so difficult in education systems (or any system): Participants in the discourses would have to become different in fundamental ways. Operating within systems of entrapment, the specific intellectual is asked to engage in the hard work of stepping outside his or her being, and this journey begins by questioning that which seems so perfectly obvious and normal in our lives.

Approached this way, curriculum change in science education becomes the challenge of exposing all our assumptions to questioning, including the belief that school science education in Canada should adopt an STSE approach. Such a tactic would also require science teachers to question the ways they practice science education in their classrooms. Teacher candidates, as other specific intellectuals in the relation, would need to let go of their desire for certainty in the field experience, especially since their mentors would come to value the critique of assumptions.

None of this would be easy, for it means turning a critical gaze on the discourse of authority, which I have argued actually constitutes the positions of teacher and university professor in a curriculum change discourse. Yet the struggle is worthwhile because taking up this challenge opens, finally, the possibility of actual change in school science education.
The conversation about change might begin with a small group of participants, perhaps a few teachers, university professors, and teacher candidates. In the spirit of critique, the group would need to engage in a dedicated re-examination of the taken-for-granted terms and ideas we use in teacher education, and the truths we have assumed that allow us to claim and maintain authority in the discourse. A degree of “giving up” the closely held assumptions that are reinforced by truth statements and knowledge would be required: Are university professors really sequestered away in ivory towers or are they continually engaged in schooling in their role researchers? Are classroom teachers really ignorant of theory, or do they live out theory every day of their teaching careers? Is research really restricted to universities, or do teachers engage in research with their students as a normal part of their teaching practice? Are professors of education not also teachers? Are teacher candidates “beginning” teachers, or have they already developed a teaching approach and style by the time they enter formal teacher education programmes? Are experienced classroom teachers and university professors willing to critically examine the term student teacher? Can such an examination be expanded to include other agents involved in teacher certification?

I admit that I experience some resistance to participating in a conversation I know would expose, through questioning, the assumptions that enable my authority as a teacher educator. It would be difficult to let go of the dearly held truths that contribute to the prestige of the title of professor, and I imagine my colleagues teaching in schools would have similar reservations. Yet as agents participating in the education of the next generation of teachers, we have the opportunity to actually accomplish change in science education, and quite possibly in other areas of the curriculum. If we can engage in conversations as specific intellectuals, exposing truths and knowledge that inform positions of authority, then we can learn to let go of being professor, teacher, and teacher candidate. What remains is the hopeful calling of educator, where we work together in teacher education, which is an education of ourselves and newcomers, to realize the possibility of a science education that is relevant, engaging, meaningful, and helpful to the next generation.

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