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UNIVERSITY OF ALBERTA

INFORMATION TECHNOLOGY AND ALBERTA PUBLIC SCHOOLS:
A Semiotic Analysis of Educational Policy in the 1990s

by

Mary Sekulic 

A THESIS SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master of Education

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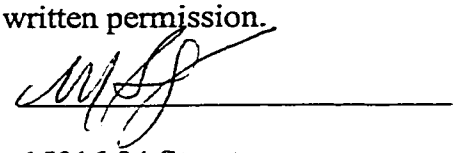

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Abstract

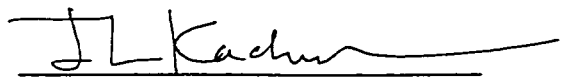
This thesis provides a discourse analysis of computer integration policy in Alberta during the 1990s. As a semiotic reading of policy, it offers another explanation for the push to computerize tax-funded schools. It suggests that increasing technological inputs may be more to benefit interested corporations rather than improve teaching and learning. It contends that educational restructuring policy is an ideological tool used by the populist Progressive Conservative government, the Conference Board of Canada, and the Alberta Teachers' Association. The author argues that educational policy from these three communities is a symbolic effort to appear to solve a constructed problem, which is the inadequacy of public schools in preparing qualified workers for the labour market. Furthermore, the study suggests that policy perpetuates the social order and that the Alberta Teachers' Association, a community that is expected to catalyze societal change, offers little significant dissent. Chapter one discusses the author's personal experience in the classroom as the impetus for the study. Chapter two offers a background to Critical Theory as well as an overview of the policy archeology model used to analyze the policy documents. Chapter three employs Arena I of the policy archeology model, the construction of social problems. It also identifies four metaphors used by the Alberta government to justify technology integration. Chapter four is an empirical critique of these metaphors. Chapter five is concerned with Arena II of the model, social regularities. It analyzes educational policy with reference to governmentality, professionalization, choice, and class. Chapter six is framed by Arena III of the model, the construction of policy solutions. It demonstrates that solutions are constrained by the grid of social regularities. Chapter seven is concerned with Arena IV, the social

functions of policy studies. It considers approaches to policy studies as a tool and as a problem to conclude that policy acts as a symbolic gesture. Chapter eight provides reason to suspect that a new social order is not on the rise, despite the policy discourse. It recommends the creation of a new teaching position, that of the teacher-technologist to combat the dehumanizing and corporate effects of computer integration.

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *Information Technology and Alberta Schools: A Semiotic Analysis of Policy in the 1990s* submitted by Mary Sekulic in partial fulfillment of the requirements for the degree of Master of Education in Social and Cultural Context of Education.



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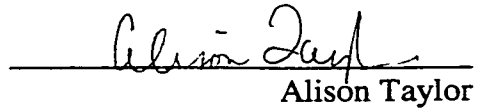

Alison Taylor

Norma Nocente

This thesis is dedicated to my maternal grandmother, Kaja Saric. Challenges she faced as a single parent make the completion of this thesis seem inconsequential.

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Table of Contents

Chapter 1 - Introduction

1.0 Meeting the Challenge: Teaching and Reaching

On January 17, 1994, Premier Ralph Klein announced a four-year reduction target for education of 12.4%. This pronouncement launched a four document policy series from Alberta Education, now called Alberta Learning.[1] The business plan policy series entitled *Meeting the Challenge* details the manner in which education was to be restructured, cost-savings were to be realized, and students futures were to be assured. Each document identifies specific goals and outcomes for education. *Meeting the Challenge I* uses the discourse of "restructuring" with the result being deep spending cuts. As time passed, the policy seemed to be succeeding in addressing the problems of the previously wasteful, unaccountable and unresponsive education system. Each succeeding document in the series begins with a message from the current minister boasting of the progress evident since the last document was published. *Meeting the Challenge II* begins with a list of improvements since the last policy. Since 1994 the changes mandated in the last policy ". . . give more authority to schools, provide greater involvement for parents, reduce administrative expenditures, and focus education dollars on learning" (1995/96 – 1997/98, 2). Progress in saving money and restructuring the system was so good that enough money was found to change the policy direction of

[1] Documents under review in this study were products of Alberta Education, the department responsible for education from Early Childhood to Grade Twelve. On May 26, 1999 a cabinet shuffle created a new "super ministry." This new ministry, Alberta Learning, was the result of merging the departments of education and advanced education. This ministry now sets policy for both secondary and post-secondary education. There is a concern that one ministry cannot adequately address the concerns for the vastly varying need areas of secondary and post-secondary education. Furthermore, a topic that will be addressed in more depth in chapters five and six is the metaphor of the perpetual learner. The change in name of ministry underlines the new emphasis on "lifelong learning" and that learning never stops. The gerund form "learning" connotes a sense of the incompleteness of the learner. Such a metaphor finds its echo in the new name for the new ministry. The new minister, Lyle Oberg, supports the notion of lifelong learning and

reduction to one of investment in technology. In *Meeting the Challenge IV* then minister Gary Mar identifies "the integration of technology education as a new goal" (1997/1998-1999/2000, 1). Such a direction requires a massive investment in equipment. These funds were routed away from early childhood programs, the fine arts and other less "business-like" disciplines.[2] Thus, funds are available for computer infrastructure while other areas of education are left without.

I contend that the allocation of funds is a conscious choice made by those in power. Governments use policy not only as a regulatory device but also as a persuasive one. Policy-makers use language to argue a particular ideological position in such a way to make debate moot. Under a critical examination, policies concerning the computerization of schooling become problematic. These policies claim to address the future and there are many proponents of this new orthodoxy. It is vital to question who the proponents are and what is their interest in this orthodoxy. From this subjective vantage point, the reaction to and conceptualization of computers are important not just in terms of computer's real or potential technical accomplishments but also in ideas and ideals about them. The discourse on computers arouses questions of a moral vision of society. Thus, in this study I intend to problematize the policy solution of computer integration in schools, provide evidence of this "moral vision of society," and discuss the role of policy

favors the merger of the two departments. "It's time to realize that learning starts in kindergarten and goes right through probably for all your life" (*Edmonton Journal*, A4, May 27,1999).

[2] The *District Technology Plan 1997-2000*, Edmonton Catholic Schools, requires desktop computers for each school office, master servers, student servers, applications software, training and installation among other components. Funding for these requirements would be equally shared between "appropriate district reserves" and a one-time levy of $40 per student. On June 6, 1997, The Board of Trustees allocated $1.1 million of district capital reserves for the implementation of the technology plan.

through analysis of technological policy from three sources. These sources are the Alberta Government, the Alberta Teachers Association, and the Conference Board of Canada.

I use policy documents as a focus of analysis. I demonstrate what discourse is promoted in these documents. This study accounts for the absence of an organized and critical look at the sweeping integration of technology in Alberta's schools. It is a critique of the manner in which technological integration has been promoted and accepted in Alberta schools. My thesis attempts to be accessible to prospective, as well as practicing, teachers as a source of skepticism for the vast and optimistic experiment that educational computing is. I aim to outline my journey from a frustrated and somewhat desperate first year teacher with respect to student behavior and performance, to an increasingly frustrated more experienced teacher on behalf of my students' behavior and performance. It is my contention that such pronouncements by Premier Klein and by Minister Mar are ideological. Pronouncements like these produce a moral vision of society from the power elite. These have implications for teachers.

1.1 Meeting My Own Challenges

At the time these policy changes were taking place, I was having challenges of my own in the classroom, challenges which made me question my reasons for becoming a teacher. I became a Language Arts teacher because I enjoy all things about books. Teaching seemed an obvious choice as a way to earn a living since books are an outstanding feature of school life, at least the way I remembered it. I was quite convinced that I could convey these sentiments about books to adolescents. I realize this seems

quaint and old-fashioned in this digitized era. It is not only the characters, plots, settings, and themes within books that appeal to me, but their physical characteristics are things I relish as well: the crackle of the binding as the hardcover novel is opened for the first time or the texture of an unread page.

My struggles were not with compiling a suitable reading list. I was struggling with "classroom management" issues in that first "inner city" school that I was fortunate enough to get a job in. I began this position convinced that my efforts will be rewarded with success. Students would exhibit this success by being happier in school, attending regularly, and preparing for school by doing homework and studying for tests. Admittedly, there were the expected "kinks" to work out; students interpreted my "trusting" attitude as lax discipline. Instead of working productively, students, nearly wore themselves out trying to avoid doing their assigned work.

My frustration increased. Those kinks were not working themselves out. Getting students to sit and work was a major feat. How was I going to get them to the point where they would revel in the sight, sound, and smell of books? I had visions of a "Dead Poets Society" movie as I began my school year yet by Christmas, I was experiencing something more like a "Welcome Back Kotter" television rerun, without the notion of welcome. I remember thinking one morning, "Who am I kidding? These kids think I'm nuts. And so do their parents." Perhaps I should say guardians or group home leaders or social workers. My students' families were often dysfunctional with little intellectual

capital.[3] Reaching my students' parents was often quite difficult. My phone calls were often not returned, sometimes, I believe, due to apathy, other times because their phone had been disconnected. Parent-teacher conferences were not very successful either for two reasons. Parents did not attend, or if they did, they did not seem to follow through on the promises they made to ensure their child would attend regularly and complete homework assignments.

As I reflect on that first year of teaching, I recall that sense of artifice of what I was trying to do. I was convinced before I started teaching that I could sway students and their families my way by getting them to value what I value simply because I had the authority and the will to do so. I knew that it would take some convincing but I was not prepared for the obstacles I faced. I am beginning to see now that student resistance was not simply adolescent rebellion or the impulse to break the new teacher. I did not provide enough of a bridge for them to move from their world to the world I was trying to teach them. The gap was too wide and the students were too frustrated with this unorthodox teacher who raved about books by weird women writers. My approach and choice of content did not fit in with their common sense. I see now that social regularities of gender, class, and professionalization interfered with my ability to reach them. I should have used popular culture instead of the content that I and the rather classed, gendered and professionalized curriculum I was mandated to teach suggested. To initiate

[3] Intellectual capital refers to the attitudes, expectations, encouragement and opportunities to learn. These elements of the family's intellectual capital arise not only from the but also from their life experience. Fathers with high status occupations have a positive effect (*Statistics Canada*, 1994 International Adult Literacy Survey).

discussion about figures of speech, poetic scansion, plot analysis, and character development I now use rap music, top forty songs, television situation comedies, and music videos. I have discovered what I consider adolescent common sense. The approach works because these forms make sense to them.

Working with adolescent common sense, however oxymoronic it may sound, has smoothened my classroom management and improved my reputation among my students. I am known now as "cool" because I "let" them present their favorite pop songs as part of a poetry project or assign them to watch a sit-com to do a first draft of a character sketch. But they are still learning what the curriculum sets out. I have popularized it and made it fun. Learning is fun for most students because they do not feel excluded from the content. But they remain part of the regimen of schooling. This is not to suggest that I reached all students. I speculate that was so because I remained a white, female, tax-paying, car-driving, mortgage-paying individual—someone who many of them had little in common with. Furthermore, while my class is "cool," it is still rigorous. Despite my references to the Simpsons or to MuchMusic, students still must write a lot and read a lot. Students with intellectual capital deficits are obviously at a disadvantage and more than a few students still opt out of handing homework in, doing projects or studying for tests. My attempts to reach them were viewed with skepticism and left at that. Using pop culture was a way to hook students, make them sit up and participate in class. But I still had another agenda. Making them into book lovers is still my ultimate goal because that is what I think an intelligent and well-educated individual should exhibit. Getting them to enjoy books the way that I do is my outcome, to use the latest educational parlance.

But I had to get them where they live, first.

1.2 Realizations: Revelations through Critical Theory

The challenge is changing and I contend that the effects of such policy will not be as beneficial to all despite the optimistic tone and language within policy. As stated in *Meeting the Challenge I*, the changes outlined in the business plans will "alter substantially the character of the education system" (1994/95-1996/1997, 3). The implication is that the current system is inferior and requires change. While I do not object to change, I object to drastic changes being made to education system without reference to research and without large-scale consultation with teachers. Unlike the challenges that I faced as a new teacher, challenges posed by policy are mandated and thereby, represent more of a threat to my role as an intellectual and to what I consider an educated student should exhibit. The threat, while not readily visible, is uncovered when critical theory is applied to not only to the policy solutions but also to the policy problems.

Before elaborating further on the policies themselves, I would like to make a point about the notion of "life-long learning." I would like to distinguish the use of this term, as it appears in the policy documents, from what I consider life-long learning to be. Documents from the provincial government, from the Conference Board as well as from the Alberta Teachers' Association use this terminology with respect to the rapid pace of change in the work-world. Life-long learning is an attitude congruent with the commonly accepted notion that skill sets should be upgraded continually so that a person's skills can be readily used in the rapidly changing labour market. For example, in *Information and*

Communication Technology: An Interim Program of Studies, it states that "keeping the curriculum current is [therefore] an essential aspect of preparing students for the world of work, post-secondary studies, lifelong learning, and citizenship in a complex world" (1998, 2). In CBC's *Matching Education to the Needs of Society*, it states that Canada needs "a new system of lifelong learning that will match the evolving needs of Canadian society" (1994, 20). There is a passing mention in both of the above documents about more humanistic concerns. The CBC document considers the personal development of students as "self-reliant, caring, and responsible citizens" (2). The Program of Studies echoes this rhetoric: students should aim to be "self-reliant, responsible, caring and contributing members to society" (2). While both documents acknowledge the importance of cultivating all aspects of the student, both documents focus more on the importance of preparing work-ready students as opposed to caring citizens.

While I do not oppose the notion of life-long learning as an attitude which prepares students for the world of work, I think it is important to consider that the way the term is being used may be confused with the notion of knowledge for its own sake. In the current discourse which stresses "a clear commitment to value" (CBC 1995, 2) it seems that learning is primarily along an economic logic. As a teacher, the value that I place on learning does not necessarily translate into economic value. Other cultural and academic values such as tolerance and scholarship are forefront in my mind as I prepare lessons and evaluate students. Thus, while I accept that current policy discourse does not discount these values, the influence of economic value is more prevalent than any other types of values. It is important to make this distinction between life-long learning as

defined by the policies and my interpretation of it because it reveals assumptions about education, business, and their relationship.

These policies are fertile areas of investigation because of the assumptions made about education and the business world's relationship to it. Polices are presented as neutral, almost benign writs of altruism while they may represent the opposite, especially to the type of students I have worked with. I was uncertain as to the origins of my suspicion of technological integration until I started looking critically at the "commonsense" which informed these policies. I use the word "critical" not as a negative evaluation of policy. The term in this case refers to a school of thought and to a methodology. Both aspects are used in this study. The social problems that precede policy and the contents of policy, when examined critically, exhibit masked truths and obscured realities. As my analysis reveals, the notion of a social "problem" can be viewed as a construction. The policy addressing this problem is another construction, which, as I demonstrate, lends support to the idea that the problem is real and needs to be solved. The concern for the manner in which people accept things or take them for granted are the presuppositions revealed by critical theory.

1.3 Key Concepts in Critical Theory

A feature of critical social theory that is key to this study is the notion of the "hidden" nature of social reality. Critical theory as a theory of society assumes that there are two levels of reality. One is the commonsensical level that is accepted as given. It is the one promoted by the elite so as to sustain the power positions. The other level reveals the workings of the elite. The reasons for certain phenomena are not what they appear to

be. Knowledge is distorted and existing dominant powers are attempting to keep most unsuspecting citizens in the dark. A definition of power explains the process of knowledge distortion and the persistence of the elite.

A common definition of power is one put forth by Weber (Johnson 1995, 209-210). This is what some feminists refer to as power over. It is the ability to control others, events or resources. Power can also be used in subtle ways. The inaction of a powerful group can exert influence as well. An example of this is when the government withholds financial assistance from the poor. Or, as in the Alberta example, the government chooses corporate welfare over social welfare. Furthermore, power-over assumes the hierarchical organization of social life and views power as a substance or resource that individuals or social systems possess. This kind of power takes several forms. Authority is a form of power that is socially defined as legitimate, which means that it is supported by those who are subjected to it. Coercive power, on the other hand, is power sourced in fear and the use of force. Authority, according to Weber presents in three forms: legal-rational, based on formally enacted norms that are codifed; traditional, based on an collective and uncodified sense that it is proper and should be accepted; lastly, charismatic authority is socially bestowed and may be withdrawn when the leader is no longer regarded as extraordinary.

Fairclough (1989) is also careful to point out that power exists in various modalities, including the concrete modality of physical force. That type of power is not at issue here. What is at issue is acceptance and legitimation. The Weberian notion of legal-rational authority would be an illustration of this acceptance and legitimation as the

computerization of education rests upon a codified basis. The fact that it is written and promulgated by government lends it the authority. Those subjected to it consent to it because, on the surface, it seems commonsensical.

There is also a "charismatic" authority, which, in addition to the legal-rational authority, lends almost a sanctity to taking up technology. Neil Postman (cited in Robertson 1998, 94-95) writes that people have a sacred relationship with technology, not just an infatuation. His contention is that people have deified technology:

> in the sense that people believe that technology works, that they rely on it, that it makes promises, that they are bereft when denied access to it, that they are delighted when they are in its presence, that for most people it works in mysterious ways, that they condemn people who speak against it, that they stand in awe of it and that, in the "born again" mode, they will alter their lifestyles, their schedules, their habits and their relationships to accommodate it.

The legal-rational and charismatic authority technology possesses excludes other sources of authority. By imposing a certain type of communication upon the social sphere, certain societies of power manage to legitimate themselves through manipulated consensus. In this case, these societies of power are technological interest groups such as neo-liberal governments, corporations and any other individual or organization desirous of the fame and cash that techno-worship might entail. Because this consensus depends upon an imposition of discursive constraints and thus upon an interiorization of certain values, it is a managed consensus as opposed to a freely formed consensus (Finlay 1987, 176).

I have wondered why I was secretly delighted to learn that the Apple Classrooms of Tomorrow (1985) (ACOT) program was doing so poorly at proving that students

equipped with computers learn more and faster than students without them.[4] At first, I thought my satisfaction in learning about the negligible positive effects computers have on learning derived from my own insecurity with the technology. After applying critical theory to policy, researching secondary sources, and experiencing educational restructuring at the classroom level, I see that discourses about computers are redefining my job, my students and the learning process. What is at stake here is what I value as a teacher and as an intellectual. Using pop culture has improved my classes' reputation to the students, appealed to the administration, and improved my students' achievement results but I do not consider those tasks the sum of my role or even characteristics of my role. My role as an intellectual is gradually being erased by the policy language and by its articulation. As I prepare students for that next tier of education, high school in this case, I realize that my goal, to inculcate a love of books, is fading. Government policy assurances that the changes proposed will "alter substantially the character of the education system" (*Meeting the Challenge* 1994, 3) assures the demise of such a goal.

The increased emphasis on "results" and "accountability" speaks to change in the character of the education system. At the classroom level this is manifest in achievement tests. Since my students were of a class and intellectual capital level that disadvantaged them for success in those tests, I used class time to review past achievement tests.[5] I did this primarily because my students' results are a reflection of my accountability for the

[4] ACOT (Apple Classrooms of Tomorrow). In 1985 Apple launched an ambitious research project. Described as "computer saturation", the project would follow five ACOT sites for ten years. Every teachers and student would be given an Apple computer, at home and at school.

[5] I used examinations released by Alberta Education for classroom review purposes. Exams two years or older are no longer secured.

results. This equating of student results with teacher ability is how teachers' proficiency in the class is being assessed. While I do not disagree with the notion of standards, I disagree with the emphasis being put on such tests when they do not, in fact, evaluate all that is mandated to be taught in the curriculum. Alberta Language Arts curriculum is composed of five strands: reading, writing, listening, viewing, and representing. Only the first two strands are evaluated by these achievement tests. This may be so because the information on these strands is more easily collected and reported. Individual schools results are published in the *Edmonton Journal* and schools reputations, along with teachers at those schools are made or broken. I contend that teachers roles as intellectuals are constrained because these tests force a specific kind of teaching and learning. In other words, teachers teach "to the test" in order to be seen as serving the needs of their students and to prove their ability in the classroom.

In addition to the emphasis on results and accountability, the Alberta government's new goal of technology integration is more evidence that the character of the education system is changing. Who or what is this new character? Why a new character in the first place? Other sources of policy provide clues to this. When other sources of policy, like the Conference Board of Canada, are investigated, the character being assumed and the motivations for the shift in characterization emerge. Conference Board of Canada's *Matching Education to the Needs of Society* (1993, 2) is in line with the need for a system-wide change: "Canada needs a new system of lifelong learning that will match the evolving needs of Canadian society." The document (ibid) also provides an indication of who or what this new character is when it assumes that working life is

"characterized by high technology and rapid change."

This new character is finding its way into the classroom. In 1999, the written portion of the grade nine achievement test focused on technology. I contend that the use of this topic in an information gathering instrument like a provincial government achievement test does two things. First, it functions ideologically. It naturalizes and legitimates the notion of technology as a topic of study. Indeed, if the topic is important enough to be on an achievement exam, students will accept that is vital to know and be a part of this new "knowledge based economy." Second, it acts as a method of Foucauldian surveillance.

1.4 Technology: Increasing in Prominence

I suggest that it is more than a coincidence that technology is the topic of the 1999 achievement test. This test may not only be measuring students' topic organization and writing skills. It may also be a way to see what students are doing in schools when it comes to technology. This topic comes in hard on the heels of a 1998 document from Alberta Education, *Information and Communication Technology: Kindergarten to Grade 12, an interim program studies.* Language in this document as well as others discussed in this study echoes other policy sources. As the study will demonstrate, policy from the Conference Board of Canada is a strong influence on policy direction for Alberta Education. It can be argued that, to use another metaphor, government policy is a transmission belt for other interests. The year 2000 is also an important benchmark for Alberta Government, for local school jurisdictions, as well as corporate-minded think tanks like the Conference Board. An achievement test may be one of a number of ways

that educational and corporate bureaucrats may observe how their policies are being articulated at the classroom level.

1.5 Technological Integration Policies: A Problematic and a Discourse

Critics of technological integration policies question the problems that the policies seek to cure. Olson (1987, 184) suggests that during the period of transition, views of what a "computer" is, can do, and what the consequences will be will vary inevitably to the point of contradiction. Healey (1998, 123) contends that students are the subjects of a vast and optimistic *experiment* that is well financed by major corporations, the public at large, and government officials. Robertson (1998, 92) also calls for an examination of our exaggeration of the benefits of technology when she states that teachers, governments, and business eulogized Information Technology (IT). By promoting educational computing, government attempts to have schools identify more closely with the needs of the workplace. As "common sense" is supplanted by "business sense" the shaping of the future and those who will benefit from this shaping seem to be increasingly narrow in scope and range. If that is true, what will become of those who cannot fit within this range? On a large scale, the technology is yet unproven and in individual cases there are instances where student achievement dropped after home/school technology links were built. My analysis reveals that the provincial government, the Conference Board of Canada and the Alberta Teacher's Association promote and accept the technologization of education. In varying degrees, all three sources of policy laud technology and are convinced of its capacity to provide job skills, eliminate class differences, enable global understanding and tailor educational learning

programs for all. However, the speed, memory capacity and overall appeal of computers, do not erase the fact that students come from disadvantaged circumstances.

To examine policies, I not only question the policy solutions but also the policy problems. Critical theory is a good tool to use when doing this kind of examination because the theory does not accept the current reality as a given. The theory assumes that social reality is constructed. Critical theory suggests that the power of an orthodoxy derives from its perceived immutability. Its force comes from the fact that the orthodoxy is rarely challenged, and if a challenge is posed, the ones posing it do not occupy powerful positions in society. The task in this study is to apply critical theory to the new orthodoxy. The study also assumes that policy is a discourse and that the policy acts to exclude other social problems. It asks questions like: How is the future being constructed? Whose future is it? Who will be privileged and who will be marginalized? Who is shaping this vision of the future and why? To help answer these questions, I turn from an empirical focus to a theoretical one.

1.6 The Role of Commonsense in Discourse

The presuppositions at issue in this study concern what is considered best for our children's education. Everyone wants what is best for his or her children, especially when it comes to questions of preparing for the future. This is an example of "common sense." As teachers, parents, and citizens we accept that children are our future and that success in the future requires the attainment of complex technological skills. These platitudes act as homilies and they proselytize a need to change the way we teach in order to prepare our children for this constructed vision of the future.

Critically speaking, I contend that claims about the benefits of computerized education should be viewed with some suspicion. I refer to writers, researchers, and critics who offer other reasons for technological integration; reasons which belie "common sense." With this secondary information, I attempt to show how this "common sense" is an embodiment of assumptions that directly or indirectly legitimize existing power relations. For example, it may appear that integrating technology into education may be to enhance educational as well as career advancement, but hidden reasons exist for the computerization of education. Other reasons include providing a market for the glut of information in our midst (Easton, 1999), or providing cheap advertising for corporations (Shaker, 1998) or maybe just loosening the stranglehold teachers and teacher unions have on public education (Robertson,1998).

1.7 Ideology

Questions concerning the problems that exist in society and policy solutions created to treat those problems are answered with respect to ideology. Ideology (Eagleton 1991,6-7) is "sets of ideas by which men [sic] posit, explain, and justify ends and means of organized social action, specifically political action, irrespective of whether such action aims to preserve, amend, uproot or rebuild a given social order." The power of the ideology lies its capability to project certain types of practices as universal. Ideology operates through six strategies. It *promotes* certain values and beliefs while simultaneously *denigrating* others. It *naturalizes* and *universalizes* those values while *excluding* and *obscuring* others. Eagleton's notion of naturalizing and universalizing of beliefs to make them seem beyond reproach is echoed in Fairclough's description of

ideology as a practice in which unequal power relations are sustained through existing modes of practice. Ideology is a prime means of manufacturing consent (Fairclough 1989, 4).

Eagleton also points out that the conception of ideology as purely a dominant form of is not accurate. It seems that any oppositional ideologies are not taken seriously because the dominant ideology has done its job in naturalizing and universalizing beliefs. The act of excluding, obscuring, and denigrating other values implies that other, less dominant values exist but do not surface to the level of "common sense." Challenges to the dominant social order are difficult for the very reason that they oppose an ideology, which, by one form of its very definition is so deeply entrenched that detecting it is a challenge in itself. Getting people to depart from the established ideology involves dismantling the social order by seeing through any one of the promotion, denigration, naturalization, universalization, exclusion, or obfuscation strategies.

1.8 Chapter Outline

Chapter two is divided into two sections. Section one is a brief topographical literature review of works of critique concerning critical theory and the notion of discourse analysis. Section two is an outline of the method used to analyse policy documents with reference to my personal experiences, secondary literature, and critical theories. I use Scheurich's policy archeology model for policy studies. Policy archeology, a discourse analysis of policy informed by Foucauldian thought, questions the construction of both problems and policy solutions to those problems. Scheurich's model of policy archaeology is useful in unpacking policy documents and revealing

masked features of the social order. I also acknowledge tensions between Foucault's ideas about the social construction of reality and a dominant ideology notion. To reconcile this tension, I refer to work by critical production theorists who recognize the power of structural determinants which would look toward a theory that will recognize both human agency as well as take into account the power of material and ideological structures.

Chapter three examines the construction of social problems. It lays out the assumptions the government makes about the problems with public education. The assumptions are illustrated through four metaphors of computing: computers as job skills, as class equalizers, as individual tutors and as enablers of global understanding. It employs Arena I of Scheurich's model of policy archeology. Chapter three examines the Alberta context specifically after the first wave of funding cutbacks to education and provides evidence that despite government rhetoric, policy changes were imposed because of particular ideological choices. This chapter concludes that cultural values that support the market model are the Alberta government's impulse for cutting funding and integrating technology in classrooms. Pedagogical imperatives had little to do with educational restructuring.

Chapter four takes up the metaphors of educational computing introduced in chapter three and then refutes them with reference to leading critics of technological integration in the classroom. The refutation points to problems, inconsistencies or contradictions in the metaphors and reveals that impulses to computerize education do little to improve education, do more to serve business interests and may, according to

critical research, do harm to learning.

Chapter five outlines Arena II, the social regularities, and exemplifies four regularities. It is concerned with the grammar that is constitutive of the emergence or social construction of a particular problem as a social problem. Governmentality, professionalization, choice, and class, emerged are identified as regularities. These regularities are features in the analysis of policy from the province, from the Alberta Teacher's Association (ATA), and from the Conference Board of Canada (CBC). This chapter reveals that, despite the bright and inclusive tone found in provincial policy, policy solutions as well as policy problems are constructions which still maintain the social order. This arena of policy archeology assumes that social problems do not achieve their visibility, recognition or status as social problems in an idiosyncratic or random fashion. This visibility, however, is not primarily a function of the interactive intentions and actions of consciously involved social agents or groups. Nor is the range of policies that get considered to "solve" a social problem primarily the function of the same intentions or actions. Instead, policy archeology suggests that there is a grid of social regularities that constitutes what becomes socially visible as a social problem and what becomes socially visible as a range of possible policy solutions.

In chapter six I apply Arena III of Scheurich's policy archeology model to the documents. Arena III is concerned with the construction of policy solutions. Just as social problems are constituted by social regularities, so are policy solutions to those problems. The arena of social regularities, Arena III, shapes the range of possible policy answers. This arena determines what is acceptable as a policy solution. This chapter

reveals that the policy solutions from government and from business are quite similar in their wording and in their intent, with business policy taking government policy by the hand. Policy from the ATA provides some textual sparring with the "corporate discourse" permeating the other two sources policy. However, contradictions between what the ATA says and what the Computer and Technology specialist councils do indicates that ATA policy may be more symbolic than regulatory. In the end, even the ATA, despite its warnings of "market fundamentalism," "privatization," and "corporate penetration," accommodates the market metaphor in its theory of public education.

In chapter seven I apply Arena IV to the documents. This chapter considers three different social scientific perspectives of policy studies: traditional, post-positivist, and critical policy studies. Chapter seven treats these perspectives as both a tool and a problem. This arena is concerned with the social functions of policy studies. To what end is policy archeology? Ultimately, Sheurich contends, the most important social function of policy analysis is the normalizing or disciplining of the population. In this chapter I also draw upon critical hermeneutics to explore further the way the dominant discourses assign validity and rebuff other "unthinkable" alternatives. I also provide the results of the analysis and a theoretical discussion of the results to reveal that the traditional and post-positivist approaches while differing in degree, both assume the socio-political reality as given. These approaches offer little in the area of societal change.

Chapter eight summarizes the preceding discussion and suggests implications. The construction of teachers, students, and the learning process itself is changing.

Students are encouraged to work on their own most often to complete courses faster, to get the edge, to be able to compete and to move into the next tier of education. The construction of teachers, students and the learning process is being reinvented through policy discourse as a response to the notion of the "information society." This chapter also provides reasons to be skeptical of the claim that society is being revolutionized as a function of telecommunication and technological advances.

1.9 Delimitations

Before I list which documents are under review in this study, it is important to acknowledge that by using only these provincial government policy documents I discount the funding of earlier more "education-friendly" governments. Policy documents under review are of a certain kind of historical and ideological moment. It is the ideological character of these documents that is the concern in this study. This study reveals that an ideology promoting competition, efficiency, and self-improvement is present, to some degree, in all policy statements examined herein. All texts are a production of policy communities during Klein's tenure and all contain references to the linkages between education, societal change, technological advances, and the world of work.

My focus on the ideology present in policy excludes other interpretations of policy. This type of examination will not provide a feminist perspective on policy, a perspective sorely lacking as schools and learning are restructured. My analysis does not provide an ethnographic reading of policy and policy-making. It would be illuminating if comparisons could be made between the manner in which Alberta treats technological

integration and another province or state deals with it. This study only applies to the Alberta context during Klein's tenure. Its generalizability, therefore, may only be limited to Alberta. However, since Klein was the first in a series of premiers to enact such funding changes to education, Alberta is considered an example of success or failure, depending on the ideology being promoted.

The analysis examines documents from three sources. First, I use documents from the provincial government from Alberta which show the reduction in social services, health and education spending. I look at four specific documents from this source of policy. I analyze the *Meeting the Challenge* series which outlines how Alberta Education will comply with this agenda. I use policy statements that deal with the pedagogical aspect of computer integration. While there is a push to computerize student records, registration, and marks, this aspect of computer integration in the public funded school system is not addressed in this study.

Another document which treats the computer in the classroom is the *Information and Communication Technology: An Interim Program of Studies (1998).* It is a curriculum document which details what is to be learned for grade levels K to 12. I also examine the *Framework for Enhancing Business Involvement in Education (1997)*, a document that details how schools will establish a closer relationship with the business world. The last document I examine from the Alberta Government is the *Framework for Technology Integration in Education.* It outlines the reasons for and manner in which technology will be implemented in the publicly funded school system.

The second source of policy I examine comes from the Conference Board of Canada. This independent and corporate-minded organization has specific goals for education as it relates to the workplace. In this vein, I look at at the *Employability Skills Profile*, a document which lists the desired attributes of the ideal worker. I also examine *Matching Education to the Needs of Society: A Vision For All Our Children.* As well, to become further acquainted with the dominant ideology along which schools are being restructured I look at *Operating Principles for Business-Education Partnerships* and *Evaluating Business-Education Collaboration.* All documents compare ideologically between each other and with Alberta government policy. Values like self-reliance, entrepreneurship, and individualism emerge within CBC policy and inform Alberta government policy. The documents from the CBC were selected to provide a foil. As they do not come from a government funded source (the Conference Board of Canada is a corporate-minded think tank), they will make an interesting benchmark to which to compare documents from tax-supported source. The study reveals that a one-way relationship exists between policy from an influential, corporate source and policy from a provincial, tax-supported source. Government policy acts as a transmission belt for imperatives from the Conference Board of Canada.

Lastly, I examine policy from the Alberta Teacher's Association. It is a good source to because it provides the "other" side of policy on computers in classrooms. It is expected to be a force of resistance to such market-metaphor changes. Documents from the ATA include the *Interim Position Paper on Technology and Education* and the *1999 Resolutions from the Alberta Representative Assembly* (ARA) on Technology in

Education, subsections 112/99-122/99. This policy, like the provincial government's and the CBC's, is a production of the ATA during Klein's tenure. At the surface, that is all that ATA policy has in common with the other sources of policy. It attempts to promote other values at odds with discourses from the government and the CBC. Policy on technology from the ATA uses words like "universality," "equity," "humanism," and "democracy" (*Position paper* 1999, 52). The analysis reveals that despite its promotion of the "other" values, the ATA may be doing more to promote the corporatization of schooling than it would like to admit.

For the purposes of this study, technology is interpreted as computing technology (word-processing, spreadsheets, graphics, and multimedia) and telecommunications (videoconference and Internet applications). I only use documents written in English. Documents under study are initiatives from the administration of Premier Klein. I realize the process of restructuring of schooling in the 1993-96 period can be traced back at least two decades to the early 1970s. Mazurek (Harrison & Kachur 1999,14) provides a very clear overview of the social, cultural, and economic impulses that have fomented educational changes in Alberta.

The purpose of my thesis is not to provide an exhaustive history of educational policy making in Alberta. While I acknowledge in my methodology that policy is historical, I make only passing reference to the historical context from which Klein's educational policy emerged. Harrison and Kachur (1999) provide an account of the Klein "revolution" and I assume this account in the analysis. As well, Easton (1999) suggests that the policy changes to tax-funded schools in the 1990s are characterized by the

intersection of cyber-technologies, education, and business agenda. I assume this intersection in the analysis. My thesis problematizes the policies and analyzes the discourse present in this policy, in policy from the ATA, and in policy from the Conference Board of Canada. I therefore limit my examination of the documents within this time period to allow for more space to account for the three dimensions of discourse and to discuss the documents in light of critical theory.

1.91 Limitations

By using only policy documents we cannot learn what goes on "behind closed doors" in the structuring and in the process of policy-making. Inferences can only be made since the policy is being treated as an artifact. Also, as a function of the hermeneutic process, I bring my biased, gendered, raced, and classed interpretations to the discourses. As stated in the introduction, I am not an enthusiastic proponent of technology in the classroom. This bias has perceptibly colored my view of its application and has pushed me to vie for the opposing viewpoint, almost to a fault. Will these interpretations be valid for people who are not like me? The presumption that statements of truth are necessarily situated does not invalidate the possibility of an alternative, and perhaps, better explanation.

Critical theory assumes that social life is constructed and this theorizing can be extended to the contents of this study. I have chosen the methodology and the contents subjected to this methodology. The act of choosing excludes the "other" contents. I hope to overcome this by providing potential counter-arguments. Furthermore, by focussing

solely on policy concerned with the classroom other areas touched by technological integration, such as the computerization of student attendance, marks, and other records are not considered. It can be argued that the computerization of school administration contributes to the commercialization of schools. This topic is not addressed in this study.

Chapter 2 - Review of Critical Theory and Methodology

2.0 Introduction

This chapter contains two sections. The first section provides a background to critical theory and the second a model for policy analysis. The background section contains three sub-sections. These subsections are concerned with, respectively, a summary of critical theory's assumptions, critical theory's application as a methodological tool, and the role of critical language analysis in policy studies. In this last sub-section, I assume that policy documents are samples of discourse. I also include a number of working definitions in this sub-section. I define "policy," "discourse" as well as "discourse analysis." I explain how discourse and discourse analysis relate to the model used to analyse the policy documents. I use Scheurich's model for policy archeology and I demonstrate how the model is informed by critical theory.

Section two provides a definition of semiotics and an outline of the policy archeology model I use to analyse the policy documents in this study. This study offers a semiotic reading of policy documents and the model used for policy analysis, Scheurich's model of policy archeology, deals specifically with one of the three areas of semiotics. Semiotics, an ancient mode of inquiry, takes into account three areas. First, semiotics is concerned with semantics or the study of linguistic meanings. Second, semiotics deals with syntactics or the study of the structure of expressions. Lastly, semiotics accounts for pragmatics or the social practices which result from linguistic expression. Scheurich's model is concerned with the pragmatic facet of semiotics in that it studies the uses of policy.

2.1 A Critical Theory Background

This theory is most often associated with a group of social scientists known as the Frankfurt School. The basic thrust of their work was to criticize life under capitalism and prevailing ways of explaining it (Johnson 1995, 62). Their work is featured by its emphasis on culture, its attention given to humanistic concerns, and its less rigidly deterministic nature. Theorists in this school combined Marxism with Freudian analysis to create an understanding of personality and the individual in relation to capitalism. Adherents to the Frankfurt school demonstrated a commitment to liberating human existence from what is seen as the stifling control of a society increasingly dominated by values of efficiency and control, especially through the use of sophisticated technology. The role of cultural values is key to critical theory. Certain cultural values are either promoted or denigrated according to whatever ideological position the elite hold. More complete definitions of cultural values and ideology follow.

It is more precise to describe what critical theory is by saying what it is not. Morrow (1994, 56-57) asserts this when he discusses the advantage of a focus on research paradigms as opposed to a "theory." Research paradigms redirect attention away from a myopic focus on "theory" as if it were some kind of fully unified and logical system created by an isolated individual, as opposed to the continually revised outcome of a community of researchers. One of the assumptions in critical theory is that there is no such thing as "Truth" or "Value" all by itself, but that these are always somebody's

ideas. Social reality is constructed. Individuals who think certain ideas do not confront the world in the abstract; they occupy particular positions that shape their outlooks. Mannheim (1994) argues that knowledge produced in society is shaped by the way society is organized - by its culture and structure. To examine something critically then, is to look for the connections that may be hidden from people. Morrow (1994, 7) fleshes out this conception of critical theory, when he provides a more detailed definition of this social scientific perspective. In line with Mannheim, Morrow asserts that there is a sense of critique in critical theory given its concern with "unveiling ideological mystifications in social relations."

Critical theory is to an ideology as a detective is to a mystery. As a perspective on social life, critical theory is concerned with the connections that may be hidden from people. What does critical theory uncover when investigating ideology? More simply, what is ideology? According to Eagleton (1991, 3-4), ideology may be defined in terms of legitimating the power of a dominant social group or class. The process of legitimation involves at least six different strategies. One such strategy is to *promote* specific cultural values. Johnson (1996, 309) defines values as shared ideas about how some things are ranked in terms of their relative social desirability, worth, or goodness. For example, certain personal characteristics emerge as cultural values in policy documents concerning technological integration. To mirror the ever-changing power and sophistication of computer technology, people whose personalities enable them to adapt quickly to change are currently considered the ones with the potential to succeed in the global economy. In addition to promoting such specific values, ideology also *naturalizes*

and *universalizes* values to make them seem beyond reproach. In effect, ideology *denigrates* any opposing ideas or values. It acts to *exclude* any opposing idea by *obscuring* social reality.

Along with detecting ideological mystifications, critical theory also makes apparent an entire range of meanings not apparent in common sense where critique implies negative evaluations. This is because critical theory also addresses the manner in which anything came to be studied; it examines the *a priori* conditions which lead to the decision to undertake this inquiry. Another dimension of critique is associated with the self-reflexivity of the investigator and the linguistic basis of representation. Thus, critical theory takes into account the ability of human subjects to impose their own meanings on social reality through the somewhat imprecise filter of language. This examination of the possibility of a myriad of meanings on social life is the task of hermeneutics.

The hermeneutic tradition (Johnson 1995, 129) is both a theory and method of social life. Originally, this concept was applied to interpretations of the Bible, especially given its history of repeatedly being revised. From a hermeneutic perspective, we cannot tell what something means simply from the thing itself. We also have to know the context in which it was produced. Fairclough (1989, 79) provides a lucid example of critical hermeneutics, a theory and method of interpreting human action and artifacts, as he discusses the production and interpretation of written texts. He suggests that in order to arrive at a coherent interpretation of it, you must do two things. First, you must discover how the parts of the text connect to each other. Next, you need to establish how the text fits with your previous experience of the world, or, in other words, establish a

"fit" between text and world. Thus, coherence emerges from understanding the sequential parts of a text as well as between (parts of) a text and "the world." As interpreters of texts, we draw upon background "assumptions and expectations" (Collins 1993, 245). It is also important to consider that the production of the text, as paradoxical as it may seem, is also an interpretive process. This interpretive process is important because it allows the text to take hold, to become "real" or "commonly" known to those who read it and who may be affected by it. This is where the assumptions and expectations, backgrounded in our experiences, assist in helping us make "sense" of a particular document.

Commonsense assumptions support ideology. The six strategies that enable the process of legitimation sustain a particular ideological position. Ideology operates discreetly and in such a way that to question it would be unthinkable. However, to understand society and its order is to "think the unthinkable." That is the task of critical theory. This type of theorizing gives rise to alternative points of view and, in turn, other answers to established problems. It also brings to light other social problems which, under current ideological conditions, are not visible.

The following section provides a working definition for policy and describes a model which is informed by critical theory. Not only does this model question the policy solutions set forth by any governing body, it also questions the construction of the problems themselves. When applied to a particular policy, the model reveals the commonsense assumptions and ideological positions of those who set policy.

2.2 Public Policy: A Definition

Public policy is a guide to a course of action, a plan, a framework, a course of action or inaction chosen by public authorities to address a given problem or an interrelated set of problems (Pal 1997). It is important to emphasize three aspects of this definition. First, public policy refers to a course of action. Policies are guides to a range of related actions. As different political parties take office, they differ over their interpretation of set policies. Pal (1997) offers immigration policy as an example of the fact that policies are guides to a range of related actions in a field. When political parties differ over their immigration policies, they differ first over principles (e.g. open versus closed immigration; admission based on family considerations or economic contributions). When a policy is changed, the actions that take place in its framework are reconfigured to yield different results.

Second, the definition refers to action as well as inaction, as long as it has been chosen by public authorities. The example of medical benefits and pensions for same-sex couples is one such issue when, up until a few years ago, it never would have entered the minds of most policy-makers that this was a policy issue had to be addressed, and so inaction cannot be seen as a policy decision. On the other hand, once the issue was raised directly, and governments did face the choice of amending human rights acts and other legislation, inaction would have been deemed a policy stance.

Third, the definition refers to problems and interrelated sets of problems. Public policy, whatever its symbolic dimensions, is seen by policy-makers and citizens as a

means of dealing with social problems. Policies are mainly instrumental in that they are not ends in themselves, or even good or bad in themselves. They are instruments or tools to tackle issues of concern to the political community.

The following section on Scheurich's model of policy archeology assumes the above definition of public policy as a course of action or inaction chosen by public authorities to address social problems. While policy archeology accepts the definition, it also addresses another aspect of public policy. It investigates the construction of social problems as well. Policy archeology rejects the notion that problems are natural occurrences. The definition, however, does not take into account that the problems public policy are charged with treating emerge because certain conditions existed that allowed them to emerge. With this important difference between the definition of public policy and the model of policy archeology stated, I now turn to a brief description of the essential difference between Scheurich's new method of policy archeology and conventional and post-positivist methods.

2.3 Policy Archeology: A Critique of the Social Order

Scheurich offers a model specifically for analysis of public policy. Informed by Foucauldian theory, his model considers the social constructions of problems. He contrasts his approach with the traditional and post-positivist policy studies. The traditional approach to policy studies conceptualizes social problems as "disease" and policy as a "treatment" to that disease. In effect, this approach to policy studies is a "real" solution or effort to solve social or education problems. Adherents to the post-positivist approach to policy studies hold that they approach policy studies differently. Kelly and Maynard-Moody (1993) reject the assumption that it is possible to observe social life and establish reliable, valid knowledge about how it works. Hawkesworth (1988, 191) another noted post-positivist contends that:

> . . . post-positivist policy analysis derives its justificatory force from its capacity to illuminate the contentious dimensions of policy questions, to explain the intractability of policy debates, to demonstrate the deficiencies of alternative policy proposals, to identify defects of supporting arguments, and to elucidate the political implications of contending prescriptions.

Thus, post-positivism identifies controversy and contradiction in policies. The post-positivists critique the traditionalists for their naivete in conceiving of policies as "real" solutions to problems. Instead, post-positivists suggest that policy is a symbolic and interpretive effort to voice latent public concerns. Scheurich (1996) contends that both orientations accept or presume a commitment to the larger liberal world-view in which they exist. They both accept that free-enterprise democracies are the best, though not perfect societies. Policy studies as a problematic, as an arena of inquiry, arises within liberal democratic societies for the purpose of improving the social order. While post-

positivists claim to "illuminate the contentious dimensions of policy questions," (310) a function seemingly more sophisticated than the work of the traditionalists, both traditionalists and post-positivists accept as given the liberal social order from which policy and its *a priori* problems emerge. Rather than beginning after social and education problems have emerged, policy archaeology studies the social constructions of problems. This form of analysis does not take the problem as a given. It steps back and assesses how the problem came to be legitimized as such.

Scheurich's model, informed by critical theory, clarifies the assumptions that preceded the policy "problem." It also provides a manner in which to delineate clearly categories in which the analysis is to be organized. Subjective discourse analysis could be a quagmire. In order for the analysis to be meaningful, I use the model to specify what I am looking for and to establish clear categories in which to sort out my observations as I examine the policy documents. By looking at the manner in which policy concerning technological integration is written, I attempt to decode the message using critical social theory.

In each chapter I look at discourse using the three dimensions of discourse as discussed in chapter one. First, I cite specific portions of text from the policy document. I analyze the language of that text in the spirit of critical language study. Second, assuming that discourse is an instance of social practice, I provide examples from personal experience as well as secondary sources to exemplify the institutional and organizational circumstances of the event. Thirdly, and lastly, to address the discursive practice dimension I specify the nature of text production. This analysis uses the concept

of discourse to determine how the phenomenon of technological integration in education is constructed in each document. In examining what is written, how it is written, and what is not written about technological integration in each of the sources of policy, the shape of each organization's interpretation of education in Alberta becomes evident.

2.4 Focussing in on Discourse Analysis

It is vital to settle upon a definition for the term, "discourse analysis" in order to establish a method to analyze written discourse. According to Meinhof (Morrow 1993, 161) "discourse has become one of the most widely and often confusingly used terms in recent theories in the arts and social sciences, without a clearly definable single unifying concept." Finlay (1987, 2) offers a succinct definition for discourse analysis as the study of the way in which an object or idea, any object or idea, is taken up by various institutions and epistemological positions, and of the way in which those institutions and positions treat it. Discourse analysis attempts to uncover the rules and procedures which subtend and legitimate the things we say and believe. It attempts to demonstrate not what a statement means, though that is not unimportant, but rather why that statement was produced, when it was and as it was.

In light of critical theory, forms of discourse analysis have been characterized by two traits: first, interpretations of meaning are sensitized to finding forms of distorted communication linked to power and strategic (or manipulative) forms of interaction; second, discourses are eventually recontextualized with reference to the historical social relations through which they are constituted. A three-dimensional model is useful in

illustrating how a discourse analysis methodology works.

According to Fairclough (1992, 4), any discursive "event" (i.e., any instance of discourse) is seen as being simultaneously a piece of text, an instance of discursive practice, and an instance of social practice. The "text" dimension attends to language analysis of texts. The "discursive practice" dimension specifies the nature of the processes of text production and interpretation. The "social practice" dimension attends to issues of concern in social analysis such as the institutional and organizational circumstances of the discursive event and how that shapes the nature of the discursive practice. The model organizes the analysis into three discrete yet interlacing dimensions. The model is used in this study as a filter to strain the discourse into three dimensions: a text, a discursive practice, and a social practice. Thus, discourses are examined on the basis of the language contained in them, the nature of the processes of "text making" and interpretation, and the description of the institutions and organizations involved in this discourse. A critical examination of language reveals that common sense is discreetly supported by an ideology and that ideology, however obscured, works to legitimate unequal power relations. This is an important step in providing a theoretical positioning for this study. The notion of language as a social practice, a discourse, in other words, is assumed when I analyze the documents.

Fairclough's (1989, 68) thesis is that a critical awareness of language will result in a better understanding of the social order. Finlay (1987, 174) agrees with this important role of language when she asserts that procedures of discourse circumscribe our knowledge of what is exclusively considered to be truth. Our participation in the world

depends on the knowledge that we either have or claim to have. Fairclough's hermeneutic approach to language study indicates his emphasis on the role of the interpreter as well as the producer's interpretive function. Written texts are not simply neutral products of detached writers. Textual meaning is arrived upon both in its reading and in its production. In a critical study, language occupies a different position than in more traditional or post-positivist social perspectives. The conception of language is discourse, which means more than an exchange of words. It is language as social practice. To Finlay, discourse, interaction with/about the world, modifies, indeed co-produces, the cognition of the world. The focus on the relationship of discourse to knowledge raises the issue of what the consequence of the social discursive procedures of new communications technology will be for social knowledge. To Foucault, (Collins 1993, 253-255) discourse is sociologically important because how we talk, write, and think about the world shapes how we behave and the kind of world we help to create. Through discourse we construct what we experience as reality, and as soon as we learn to think and talk about reality in a particular way, we cannot help but shut off our ability to think of it in other ways. It is by this that Foucault discusses discourse as a system of constraints; it draws the line between what can be said and by what cannot be said. To establish where and how these lines are drawn, I employ Scheurich's model of policy archeology. In the following section, I describe each arena of the model.

2.5 A Foucauldian Model for Discourse Analysis: Policy Archeology

Scheurich's model is composed of four arenas of study or focus. Each arena has

its own jurisdiction in policy archaeology. The first arena is concerned with the social construction of problems. It concerns itself with the manner in which problems come to be viewed as such. It questions the construction of such problems and this questioning also reveals what does not constitute a social problem as well.

The second arena examines the social regularities across education and social problems. Sheurich cautions that specifically with this arena he has "primarily alienated policy analysts and drawn a forbidding characterization of a monstrosity called the grid of social regularities" (302). There are tensions between Foucault's ideas on the social construction of reality and a dominant ideology conception of society. While I agree that human subjects possess free will and agency, I, along with Scheurich, contend that we are also constrained by the social order as seen in the grid of social regularities. Indeed, critical education theorists are aware that, as Marx notes, "while men [sic] make their own history, they do not make it as they please" (cited in Weiler 1988, 13). To reconcile this tension between agency and structure, I turn to the ideas of Gramsci. The ideas of Italian Marxist Antonio Gramsci provide a good source for a theoretical approach that can encompass both agency and structure. What is central to his thought is the attention paid to the various ways in which the dominant classes in any society impose their own conception of reality on all subordinate classes, and the possible ways in which the oppressed can create alternative cultural and political institutions to establish their own understanding of oppression. This understanding opposes oppression and changes it. Gramsci addresses these problems through the concept of hegemony.

Hegemony is a particular form of dominance in which a ruling class legitimates

its position. For dominance to be stable, the ruling class must create and sustain widely accepted ways of thinking about the world (Johnson 1995, 128). This concept also includes the possibility of and the power of individuals to contest hegemonic control. This means that the dominant classes must work to reimpose their dominance because it is in constant danger of being destabilized. This possibility for destabilization emerges from the self-critique present in human consciousness. Historical change is possible through thought and action. Thus, to reconcile the tension between agency and structure, I use Gramsci's concept of hegemony to consider the possibilities of social change and the constraints to those changes.

One example of the constraints imposed by the grid of social regularities is my rather futile attempt to teach the economically, socially and culturally disadvantaged students in the "inner city." Regularities of governmentality, professionalization, choice, and class posed a great obstacle to reaching personal and professional goals. As discussed in chapter one, I, a white, female, middle-class professional worked to inculcate a love of books in my resistant students.

The third arena studies the social construction of policy solutions. It takes its cue from the aforementioned grid of social regularities. Just as social problems are constituted by the grid of regularities, the range of acceptable policy solutions is similarly constituted. For example, the policy governing the integration of technology in Alberta schools is a result of some of the regularities that I found were hindering my attempts to teach students to love books. Governmentality, professionalization, choice, and class become both an obstacle to and reason for policy change. The difficult part of creating

policy is that those who decide it are most likely positioned in society as best able to first, understand it and second, benefit from it. This is not to say that those who write or decide on policy conciously set out to reward only themselves and people like them. Policy makers or policy analysts do not intentionally or consciously shape policy. Regularities set the ground rules for making some policy choices as relevant and others as virtually invisible. The grid of regularities privileges some choices over others. The ensuing analysis makes apparent that these choices do little to reach all strata of society. However widesweeping and innovative the policy appears in text, its effect tends to reproduce the social order.

The fourth and final arena of Scheurich's model of policy archeology is the examination of the social functions of conventional and post-positivist policy studies. This arena looks at the policy analysis process itself and suggests purposes for it. Policy studies as a problematic, as an arena of inquiry, arises within liberal democratic societies for the purpose of improving the social order. Like the previous three arenas, Arena IV is constituted by the grid of social regularities. Policy studies is but one governmental apparatus that produces grid-congruent problems, problems groups and policy solutions. It investigates whether policy is regulatory, constitutive or instrumental, or perhaps a combination of any of the three. Policy analysts' discussions and debates about possible policy solutions are key to constraining the range of possible policy choices. In this study, I use the technology integration policy from the Alberta Teachers' Association (ATA) as an example of discussion and debate surrounding the integration of technology in Alberta schools and its pursuant effects on teachers, students and pedagogy. The ATA

(ARA 53, 1999) identifies several issues which affect the development and direction of policy change. Specifically, the ATA highlights major funding cutbacks, larger class sizes and the intensification of teachers' work, greater diversity in the classroom, partnerships with business, school-based decision-making, and an emphasis on testing and accountability. Raising these issues illuminates the contradictions of government policy and reveals the difficulties of making this policy into practice. While the ATA makes no suggestion for alternatives, it does offer a more humanistic and democratic perspective on educational computing.

However, the analysis reveals that the ATA stance on classroom computer technology is more in word than in deed. There are contradictions between the general resolutions set out in text and the actions of specialist councils under the ATA's umbrella. While it denounces "market fundamentalism and the trend toward privatization and corporate penetration," (1999, 52) ATA specialist councils warmly welcome such penetration at conferences set in Jasper Park Lodge. Thus, it may be argued that policy is mainly instrumental. It is a symbolic attempt to "solve" constructed problems using solutions constrained by regularities that benefit those who are least needy of help.

In the following chapter, I offer a semiotic reading of the policy. This reading uses Scheurich's first arena of policy arechology. This arena, the construction of social problems, is organized around government assumptions. I present these assumptions as metaphors of computers; metaphors which appeal to "commonsense."

Chapter four departs from Scheurich's model and empirically refutes commonsense metaphors justifying computing.

Chapter five returns to the policy archeology model and considers the regularities of governmentality, professionalization, choice, and class as features of the analysis of policy discourse. As arena II of the model, this chapter suggests another explanation of the causes and effects of educational restructuring. It offers that government considers a business model superior to the current model of public education. It also suggests that effects of this kind of restructuring benefit the already privileged and further entrench existing class divisions.

Chapter six continues with the policy archeology model. It is framed by Arena III, the construction of policy solutions, and it considers Alberta's unique socio-political climate, its historical reliance upon resource extraction, and the latest government's impulse to diversify the economy as influential factors in policy discourse. Policy solutions, like school business partnerships, are made to appear enhancing the public good when they are more inclined to serve private interests.

Chapter seven has a difficult task in that it approaches two perspectives of policy studies as both tools and as problems. It does two things simultaneously: analyzes policy and critiques the analysis by showing the limitations of the traditional and post-positivist approaches to policy studies. It reveals that both perspectives lack the ability to effect societal change because both accept the socio-political context as given. What is surprising in this analysis is the revelation that the ATA may not be as effective in supplying significant dissent to the Progressive Conservative agenda. Instead, it may be reinforcing commonsense assumptions about schooling and underscoring the "correctness" of government restructuring.

Chapter eight provides evidence to question the fundamental assumption made by government, CBC, and ATA policy. It shows how Daniel Bell, a prominent neo-conservative theorist, was incorrect in asserting that a new type of society, the "information society" was emerging. The chapter also shows how this incorrect theory informs policy discourse. It suggests reasons to doubt that a new social and economic order is emerging on the basis that Bell's theory is teleological, evolutionist, and technologically deterministic. Chapter eight uses Poster's theory of the mode of information as another and better explanation for the role and effect of computer and telecommunication technology. Finally, it recommends that a new position be created within the schools: the teacher-technologist.

Chapter 3 - The Study of the Construction of Social Problems and Assumptions by the Alberta Government

3.0 Introduction

The education/social problem arena is the study of the social construction of specific education and social problems. It is concerned with the questioning of social problems as empirical givens. To paraphrase Foucault, "[t]he tranquility with which ...[social problems] are accepted must be disturbed" (Scheurich 1996, 301). This arena of policy archeology examines the naming process, the process by which social problems enter the gaze of the state and policy researchers. This arena of policy archeology refuses to accept social problems as natural occurrences. Arena I of policy archeology critically investigates the numerous, complex strands and traces of social problems prior to their naming as social problems. It establishes the rules of formation (Scheurich 1996, 301).

Rules of formation specific to this study involve assumptions held by provincial policy makers about the relationship between public education and economic prosperity. In this chapter I show that Alberta's educational policy assumes that past curricula and pedagogy are inadequate. The reason for past practices' inadequacy leads to the second assumption of government policy. Policy concerning technological integration constructs current educational practices as deficient. In order to keep pace with the rapid technological change, schools must alter the programs they offer and the manner in which those programs are presented. Thus, the problem rests with the schools as inadequate sites of workplace preparation. An examination of policy reveals that an improved form of education, namely through technological integration in cooperation with business, will garner success in a "rapidly changing world." The notion of rapid

technological change is used as a primary reason for educational restructuring. Thus, the problem is named by virtue of its connection to technological change. The problem is the incongruency of current curricula with business and industry needs. Government educational policy dictates that change is necessary and that the change should take a very specific form. It can be argued that the policy reconfigures schools into sites where learning, students, and teachers are adjusted to parallel business lines. Business is spoken of as responsive to technological shifts and policy reasons that education should be as responsive to these changes.

In my classroom, my response to these changes was my adjustments to classroom practice. I used the commonsense of adolescents to persuade them to get to school, finish homework, and perform well on standardized tests. I tie this example to the use of common sense to restructure Alberta's schools to be more accountable to business. A highly prioritized feature of this restructuring is the push to computerize schooling in Alberta. Of course, the depth, scope, and range of common sense as persuasive technique are far greater and more pervasive on the part of government and business interests. These two forces are successful in their task of employing the discourse of crisis to get schools wired for the 21st century. I organize this discourse by categorizing it into four metaphors justifying educational computing. I provide a brief definition of the metaphor and then exemplify four such examples of metaphors of computers in policy language.

3.1 Implied Comparison: The Definition and Use of Metaphor in Policy Language

On the surface, metaphors draw a comparison between one thing and another.

Stone (148, 1997) argues, however, that in a more subtle way they usually imply a whole narrative and a prescription for action. This narrative aspect can also be read into policy documents from the provincial government as well as from the Conference Board of Canada (CBC) and the Alberta Teachers' Association (ATA). One of the most pervasive stories about public education is its inadequacy in "producing" students with adequate preparation for the workplace. This narrative tends to figure more prominently during times of high unemployment or other types of economic crisis. Similarly, this rhetoric subsides when the economy is less fragile. What follows is a sample of four metaphors used to justify the computerization of education. These prescriptions for action have the effect of appearing normal and natural. However, these metaphors commit what Rein and Schon have termed the "normative leap."[6] The notion of a leap comes from the jumping from description and prescription.

3.2 Metaphor One: Computers as Job Skills

Computers as job skills is one metaphor used to justify computer literacy in schools. Citizens have accepted political leaders' claims that educational reforms along business lines will provide solutions to economic problems (Livingstone 1998, 3). During a period of high unemployment and job insecurity, teachers, students, and parents are interested in initiatives that allay these fears (Taylor 396, 1998). An OECD (1992) report contends that with rising unemployment in the 1980s, teachers have been

[6] See Rein, Martin and Donald Schon, "Problem Setting in Policy Research," in Carol Weiss, ed., *Using Social Research in Public Policy Making* (Lexington, Mass.: Heath, 1977).

encouraged to "listen harder to what employers want and to look for closer links between school and the workplace." As the situation stands, students are deficient in their computer skills and policy concerning technological integration must move quickly to address this lack. Logan (1995, 22-23) is particularly harsh in his criticism of schools. The figure of the school, which has been slow to change, has taken on new meaning because of the radical changes in the information environment in which it operates. He contends that the school system, once considered an engine of social mobility and a fount of opportunity, is now regarded by many students as an obstacle or a prison in which one must do time until one is released into the real world as an adult. In order to succeed, the figures of the school and workplace must change so that they are back in synchronicity with the real world, a world that is undergoing continuous and rapid change due to the accelerated flow of information. Similiarly, Eitzen and Baca Zinn contend that "new attempts are needed to upgrade schools in ways that can better match jobs and potential employees...mass education fails to prepare [students] for life in the information age" (Ray and Mickelson 1993, 7).

The above arguments facilitate the acceptance of technological innovation by assuming that this new innovation requires new and more sophisticated skills from wage earners and that these skills should be taught before students are earning a wage. While this research is from the United States, these assumptions about computers are also found in Canadian sources as well. Mangan (1994, 265-267) attests to this when he traces the government initiatives in educational computing in Ontario from 1980 to 1985. He suggests that the dominant rationale presented was overwhelmingly one of training

students for the world of work. Dr. Stephenson, then Minister of Education, stated "the educational and training systems and the industrial sector must see themselves not as separate entities, but as partners in Ontario's future, with the well-being of each depending largely upon the effectiveness of the other. This is essential" (Mangan 1994, 264).

Alberta documents also link computer skills with job skills. An example can be found in *Framework for Enhancing Business Involvement in Education, 1997*, a status report from the provincial government concerning the summary of action taken and work plans to form closer ties between schools and business. One of the 53 recommendations is to "continue to provide students/schools with labor market information, using information highway technology, as set in the Alberta Advanced Education and Career Development Plan" (1997, 8). In yet another Alberta Education document, goal five for Alberta's Education system is that "information is integrated into education to enhance student learning, and increase efficiency and flexibility of delivery (*Meeting the Challenge* 1997, 13). Department strategy number 5.30 achieves that goal through "work with Advanced Education and Career Development to coordinate strategies between schools and the post-secondary system for integration of technologies into teaching and learning" (13). The presence of the Department of Career Development as an actor in achieving this goal shows the intent of computer integration as primarily one of preparation for the workplace. As well, strategy number 5.34 cites that "education partners [to] improve the electronic exchange of information" (14). Of course, one of those partners is business as noted under the subsection "Standards for Student Learning"

where "business will be a key player in defining the specific learning requirements of industry" (7).

3.3 Metaphor Two: Computers as Individual Tutors

Computers as individual tutors represents the push to individualize and tailor instruction to specific learner needs. The promotional discourse for this metaphor cites the superiority of computers as instructors. They are "superior to their human colleagues" because they are never too tired or harried to answer a question or spend extra time with a student (Shaker 15, 1998). Research indicates that despite students' assertions that a teacher provides better assistance in learning how to do geometry proofs than an artificially intelligent computer-based tutor, students prefer using the tutor to learning in the more traditional mode (Scott 1999, 61). The student, despite his or her affiliation to the teacher and his or her knowledge that the teacher's understanding of the student is both profound and sympathetic compared to any Intelligent Tutoring System (ITS), is still won over by the machine.

Such a tutor need not be in an orthodox school classroom or building. This implies that students could learn anything, anywhere so long as a computer is there. This purportedly allows for greater efficiency and productivity in the classroom and makes possible alternatives to the traditional classroom. Niemi and Gooler (1987) note the following benefits of information technologies for learning outside the classroom: increased access to learning opportunities, access to more and better information sources, availability of alternative mediums to accommodate different learning strategies,

increased motivation to learn, and potential for both individualized and cooperative learning. Lewis Perelman (1992) in his book *School's Out* makes such an argument.

Nicholas Negropointe (Healey 1998, 17) goes even further with this conception of the computer when he states that "Computing is not about computers any more. It is about living." Computers are replacing the institutions that have schooled and brought people together. They are redefining the way we organize ourselves and the way we see ourselves. An American educational bureaucrat agrees with this idea of restructuring the school as an institution. Dr. Diane Ravitch, former assistant secretary of Education, envisions the challenge that technology presents to the tradition that "children should be educated in a specific place, for a certain number of days during the week and year" and that ". . . If Little Eva cannot sleep, she can learn algebra instead. At her home learning station, she will tune in to a series of interesting problems that are presented in an interactive medium, much like video games" (Postman 1995, 377).

3.4 Metaphor Three: Computers as Class Equalizers

In this section I show that computing companies portray computers as unbiased and equally beneficial to anyone who uses them. The term "user-friendly" comes to mind. Computers seem not to make any distinctions between race, gender, and class. Advertising campaigns from various computer corporations attest to this portrayal of the friendliness and accessibility of the technology. For example, Microsoft's advertising slogan "Where do you want to go today?" suggests that the computer can take anyone anywhere, just press the button and move the cursor. Similarly, an educational extension of this open-doors policy of technology is seen in Microsoft's "Anytime Anywhere Learning." This flagship education initiative equips elementary age students with laptops complete with Microsoft Office and other productivity software to help prepare them for the workforce" (Robertson 1998, 158). A press release from the computer company claims that the technology is capable of transforming even the most recalcitrant of students. Jacobo, a grade five computer-have not, was transformed from being a student who "wasn't interested in school and didn't want to do his homework" to one who "does all his homework and classwork" once he started using his laptop. If Jacobo could do it, anyone could. Perhaps the Microsoft advertising department might wish to change the name of their education initiative to Anytime, Anywhere, *Anyone* Learning.

Yet another example attempts to portray computers as gender-neutral and value-free is seen in an ambitious plan put together by the federal government and corporations. SchoolNet, a publicly-funded initiative of Industry Canada, hopes to link 165, 000 Canadian schools, libraries, hospitals, and universities to the Internet and to each other.

An important term is "connectivity." According to the editor of the SchoolNet magazine, connectivity [is] "about liberating kids through technology, about ensuring they have instant access to the latest information and new knowledge tools so that they can quickly acquire the new sets of skills their future will demand of them" (Walker 2000, 2). This linkage would purportedly enable all schoolchildren in Canada to research any institution worthy enough to be on SchoolNet. SchoolNet, by definition, could not discriminate as all schoolchildren would be able to use the technology and benefit from the output of the printer or the screen.

3.5 Metaphor Four: Computers as Builders of Global Communities

In addition to assumptions about computers as job skills, individual tutors, and as class equalizers, assumptions about computers can also portray them as facilitators of intercultural understanding. For example, the Internet has also been touted as a vehicle which is "free from the elitist speed bumps of other media" (Robertson 1998, 177). Logan (1995) also notes the particularly humble beginnings of this technology as revolutionizing the way we see our world. The use of computers in the workplace was the brainchild of lowly "worker-bee" types, not the overhead executives. Stewart Brand, editor of Whole Earth Catalog, claims that "information technology has done what the New Left never actually accomplished, which is give power to the people...The Net is a gift economy. It is completely based on sharing not on exchange." Rheingold concludes that the Net would befriend progressives who sought equity and greater democracy, even though he admits community-friendly technologies are rare (Robertson 1998, 177).

Initiatives exist which attempt to counter effects of the widening gap between computer have and have-nots. Acknowledging that there are computer have and have-nots is supposed to bring about intercultural understanding. An example of such an initiative is the International Communications and Negotiation Simulation (ICON) project put on by the University of Maryland. Through a computer-assisted simulation model, it uses technology to connect students across intercultural divides with a program that facilitates participation from across the socioeconomic spectrum (Starkey 1998, 175).

Another example of computers as community is seen in Playing to Win. In 1980 Antonia Stone founded Playing to Win, Inc. and in 1983 established the Harlem Community Computing Centre in the basement of a public housing project. Her recounting of the experience indicates that the positive power of computer-based technologies lies in their ability to serve humankind and to enable people to do things better than they previously could by eliminating or lessening drudgery and enhancing creativity (1998, 198). She discusses success stories and comments that, at their core, is the recognition that the kind of education and skills needed in our society today includes the ability to use technology. She saw that the poor people whom the centre served could not get good jobs and could not participate actively in decision-making at any societal level.

The exemplification of metaphors of computing provides the manner in which computers are conceived of in policy language. While all metaphors are used to justify computers in classrooms, one metaphor emerges as the most pervasive. *Computers as job skills seems to address the social problem of the mismatch between the needs of the job*

market and the curriculum in tax-funded schools. Its pervasiveness derives from its connection to the economy. The metaphor of computers as job skills provides a solution to a constructed social problem. The remaining portion of this chapter examines the manner in which this problem is constructed and the process by which this problem enters the gaze of the state.

While all four metaphors of computers are evident in policy language, the one metaphor which lends visibility to the social problem of public schooling's inadequate ability to prepare students for the workplace is the computers as job skills metaphor. A look at policy from any of the three sources, namely the provincial government, the ATA or the CBC, reveals that there is no over riding concern about the disparity between classes or the (computers as class equalizers) or the lack of the sense of community in our society (computers as builders of community). A case can be made that computers as individual tutors resonates in the policy language. The focus on the individual's responsibility and initiative emerges as features of this metaphor. For example, in *Matching Education to the Needs of Society*, the CBC expounds that children will be ready to take "personal responsibility for lifelong learning" (1996). Similiarly, in *Meeting the Challenge III*, the Alberta Government mandates that "All students will have access to education programs that develop individual potential . . ." (1996, 8). This resonance comes from the connection that this metaphor has with the kind of values that the government wants to promote in Alberta: self-reliance, individualism, and entrepreneurship. A theory which informs these policy positions and which sustains the computer as job skills and computers as individual tutors is human capital theory.

3.6 Human Capital Theory: An Outline of Its Pertinent Features

Human capital theory presumes that people are like machines. The role of workers in production is similar to the role of production and other forces of production. For example, just as industrial societies invest in factories and machinery in order to enhance productivity, they also invest in schools that enhance the training, knowledge, and skills of their workers (Johnson 1995, 133). People's learning capacities are comparable to other natural resources involved in the capitalist production process; when the resources are exploited the results are profitable both for the enterprise and for society as a whole. From its inception in the United States after World War II, human capital theory tended to equate workers' knowledge levels primarily with their levels of formal schooling, to rely on quantitative indices of amount of schooling in estimating individual economic return to learning, and to infer that more schooling would lead to higher productivity and macroeconomic growth (Livingstone 1999, 162).

3.7 Arena I Applied: Social Problems as Reflections of a Postindustrial Society

Most careers require advanced levels of computer proficiency. Evidence for this seems prevalent, especially in the career sections of newspapers as well as on-line databases. Where there was once a sense of comfort that an undergraduate degree could provide satisfying and well-remunerated employment, it seems that university preparation is not enough. A technical credential is deemed as necessary to finish off any credentialled schooling, university or otherwise. One example of such a technical

finishing school is ITI College. Its radio advertisment features a male, John Murray, bemoaning that his Bachelor of Commerce credential is "not enough." After attending an "intense" nine-month computer training course, he lands a job as a human resource manager, "two days before finishing his computer course." [7] Thus, career sections of newspapers and advertising for technical finishing school assume that in order to stay competitive, even the university-educated must continually upgrade. This advertisement is a reflection of one of the tenets of human capital theory. The more schooling you have, the more economically successful you will be.

Another example of the increasingly computerized workplace is found in a feature story on a national news program. However, the young man featured in this "technological success story" has a different problem. While John Murray in the ITI technical institute commercial needs to add to his skill set by attending this finishing school, computer companies are wooing Eric Paryas before even the completion of his program.

The *Midday* news program featured a story about the "worldwide shortage of computer engineers and computer programmers."[8] Ron Zambonini, CEO of Cognos, a computer "solutions" firm, asserted that there are not enough qualified people to fill 20, 000 positions in the computing field and that computing firms such as his must do more to attract qualified workers. He suggested that innovative recruiting strategies such as visiting high schools and hosting creatively themed recruiting incentives wold attract

[7] ITI College, Radio Advertisement, July 10, 1999.

talented students to co-op programs in computing science.[9] Eric Paryas, a computing science student from the University of Waterloo, spoke about other measures computing science firms would use to lure prospective students to these firms. He recounts that computer companies offered large sums of money as signing bonuses if he agreed to work for them. Canadian and American companies did not seem bothered by the fact that he was only in his second year of his four year degree program. Paryas has turned down job offers and wishes to complete his program at Waterloo. He is currently in a co-op program with Platform Computing. But Paryas is in an enviable position. A young, sought after member of the computer cognoscenti needs not to be constrained by the conditions of a university degree program. Indeed, one of the news program hosts asks, "What's the point of finishing your degree if you can get such lucrative offers from so many companies?"

This news story as well as the radio advertisement bear out the policies' claims that computing is the "industry of the future." This industry is characterized by rapid change within it and computer programmers who can cope and, indeed, thrive, upon the flux in the industry. Career sections of newspapers, radio advertisements and news stories are testimonials that assure that if you are bright enough, young enough, and ambitious enough, you will find unbridled success in this industry. As workers in this industry, Murray and Paryas exhibit key characteristics outlined in policy documents like

[8] Featured story on Midday news program on Tuesday, July 27, 1999.
[9] Cognos hosted a recruiting evening using a David Letterman theme. It was decided that computing science jobs were perceived of as too "geeky" and by associating the firm with the acerbic and caustic wit of David Letterman, Cognos would appear more fashionable and attractive to work for.

the Conference Board of Canada's *Employability Skills Profile.* Murray and Paryas are luminous examples of the policy's "Personal Management Skills." Both exhibit "self-esteem and confidence (1)" as well as "initiative, energy and persistence to get the job done (1)." This latter quality is particularly evident in Murray who, despite having a degree, still sought out that extra credential so that he may "access and apply specialized knowledge from various fields (2)." Paryas is also well versed in the teamwork skills aspect of the profile. His statements in the news story concerning his affinity for the "teamwork" and sense of "common purpose" provide an example of the need to "understand and work within the culture of a group (1)."

The number of jobs and the higher salaries that are paid for those jobs for any prospective worker makes it appear only sensible to tailor curriculum and delivery to a technocratic model especially when companies such as Cognos go to high schools to recruit potential workers. Its sensibility derives from a commonly held assumption about the world of work and success in school. A high paying job is a highly prized outcome and policy from the provincial government as well as the CBC equate success in school with success in the job market. What ties these cases together is the assumption made about the purpose of schooling. The underlying assumption about schools is that schools function primarily to provide work-ready employees. Stories in news programs, in commercials and in career sections of newspapers hint at how wonderful life could be if one would have the right qualifications for the right job.

This scenario, however, may not be as glowing as it would appear. Paryas' reasons for enjoying his work at Platform are very telling about the expectations and working conditions at this company. He enjoys the "culture" at the company and that there is a sense of a "common purpose" and an emphasis on "teamwork." Paryas says this is very important since "you often spend 70-80 hours a week at the office." Zambonini, the CEO at Cognos, did not broach the topic of working conditions at his company. It might make the job seem less attractive if a high ranking manager admits to onerous working hours as a condition of employment. I speculate working conditions for newly hired employees would be similar to Platform's since both companies are concerned with computer applications, both are less than five years old, and both are trying to eke out a market share in a highly competitive sector. While Paryas is obviously content with his job and justifiably excited about his career prospects, this young man's future is undeniably bound by his demanding career. Slavish attention to one's job leaves no time for relationships, rest, and community involvement. While he is well paid for the work he does, his employer owns his life since, for the most part, he spends 67 percent of his waking hours on the job. Paryas does not have the time to do anything other than his job and the minutiae necessary to assure that he is at work ready to work.

Such stories as heard in advertisements and seen in the news provide career maps for people as they consider their place in the changing world of work. For most people, the industry of the future demands more than a university education may deliver. Their anxiety is somewhat eased with the existence of technical finishing schools which claim to deliver employment *before* completing the course. Advertisements featuring an

unemployed university business graduate prey on people's sense of vulnerability and then provide some level of comfort with pronouncements of employment success. For others, a university education may not be required. As seen in Paryas' case, job offers were coming in before he graduated. Zambonini, as CEO, was bypassing universities altogether and recruiting from the high schools.

The above cases illustrate three points which lead to the emergence of a social problem. First, the news story on Paryas as well as the technical school commercial illustrate that the traditional sequence of credential completion and entry into the workplace has been disrupted by the ever changing nature of the computing industry. Second, the cases illustrate that employers are placing more demands on prospective workers to upgrade their skills, or in the Cognos example, employers are seeking other talent pools like high school computer prodigies. Third, these cases also point to the fact that workers are willing to accept the need to continually upgrade their skills in an attempt to keep pace with the job market.

A social problem emerges. The flux in the highly visible and volatile computing job market disables traditional schooling from providing an adequate supply of qualified workers. The apparently high number of lucrative jobs available in the burgeoning computing industry has policy makers in business and in government questioning the relevance of publicly funded education. Policy on technology integration in education is a reflection of this shaken belief in education as it was and sets a new course for education as it will be.

Workplace preparation deficiencies are not just plaguing the universities. Changes

in the marketplace have placed new demands on curriculum in the schools at all levels. Secondary schools, as evidenced in policy, are also prey for the mismatch between curriculum and job skills. Changes in policy concerning what is taught in schools are a response to this presumed lack on their part to prepare students for the world of work. Policies from the Alberta government address this deficiency by promoting the integration of technology in education. The 1997 message from the minister in the last of the *Meeting the Challenge* series identifies the "integration of technology in education as a new goal" since " students need information technology skills for the workplace and post-secondary studies" (1). The following year an interim program of studies set out what, when, where, and how students learn about information technology. The *Information and Communication Technology Interim Program of Studies* cites: "In a society that is moving from an industrial economy to an information one, our students need to have technological skills for their future success" (1998, 1).

Policies under review assume a postindustrial theory of society where information is treated as a commodity. To Livingstone "post-industrial economy" and "knowledge economy" are constructed images which can be used interchangeably (1998, 135). Both have become a common article of faith in public discourse as well as in policy. Policies under discussion are also outcroppings of an economy characterized by massive insertion of science in the economy, the changing composition of the workforce, the internationalization of production, and the fragility of complex, interdependent advanced technologies (Poster 1990, 30). A preponderence of evidence suggests there are shifts in production and in employment. Major changes in the composition of the

employed workforce over the past generation in nearly all market economies has caused a sectoral decline of manufacturing and relative growth of personal, financial and social service employment. Other shifts include have been the relative increase of part-time and temporary jobs, and greater participation of married women in paid employment (Livingstone 1998, 137). These policies are informed by human capital theory which compares people's learning capacities to other natural resources involved in the capitalist production process; when the resource is effectively exploited the results are profitable both for the enterprise and for society as a whole.

The central empirical claim of human capital theory, that greater learning efforts are closely related to higher earning level, underpins Alberta government policy on education. Words such as "prosperity" and "standard of living" persuade that with such an education, students and their parents should not fret over their material circumstances. Those worries will be allayed in the short-term as well as the long-term. By achieving cost-reductions through "joint delivery of services among school jurisdiction and other local agencies" as well as partnering with corporations, the Alberta government attempts to assure financially stressed parents that this new and improved schooling will not cost them any more in taxes. Long-term worries are allayed as Alberta education policy documents concede that if the restructuring is successful, then students will "receive the education they need for entry into the workplace and post-secondary studies" (*Meeting the Challenge* 1994, 4). It is as if the policies are used to assuage any feelings of uncertainty or fear. As well, insofar as the policies are concerned, there is an underlying fear of the spiraling costs for providing the necessary hardware to ensure that students

have the best possible advantage by using the best possible computers. Policy-makers in Alberta's government find themselves reconciling the contradiction of convincing the electorate that expensive upgrades to the education system are necessary while assuring the citizens that students will receive an "excellent, *affordable* education" (*Meeting the Challenge* 1994, 2). The provincial government hopes to convince the electorate that these costs will not result in higher taxes by ensuring that businesses will be partnered with schools.[10]

3.8 Scare Tactics: Schools Must Change

To justify the policies, the policy-makers use that fear to convince the electorate that this course of action is not the right one but the only one. Their claim is that the world of work is changing at such a rapid pace that the schools must address the apparent lack of properly trained workers by providing programs to address the deficit, remain competitive and maintain the standard of living to which most Albertans have become accustomed. Robert Logan, as a promoter of the discourse suggesting the poor fit between schooling and jobs, goes to lengths to explain how and why schools must change. He suggests an effective way to organize learning in the schools and in the workplace within the context of the new information environment of computers. He stresses the need to reformulate the relationship between "schooling, education, and

[10] See AB Education (March 1996) *Framework for Technology Integration in Education.* (Report of MLA Implementation Team on Business Involvement & Technology Integration). See also *Meeting the Challenge Documents (I-IV) 1994/95-1996/97, 1995/96-1997/98, 1998/99-1999/2000).* As well

work." Logan is also convinced that technology is changing at such a rapid rate that it is forcing the integration of education and work and that a distinction should be made between "schooling" and "education" (1995, 9).

Logan explains the difference between "schooling" and "education." Schooling is where basic learning takes place (1995, 136). It is a characteristic of childhood and whatever goes on as the child is being schooled is usually unrelated to professional development Education, on the other hand is an all-out concerted effort to synchronize the efforts of school and workplace into a mutually beneficial whole. He goes further to suggest that schools that provide students with knowledge of the latest developments in their field but do not equip them with the skills to update that knowledge are failing their students. Logan's thinking is in-line with policies from the Alberta government.

Both Logan and the Alberta government construct the problem as one belonging to the schools. Logan provides a pithy question as the problem: How can the school system be restructured so that the goals of education and the vocational needs of society in the information age can be better matched (1995, 12). Alberta's education policies attest to this rapidity of change. Statements such as "Meet the needs of students in a rapidly changing world" evoke visions of a whirlwind that properly funded schooling will tame and in turn, convey benefits to needy/greedy students. The deficiency of "information workers," if addressed, would ensure economic and thereby, social stability.

Both the Alberta government and Logan conceptualize technology as an

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Information and Communication Technology, Kindergarten to Grade 12: An Interim Program of Studies,

independent force which must be "harnessed" if it is to be of benefit to the economy, and ultimately, to people.[11] A whole array of tools, techniques and processes is enhancing and altering human activity...." This theorizing positions humans as hapless victims that had better prepare themselves against the onslaught of computerization or else. Human activity is seen as reacting to instead of causing this technology. This statement also assumes that humans have no choice but to submit as implied by the word "pervasive"...there is no escape or so it is promoted in policy discourse.

Livingstone (1998, 135) suggests that the creation of the future in this largely technocratic mode of thought

> apparently means discovering trends and then using further technical ingenuity to either mute or facilitate them. However sophisticated they become, such approaches are based on a presumption that the future really depends on forces that are beyond human capacity to control in any significant way. The enduring image of the future left by all such writings is one of irreversible technocratic trends remote from whatever social and political capacities ordinary people might retain.

Alberta's policy-makers do have reason to believe that their course of action is the only one. They would point to the changes in the economy as preconditions for the policy. The most obvious recent change in the technical division of work has been the rapid, widespread introduction of computer-based technologies. To illustrate, a Canada-wide longitudinal survey has found that the proportion of employees working directly

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June 1998.

with computer technologies increased from about 15 percent in 1985 to 37 percent in 1991(cited in Livingstone 1998, 147). A 1994 U.S. survey (National Centre on the Educational Quality of the Workforce, 1995) found that over 40 percent of production and non-supervisory employees were using computers in their jobs. The theories of post-industrialism have promoted the belief that the prevalence of information processing over material handling in the mode of production would necessitate skill upgrading and greater creativity and critical thinking of workers (Livingstone 1998, 137). Education policy documents from Alberta support this belief when they states that the outcomes of communicating, inquiring, decision-making, and problem solving are to promote critical assessment of information, management of inquiry, the solution of problems, and the use of research techniques and communication to a variety of audiences. Alberta's government is influenced by the notion of economic competitiveness as a pivotal reason for computerizing education. The *Framework for Technology Integration, 1996* cites, "The future of our children and the future prosperity of Alberta lie in the ability of our students to be successful, productive citizens. To ensure that all of our students have the best advantage possible, Alberta must continually look for ways to improve student learning" (2).

The need to improve student learning is motivated by the promotion that a new social and economic order has emerged. This emergence requires that tax-funded

[11] This section looks specifically at reification. Reification is the process of taking an idea or concept and treating it as though it were something concrete and real. As used by Georg Lukacs, the concept of reification reveals how we become separated and alienated from ourselves.

schools change what is taught and how it is taught. Society is constructed in the image of a "post-industrial economy" or a "knowledge economy" whose dominant feature is change. Change is rapid and merciless. Thoughtful, deliberate pondering is not an answer. Quick, "just-in-time" preparation for employment are features of the educational restructuring. Schools are promoted as needy of improvement in their capacity to prepare students. As they currently exist, schools are ineffective bastions of mediocrity and unaccountability. When corporations enjoy highs in stock prices and profit dividends, these features become markers of success in the current discourse concerned with cost-savings and profit margins. With the need to quantify and justify existence in this new order, corporations are beacons of success and schools need to reform so as to become more like corporations. Indeed, the series of educational policy documents that emerged against a backdrop of deep funding cuts to education (as well as health care and social services) are labeled *Meeting the Challenge*. The notion of a challenge can be read as the challenge to meet and beat the demands of our "information" society or it can mean the challenge to change schools under the guise of "improving" them.

One reason to improve schools may be to preserve the shrinking middle class. Increasing disparity between rich and poor in the 1990s requires a solution (Kachur & Harrison xxvii, 1999). Finance minister Paul Martin seems committed to this improvement with his decision to institute a $2.5 billion, multi-year Canada Millennium Scholarship Foundation. This foundation seems to address the money woes of those middle-earning parents of students who fall short of paying the ever-rising tuition fees. Targeting money at a select group of Canadians assumes that the way to a middle class

life is an education. To function in this new order people must make dispositional changes in order to "learn a living." Technology is the salvation, according to Logan, and scholarship money, according to Martin, enables some people to be saved. Thus, assuming the descriptions above about the capabilities of technology and the desired characteristics of corporations, public schooling must change in order to survive the new order.

3.9 Referentiality: Exchange and Reification of Communication

In light of the myths perpetuated by explanatory metaphors, it is also meaningful to examine the manner in which the discursive procedures treat communications technology and the mechanism of "referentiality." Referentiality is a discursive procedure, which substitutes a signifier for a signified. It is strongly linked to the economic function of exchange-value. As a procedure, referentiality does not stand alone and isolated in the world of discourse. It is bound and sustained by other procedures. The two most important are exchange and reification. The ability to refer to things, independently of their ontological status, is based upon the exchangeability of those things. This treatment of communications technology has an effect on the way it is privileged in social life. Communications technology is being heralded as the answer to economic and employment woes because of its exchangeability (Finlay 1987, 35). Information is wealth. Exchange value is then substituted for work. The procedure of exchange to which referentiality is so closely linked finds an echo in economic discourse. A review of policy documents with referentiality in mind demonstrates the objectification

of communication and technology. Educational policy documents treat communications technology as well as communication and knowledge as objects. These can, assuming to the theorizing above, be replaced by "wealth." Indeed, a document from the Conference Board of Canada does this. *Matching Education to the Needs of Society* treats education, as realized through "partnerships between education, business and the community" as a template to the "needs of society" (1). This need dictates that children become "ready to learn, ready to work, and lifelong learners" (2). The learning-earning connection is to take place in schools which must undergo a "collaborative renewal" to ensure "quality and relevance" (2). As a corporate-minded think tank, indicators of quality relevance to the Conference Board of Canada are along an economic logic. It asks whether the present system is capable of preparing students for the challenges of the 21st century and for a working life that is characterized by high technology and rapid change. The answer must be an unqualified "no" if a call for a renewal is made. Referentiality, in this case, suggests slippage and substitution of the signifier: education is wealth which is good for business, for schools, and for society.

3.91 Summary

This chapter described the metaphors used to justify the technological integration in tax-funded schools. This chapter presented four important points. First, it presented computers as job skills, as individual tutors, as class equalizers and as builders of communities as descriptions about what computers can do. Second, it suggested that these descriptions became prescriptions for educational restructuring. Third, this chapter

outlined this prescription of schools. It outlined how schools should adjust to accommodate this technology according to the most pervasive metaphor. This metaphor is the one linking increased computing skills with promises of highly salaried careers. This metaphor necessitates and promotes the need to restructure schools along business lines. It valorizes the market model because it is underwritten by human capital theory. This theory equates human learning capacity with economic earning capacity. The fourth point of the chapter was to point out the substitution being made by policy documents of the signifier, education, with any number of economically-minded concepts: jobs, wealth, and income.

It is not difficult to be persuaded by such metaphors. Their ubiquity and prescriptive qualities are very powerful influences. For example, the ITI radio advertisement made me question my career choice to become a teacher. There is an apparent lack of technical application in this job. The fact that this advertisement made me take pause demonstrates that problems concerning technological integration are constructed beforehand. I was not even considering my career path until I heard this radio commercial. It made me question my financial security and my level of preparation for this "rapidly changing world." By taking heed of this ad, I have accepted the assumptions contained in metaphors.

The next chapter casts doubt on the empirical claims made by the above metaphors of computing. Comprehensive research by Livingstone (1998, 135) suggests that the facts do not fit the myths set up by the metaphors. Assumptions about the relationship between increased computing skills and better jobs may not be borne out

empirically. This research suggests that human capital theory fails to deliver the promised gains at a macro level. While the learning-earning link is still valid at the individual level, although with diminishing marginal utility, it is disintegrating at the aggregate or societal level and this disintegration is occurring beyond the market returns perspective of human capital theory.

Chapter 4 - An Empirical Critique of Computer Metaphors

4.0 Introduction

This chapter suggests that metaphors justifying technology integration perpetuate a myth that is not supported by facts. It briefly recalls each metaphor introduced in chapter three, analyses it empirically and calls into question the practical application of the metaphor. This chapter also suggests that cultural values like flexibility, entrepreneurship, and consumerism are promoted by government, business, and science. As well, the chapter demonstrates that these cultural values underpin policy discourse. Easton (1999) provides a counter-metaphor of the perpetual learner to demonstrate the embodiment of these values.

4.1 Metaphor One: Computers as Job Skills

It will be recalled from chapter three that one metaphor of computers being promoted in policy documents is computers as job skills. This metaphor equates the idea that having a thorough understanding of computer applications will net the potential worker a well remunerated career. Using job skills to justify technological integration in education is seen in American and Canadian contexts as an outstanding feature of educational restructuring. Alberta's government is lauded as being at the forefront of such restructuring so as to pay down the debt and ensure the "Alberta Advantage." But pushing for increased computer skills may not ensure future success because skill in computers may not necessarily transfer to job skills. This metaphor is informed by human capital theory which stresses the value of peoples' learning capacities as a factor of economic productivity (Livingstone 1998, 134). Evidence of the influence of this

theory is seen in the use of the term "human resources" to refer to personnel in a particular organization. The power of the theory resides in its ability to convince citizens that future jobs will require sophisticated computer know-how. Students must acquire these skills in school to prepare for this technologized future. Some research casts doubt on some claims of human capital theory.

First, research suggests that the proliferation of high tech industries is more likely to reduce the skill requirements of jobs, rather than upgrade them. Companies want to save money by having blue collar workers do work that more highly educated and salaried employees do. One example of such a company is Motorola (Livingstone 1998, 147). It has a production method that uses complex mathematical guides to manage quality. Engineers would normally do this kind of work but the company, as a way to cut costs, is looking for blue-collar workers with "proved" math skills to do this job.

Second, it does not follow that merely because a new technology is sophisticated, the education that workers need to interact with the technology must necessarily be more advanced. This is supported by a survey of business people for the report of the Commission on the Skills of the American Work Force (1990). Only five percent said that educational and skill requirements are increasing in the workplace (cited in Ray and Mickelson 1994, 8-9). Apple and Menzies, point out that the concept of future job markets requiring computer skills rests upon superficial analysis of vocational trends (cited in Mangan 1994, 268). The biggest growth areas will be in service and clerical jobs, precisely because traditional semiskilled workers are being displaced by computers and automation (268).

The number of future jobs which will actually require the ability to either program a computer, or deal with sophisticated software in some creative way, will be a distinct minority of the positions created by the information age. This shift from material production to data processing does not necessarily translate into higher technical skill requirements for jobs. For most employees, more of the general control of the work process has tended to become computer-based rather than human-centred. A variety of sectoral studies of the effects of information technology and new production arrangements have found few gains in either most workers' need for higher order skills or opportunities to exercise discretionary control in task performance (Livingstone 1998,147). More recently, however, public opinion is catching on to the false hope that computer skills equal job skills. This notion that computer literacy will guarantee today's students great jobs in the "new economy" looks unconvincing in light of widespread youth unemployment. Crompton observes that on the basis of data collected between 1979 and 1993 on the labour market experiences of young adults, that "for 25- to 29-year olds, who have reached an age when the transition from school to work should be over, finding work has become more difficult; for those with jobs, the income earned is substantially less than is used to be" (cited in Wotherspoon 1998, 145).

Furthermore, public education, since its origins has continued to be driven by competing forces that are not restricted to training for work or other economic purposes (Wotherspoon 1998, 140). Schools are driven by the contradictory dynamics of capitalism and democracy.

> On the one hand, schools have traditionally reproduced the unequal hierarchical relations of the nuclear family and capitalist workplace; on the other, they have represented the

> expansion of economic opportunity for subordinate groups and the extension of basic human rights (cited in Wotherspoon 1998, 140).

The emerging pattern for career training and the economy is that job preparation and training gain force as priorities when there are high unemployment and labour market uncertainty. This relationship may explain why these issues come to the forefront in recent debates over educational reform. Employers' need for a supply of adequately qualified labour usually intersects with individuals' expectations that education will lead them to a stable employment future. This intersection occurs when most people have been exposed to harsh realities associated with workplace restructuring and the threat or experience of joblessness (Wotherspoon 1998, 141).

4.2 Debunking the Myth of the Information-Economy Job Glut

Alberta Education's and the Conference Board of Canada's predictions for the future are not new. The emergence of a "post-industrial" workplace dominated by highly educated information service workers has been heralded since the early 1960s. The future, however, has not been as gleaming as the postindustrialists would have us believe. Most information workers carry out tedious, repetitive tasks, earn low wages, have a low social status and work under regimented conditions (Poster 1990, 30). The current workplace reality differs starkly from the myth of the new knowledge based economy. Less than 20 per cent of Canadian workplaces have the defining features of high-tech environments. A 1994 survey of Ontarians reported that there are substantial indications of under use of existing skills. About 20 per cent have higher qualifications (Robertson 1998, 62). In 1996, about half of all employed workers under thirty-five years of age and

about half of all university graduates reported that they possess skills they would like to use but cannot in their present jobs.

Livingstone (1998, 144) suggests that we should assess the transferability of more education to more and better jobs according to a different formula. He suggests a balanced assessment of the contemporary character and trends in work requirements should directly consider (1) the technical division of labor in terms of the allocation of simple and complex tasks between jobs; (2) the social division of labour in terms of the respective participation of various workers in planning the execution of their tasks; and (3) their consequential effects on the class structure of work (1998, 139). The safest conclusion is that there is substantially more upgrading and deskilling occurring within specific occupations (144).

Despite the force of recent arguments that schooling should be doing more to prepare individuals for the labour market, the question remains as to how effective schools could be even if this task were to become their primary orientation. There are several impediments to the ability of formal education, as it is currently structured, to direct and place students into jobs. Significant changes occur in personal aptitudes, labour markets, and employment needs over the normal period of 12 to 13 years that it takes an individual to complete basic schooling. Why would the current government believe that their current policy on technological integration would be any more successful in addressing the needs of the market place than previous governments? Even if it could be assumed that schools were vocational in nature, it is doubtful whether they would have the resources and the ability to meet labour market requirements, particularly

in a context in which jobs, technologies, and skills are continually being redefined and organized (Wotherspoon 1998, 142). Educational policy is accommodating this constant redefinition of jobs, technologies, and skills by writing of "lifelong" learning in its documents. But writing about it is not enough. Schools must have the resources and the ability to meet labour market requirements. The government is not honouring this end of the "lifelong" learning bargain when it cuts spending to schools.

Demand for highly skilled, well-paid employees in many industries has increased as a consequence of new production and information technologies. However, increased productivity, workplace restructuring, and corporate and public-sector downsizing have also contributed to large-scale layoffs, intensification of work, and deskilling. As Osberg, Wien, and Grude (1995, 182-3) conclude in their analysis of case studies of changing Canadian workplaces in the 1990s, problems of "increased unemployment, the polarization of incomes, rising poverty, and greater dependence on transfer payments-all have their special complexities, but there is a root problem, a lack of jobs."

It is difficult to make comprehensive conclusions about the degree of match between education and jobs because of the highly complex and changing nature of work and labour markets. Even well-positioned individuals, those who are able to make long-term plans for their career futures are subject to the possibility that credential requirements may change or that certain jobs may be substantially reorganized or disappear altogether before their formal education is complete.

4.3 Metaphor Two: Computers as Individual Tutors

There are several problems with this metaphor of computers in education. First, it assumes that the virtual world has the capacity to make children learn something that they otherwise would not have in a classroom. It will be recalled that Ravitch used the example of "Little Eva" for this metaphor. On nights that she would have difficulty sleeping, her computer would provide an algebra activity to while away the lonely hours. It seems unlikely that "little Eva" would punch up an algebra lesson when suffering from insomnia. What Ravitch is talking about is not a new technology but a new species of child (Postman 1995, 380).

Second, while it privileges the role of the individual over that of the group, this metaphor equates the human teacher with that of a computer. The fact that computers are spoken of as colleagues indicates a personification of the computer. What also bodes ill is the computerification, to coin a term, of humans. The most avid promoters of computers in the classroom see minimal benefits in the "use" of human teachers, who are referred to as the "vertical [i.e. standing] workforce" (Shaker 1998, 12). Individualized instruction works against the notion that people should be patient, considerate and accepting of others. The amplification of personal autonomy works to distance people from social life. The Conference Board's vision statement in its *Matching Education to the Needs of Society* cites that children will be "ready to take personal responsibility for lifelong learning" (1995, 2) Eva's contribution to the larger society is diminished if the lion-share of her learning is taking part on her own schedule and on her own terms.

Third, it assumes that providing information is equal to providing education.

Even if information and knowledge are treated synonymously, which they should not be, it is not reasonable to limit the view of education as providing information because about other objectives that require students to apply, analyze, synthesize, or evaluate a concept are ignored. Providing information does not accommodate learning objectives that focus on ethical values. And ethical values, cultural tolerance, and personal development seem to be cast aside in the promotion of computers as tutors. Student development would be short changed if learning objectives were limited to recall and comprehension within the concept of "education as providing information" (Sell, 1997). Roszak, Nikiforuk, and Postman agree that students do not need that much information to begin with. Roszak eloquently states: "The mind thinks with ideas not with information." Also, Nikiforuk (1993, D3) humorously offers that teachers have yet to close a school for lack of data.

Indeed, solitary time in front of a computer screen might even prove harmful to brain development. Research collected by Healey (1998,176) indicates that computer use may be detrimental to children as they pass through critical brain developmental stages. For many years, neuroscientists focused most of their work on cognitive abilities. That is changing. Because the emotional brain has close links to bodily states as well as setting the tone for the thinking brain, it is impossible to separate mind, body, and emotions. This entire complex is like a two-way circuit from lower to higher centers, headed by the "executive system" in the prefrontal cortex, located just behind the forehead. This portion of the brain is responsible for self-control, among many other things, and is closely linked to motor planning areas and to the emotional limbic system, which lies closer to the center of the brain. These circuits are late maturing and need a lot of

refinement as they become responsible for "higher-order" functions, such as paying attention, becoming "motivated," and reflecting on ethical questions.

Physical experience helps integrate the emotional and executive circuitry. Children need a multisensory, enriched environment; computers can be part of that, but they may develop only one area of the brain. In a culture characterized by computerized discourses, there is an underestimation of the importance of social and emotional skills. Goleman (cited in Healey 1998, 174) suggests that these skills are much better predictors of success than so-called mental ability or IQ. The gamelike format of computer tutors has increased student motivation. Motivation is an essential part of schooling. But Scott contends that there is a trade-off involved in much computer-use, that greater motivation is accompanied by a narrower definition of the task (1999, 62). Students are spending more time on task, but each task is likely to be more highly specified, and in a more closely defined domain, due to its computerization. This can be seen in the physically oriented arcade game, where one's motor skills are devoted to the task of "zapping" some enemy and avoiding being zapped. It can be see in the drill-and-practice programs, which increase students' motivation by rapid feedback and some reward system, over a very tightly specified, multiple choice but not open-choice domain. In this choice-bound and rule-bound system, they are more likely to achieve engagement and flow than in the more challenging environment of the teacher-mediated classroom.[12]

[12] Mihaly Csikszentmihalyi originated the concept of "flow." This is a state of consciousness that focuses both energy and creative ability when people are involved in a difficult challenge. When asked if he considered computers an enhancement or impediment to creativity and flow in youngsters, he agreed that computers are useful devices and can induce a state of pleasure. However, he remained unconvinced that

Postman provides a fitting end to this critique of computers as individual tutors. He contends that it "won't do for children to learn in settings of their own choosing." School age children must be taught appropriate social skills. This requires extensive exposure to other human beings, not other machines. Learning in "computer as tutor" settings works against the making of civilized people; people who must acknowledge rules like raising their hands, not chewing gum, and exhibiting patience toward slower learners (1995, 381).

4.4 Metaphor Three: Computers as Class Equalizers

It will be recalled that this metaphor of computers constructs them as unbiased and equally beneficial to anyone who uses them. Computers cannot make any distinctions between race, gender, and class. This quality of "treating everyone the same" is misleading. A computer's inability to detect the socio-economic status and intellectual capital of its user does not erase the fact that people occupy different social positions in society. Provincial educational policy, however, attempts to address the diversity in the socio-economic status and intellectual capital levels of its population. But as seen in policy, government is having a difficult time dealing with the delicate issue of equitable opportunities and eventually abandons educational equity as a policy issue altogether.

Evidence of the delicate nature of "equitable opportunities" is seen in the different manner in which these opportunities are written about from year to year in the *Meeting the Challenge* series. In *Meeting the Challenge II*, government pays lip service to leveling

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this relatively shallow form of pleasure contributes positively to creative development (cited in Healey

the educational playing field as in its policy statements: "The efforts of the entire education system will focus on providing all students with equitable opportunities, regardless of their family income, where they live in Alberta, or whether they have special needs" (1995, 3). This statement is a paragraph unto itself in a text entitled "A Foundation for Our Children's Future." It appears on page three of the document. *Meeting the Challenge III* contains the same text and title but is buried a little deeper in the document. These assertions about equity are found on page eight. As well, the act of "providing equitable educational opportunities for students" is noted in the "challenges" section of the business plan (ii). Whereas in the *Meeting the Challenge II*, provisions for equity did not seem so difficult a task. Providing equitable educational opportunities is not included as an item in the issues and challenges section of this document (5).

While provincial policy does address the provision of services for students with special needs, its position in the list of goals in the documents and the number of strategies in place to achieve the goal indicate the low priority the government places on students who occupy disadvantaged class positions.[13] This is goal number three in a list of nine. It is flanked by goal two, that which promises to give parents "greater opportunity to select schools and programs of their choice and enable greater parent/community involvement in education" (*Meeting the Challenge II* 1995, 5). Goal

1998, 166).

[13] Alberta Education (1995) Meeting the Challenge: Three-year Business Plan (Edmonton, AB: Available from Alberta Education, Curriculum Standards Branch. 5. See also the other two policy documents in the Meeting the Challenge series: 1994/1995-1996/1997, 11 and 1997/1998-1999/2000,

four promises to "improve teaching."[14] In all *Meeting the Challenge* policy documents, goal three has the fewest number of strategies attached to it as compared to the other eight goals. The class, with the greatest number of advantages seen in domestic stability and adequate, if not abundant, financial resources that is privileged in society is also privileged in policy.

I suggest that the identification of educational opportunities as a challenge in *Meeting the Challenge III* and the relatively low number of strategies for addressing special needs, speak to the difficulty of educating all students well when government is focussing on cost-savings. It seems, however, that the difficulties have disappeared or that the government is diverting its gaze elsewhere. A change in the document format seen in *Meeting the Challenge IV* suggests that the policy focus is shifting from what the government has yet to tackle to what the government has accomplished. Other than the title, there is no mention of a challenge in any area of policy. The task laid out in this document is on improving what has already been established. Four key areas needing improvement are: high school completion rates, secondary student achievement in math, student access to information technology, and co-ordination of services for children (1997, 1-3). The area of equitable educational opportunities is not noted. Either this challenge has been satisfactorily addressed or has decreased in priority. I suggest it is the latter since the main thrust of *Meeting the Challenge IV* is on technology integration and

[14] It is interesting to see the different ways this goal is stated in the *Meeting the Challenge* documents. In I and II it is simply stated as "improve teaching" whereas in IV this goal is "teaching in Alberta consistently is of high quality. It appears that the discourse on teachers has shifted from needing to upgrade teachers to maintaining the high standard that is taken for granted.

on partnerships.[15] Government has diverted its gaze to an area where it has more control and where the results can be more easily be achieved and measured. As the following section demonstrates, students come to schools with varying abilities based on their intellectual capital. The Alberta government, despite its best stated intentions, wields very little influence on the achievement of its student.

Not all students come to school with equitable intellectual capital, which as research suggests, is more influential in determining levels of educational attainment, and, in turn, success in the marketplace. Socio-economic status, above all else, is the main predictor of intellectual capital. While it is misleading to homogenize all poor students by condemning them to school failure, research suggests that financial stability is an important agent in the transmission of intellectual capital and success in school. (De Broucker & Lavallee, 1998). Intellectual capital refers to two areas. First, it refers to the family members' achievements at school and work. Second, it accounts for parental contributions in the form of attitudes, expectations, encouragement, and opportunities to learn. Also, data from De Broucker's and Lavallee's work suggest that the socio-economic status of the father's occupation is associated with the children's educational attainment. Whatever their own education, fathers in higher status occupations were more likely to have children with more advanced education.

The real techno-gap, like the real equity gap, is moving towards poverty. More than half of Canadian families with an income of $70,000 own home computers,

[15] In the" message from the minister" portion of the document, then minister of education, Gary Mar writes "government has identified the integration of technology in education as a new goal." Furthermore, Mar

compared with just eleven per cent of those whose income falls below $15,000. Full access to the "information highway" does not come without a sizeable price tag and, the number of families who cannot afford this price is increasing. Since 1980 there has been an overall increase in the percentage of children 15 years of age and under in low-income families. Nearly 1.4 million children in Canada were living in low-income families in 1996. In Alberta, 18 per cent of the province's children come from low-income families. The proportion of children living in low-income situations in the 1980s closely followed the business cycle. It increased during and just after the recession of 1981-82, and fell in the period of growth in the last half of the 1980s. However, a different pattern has emerged in the 1990s. The proportion of children living in low-income families increased during the recession of the early 1990s, but did not decrease during the recovery (*Education Indicators in Canada 1999*, 19). If success in school is largely determined by socio-economic status, then an ever-increasing proportion of students is heading towards a bleak academic and by extension, financial future. Policy directions are moving away from equitable opportunities for disadvantaged students and towards serving those who are already graced by socio-economic privilege.

The research above suggests that success in school has more to do with the socioeconomic status of the family with a particular emphasis on the status of the father's job. Attempts by computer corporations have been made to show that unlimited access to technology would yield improvements in educational attainment. It will be recalled that

states "A major asset to education is partnerships. I look forward to achieving the goals we have set by continuing to work with our partners."

the Apple Classrooms of Tomorrow (ACOT) project that saturated students and teachers with computers did little to improve student achievement. The fact that a computer is available both at home and at school does not change the amount or transmission of intellectual capital in that particular family. The ACOT study uses this "diversity" as a reason to be skeptical about the less than glowing findings on technological immersion and that "any conclusions from [these findings] about the effects of ACOT on students and other outcomes would be premature." It is puzzling as to how the Apple scientists will treat this "diversity" in upcoming reports. It is unlikely that this diversity will disappear and, as the report itself implies, the ubiquity of the technology did not seem to level the playing field. Rather than acknowledging that technological integration might not be the panacea Apple claims it is, Apple researchers blame the test when the results are disappointing.

Considering the low priority the Alberta government places on children with special needs, the high proportion of low-income children in Alberta and the results of the ACOT study indicating that computer saturation does not improve school performance, students of disadvantaged class positions might not be benefiting from the policy directions that the provincial government is taking. The research contradicts the claims of the policy for the marginalized class. Indeed, the policy does not make much room for the existence of such a class. While it is uncertain to know without more research, such glowing claims made about equitable educational opportunities should be limited to healthy suspicion.

4.5 Metaphor Four: Computers as Builders of Global Communities

Robertson suggests that the recent "redefinition" of equity is simply the manner in which technocrats push the computerization of education. Equity-friendly rhetoric for promoting technology is politically convenient because it is so easily digested by the electorate. Techno-marketing is disguised as philanthropy. No longer a function of race, gender, class or hemisphere, equity has been redefined as equal access to technology (1998, 190). Students are not longer thought of as the haves and have-nots, but as the information-rich and information-poor. This construct of students is plainly stated in educational policy.[16] Championing educational equity does more than just rob the Left of its traditional arguments and its political clout. It makes good market sense to "put more computers in classrooms" because it is more lucrative than installing one per class. Technomarketers cannot increase profits by selling information technology only to wealthy schools. There are simply too many poor kids in poor schools in the richest nations on the earth to be ignored by computer companies.

Money, gender, and race, the regularities which most often act as barriers to mobility, are ironically, also barriers in the case where computers are used to facilitate populism and global understanding. It will be recalled from chapter three that ICONS was a collaborative computer simulation program that attempted to cross socio-economic and cultural barriers. Starkey (1998, 182) admits that the ICONS project helps many students from a variety of backgrounds *when* the technology is accessible across income,

[16] An example of such a construct is found in *Framework for Enhancing Business Involvement in Education,* 1997, p. 9. "That business/employers be involved in educational policy development by

gender, and ethnic divides. Projects such as these take on an importance because they are serving the unfortunate. They enter the gaze of the state, the media and the academic volumes because they provide a departure from what is normally the fate of the marginalized. Their marginalization becomes the focal point, not project that is there to serve them. Computer skills they have but they remain in their social position. They are reliant upon the philanthropy of individuals like Starkey and Stone. And these individuals are reliant upon the goodwill of foundations like, in the case of Playing to Win, Inc., the Ford Foundation.

More significantly, Stone (1998, 176) contends that in seeking project-based funding, the objective is to find an area of common agreement between the funder's agenda and that of the project's. An analysis of a partnership between Stone's organization and a large computer company reveals an imbalance in the relationship, with the corporation netting the difference. Stone suggests that the *best* of cases calls for a re-examination of the services already provided and a repackaging of a subset of these (perhaps adding a product such as a manual). It would be interesting to know what Stone considers as the *worst* of such cases because it might reveal three things about the equity-gap between the information-rich and the information-poor. First, it might indicate the influence the corporation wields in determining the size of the grant; second, the nature of the project; and third, if the teachers benefit from their efforts. The following example

helping educational institutions understand the nature of the desired employability skills in the short and long term, including those skills required for effective use of information technology."

describes the third characteristic of what I consider a worst case scenario with respect to the equity-gap.

Stone uses a particularly successful example from Playing to Win's roster of project-based grants. NYNEX provided grant money to develop a national test for the Harlem Center's approach to using technology for literacy learning. (Does "literacy learning" mean reading?) The result was a commercially successful text, *Keystrokes to Literacy,* which brings in quarterly royalties. NYNEX's corporate image benefitted as a result of its contribution to literacy learning across the country. Stone does not mention who was involved in its production. What she does state is that the teachers who work at her centers "will work for the pittance you offer." It would not be unreasonable to suggest that these poorly paid teachers were instrumental in producing this book. Stone also does not mention whether the Harlem Center staff received any royalties. Thus, a large corporation, an entity with deep pockets benefitted monetarily and image-wise by harnessing the efforts of a grass-roots organization. The equity-gap persists. This equity gap persists because information is seen as a source of massive profit and whenever basic items become commercially established, divisions are created in your society because not everyone is able to pay (Shaker 1998, 10). Indeed, Starkey (1998, 178), despite her efforts with ICONS, suggests that "any educational tool that requires its users to have certain hardware is, by nature, exclusionary."

The preceding sections have empirically refuted four metaphors used to justify computers in schools. The critique of each of the common sense metaphors of computers is grounded in the resistance to the commercialization of schools. The critique identifies

the struggle between visions for education. The current vision consists of the market-model taking precedence which bodes ill for the other vision, the one embracing democracy. A tightened relationship between schools and businesses becomes problematic because the policies, as shown in the refutations to the metaphors above, place corporations in positions of power over institutions which should be universal and democratic. As Molnar (2000) claims, the market will provide only for those who provide for the market.[17] As shown above, those who can provide for the market are already graced by intellectual capital and stable socio-economic status. If the "free market" philosophy is extended, and all schools are encouraged to enter the marketplace of corporate partners schools would be forced to "compete" for partners. There are many more schools than partners which would require the law of the market to come into effect (Shaker 1998, 19). This inevitably sets up the dichotomy of "winners" and "losers."

Furthermore, whatever metaphor or combination thereof is put forth to justify it, the integration of technology at the school level is confusing and seeming without direction or purpose. Robertson offers a brief chronology of the archetypal story of the endless cycle of edu-tech hype and disappointment. In 1983, teachers were told to teach students to program in BASIC because it was the language that came with their computer. Teachers were told to switch to LOGO in 1984 in order to teach higher order thinking skills. In 1986, they were told to focus on computer-based drill and practice that would individualize instruction and improve test scores. After a few more incarnations,

[17] Lecture presented on March 2, 2000, Greater Edmonton Teachers' Convention, *Public Education, Democracy and the Danger of Market-Based School Reform.*

the latest fad in computer integration is the push to get students on the information highway so they could be part of the "real world" (1998, 129). Also, recent literature on technology for education often uses numerous broad categorical terms somewhat indiscriminately and interchangeably. Some of these terms are: educational media, communcation technology, information technology, and educational or instructional technology. Three different uses of the term technology: tools, including hardware, software, and systems or networks that are used in teaching and learning, but which are merely instruments void of substance; know-how, including methods and procedures that are used in teaching and learning processes; and/or "intelligent tools", with knowledge components that provide interactive instruction without external intervention (Sell 1997, 6). Molnar sums up this erratic direction of edu-tech hype and fuzzy labeling when he states, "We started computer literacy in 1972. Nobody knows can define it...It was a broad enough term you could get all these programs together under one roof..."(cited in Robertson 1998, 129).

The Alberta government calls its technology program of studies Information and Communication Technology (ICT): An Interim Program of Studies, 1998. The program includes a whole range of technical outcomes, including computer literacy, although the term "computer literacy" does not appear in the document. For the purposes of this study, I will distinguish between computer literacy and the outcomes outlined in the government curriculum document. According to the document, the program is to ensure that students have knowledge and skills that will serve them at entry-level work, for

further study and for lifelong learning (2). The policy attempts to depart from the confusion endemic in earlier initiatives in computer-assisted instruction. It attempts to clear up the confusion by specifying which technologies, such as video cassette recorders, video cameras, and digital devices, are to be used in schools. The policy also insists on the "embedding" of technologies with other curricula to provide context (1998, 3).

Computer literacy, on the other hand, is more concerned with the operations of just the computer, per se. It treats the computer as the object studied. The computer itself is the content of the course while the approach to computer studies, according to the Alberta government, considers the computer, as well as other technologies, as tools to be used in context. Thus, the essential difference between computer literacy and ICT is the number of technologies considered, with ICT dealing with more than just the computer. Also, another difference between ICT and computer literacy deals with the way the computer is considered. Computer literacy considers the computer as the topic of study while ICT treats it, along with other technologies, as a tool. Technology is the means, not the end.

4.7 Summary

I have identified four commonly held metaphors on educational computing. The first metaphor, computers as job skills, is refuted on the basis that assumptions about the quality of jobs available in computing may be erroneous. Claims that jobs will require high skills and will be well-remunerated were found to be doubtful considering that most jobs would be characterized by a down-grading of skills. Thus, a proliferation of high

tech industries may reduce instead of increase skill requirements. It was also found that those employees who do possess advanced skills are often not using those skills in their positions. Furthermore, it is doubtful whether schools would have the resources to keep up with the constant redefinition of jobs, skills, and technologies in the labour market. Even if schools were able to keep pace with these changes, it is often difficult to predict what jobs to prepare students for since considerable changes occur in personal aptitudes, labour markets, and employment needs over the period of twelve to thirteen years it takes an individual to complete a basic education.

The second metaphor, computers as individual tutors carries with it some doubtful assumptions. First, it assumes that computers have the capacity to make children learn something that they otherwise would not have in the classroom. Second, the metaphor works against the assumption that people should be patient, considerate, and accepting of others. Third, the metaphor assumes that providing information is the same as providing knowledge. Along with this erroneous assumption, solitary time spent in front of a computer may in fact be detrimental to brain development as well as overall student development. Furthermore, computers as tutors do not possess the ability, as human teachers do, to require students to use higher order thinking skills to develop concepts. As well, providing information does not readily accommodate learning objectives which focus on ethical values.

The critique of the third metaphor, computers as class equalizers, is refuted on the basis that socio-economic status and intellectual capital levels are more influential in determining academic and financial success than exposure to computers. Thus, social

mobility is more a function of family background than innovative computer studies like the Apple Classrooms of Tomorrow project. Policy directions by the Alberta government and the Conference Board of Canada place little priority on the poorer student even though these students have more difficulty with behavioral disorders and are less likely to perform well in school.

Computers as builders of community is a distorted metaphor for justifying computer use in the schools. Its distortion derives from the appearance that there is a balance of power between corporations which provide computers and smaller organizations which accept this provision. Research suggests that corporations wield disproportionate influence in relationships where they pose as philanthropists. While it may appear that computers are being used to enhance populism and global understanding, corporate philanthropy is techno-marketing.

These metaphors used to justify computing in tax-funded schools present a common learner. An exemplification of this is Easton's (1999) counter-metaphor of the perpetual learner. This metaphor embodies the key assumptions, values, and characteristics of the ideal learner, teacher, and (l)earning process as seen through policy. It identifies the learner as continuously and autonomously seeking increased skill sets. The teacher is seen as a facilitator as well as a participant in this process. By definition of the perpetual learner, learning is never ending and entails continuous improvement. The metaphor also suggests that a reason for the push for computer integration may be to find a demand for the oversupply of information. Policy discourse attempts to solve social problems posed by this oversupply of information with the use of rhetoric such *as*

"information-society" or *"knowledge-based economy."*

References to society in policy documents inevitably include terms such *as information-society* or *knowledge-based economy*. Policy documents using these terms assume certain cultural values necessary for full participation in the information society or the knowledge-based economy. *Matching Education to the Needs of Society* is a Conference Board of Canada document replete with values that support the knowledge-economy construct. Flexibility, self-reliance, and entrepreneurship are values that imbue the discourses on educational change. For example, this document asserts that "Canada needs a new system of lifelong learning that will match the evolving needs of Canadian society." Alberta Education documents are also heavily influenced by this ideology of continuous upgrading in response to change. Alberta Education policy documents act as transmission belts and reiterate this discourse in their pages: "Keeping the curriculum current is therefore an essential aspect of preparing students for the world of work, post-secondary studies, lifelong learning and citizenship in a complex world (*Information and Communication Technology: An Interim Program of Studies Kindergarten to Grade 12*, 1998, 2). Furthermore, students will "be able to solve problems, to cope with uncertainty, and to find opportunities in change" (*Meeting the Challenge III* 1997, 8). The ideology which promotes reduced government funding while, at the same time, pushes government surveillance and computer integration gives rise to and provides the dominant discourse.

In conclusion, the counter-metaphor of the perpetual learner exposes values promoted by computer integration discourses. This metaphor is necessary for the

promotion of flexibility, entrepreneurship, and consumerism. The perpetual learner is constantly upgrading skill sets like ever-changing computer software. "Life-long learning" is the policy's answer to this perpetual search for information, or, as Easton contends, the perpetual search for goods. The glut of information requires a willing market like the perpetual (l)earner. In the next chapter, I link this metaphor of the perpetual learner to the social regularities that set down conditions for policy problems. These problems are met by policy solutions, according to the discourse. Chapter five considers the social regularities that constitute what becomes visible as a social problem. The chapter also suggests that, unless an individual conforms to the regularities, like the perpetual learner does, policy has little to offer.

Chapter 5 - Arena II Social Regularities

5.0 Arena II – A definition

Arena II in Scheurich's model focuses on the network of social regularities across educational and social problems. This network comprises descriptors such as class, race, age, gender, socio-economic status and is a kind of grammar or economy similar to Foucault's "complex group of relations." This network is referred to by Scheurich as a grid of social regularities that constitutes what becomes socially visible as a social problem and what becomes socially visible as a range of credible policy solutions. Social regularities are "rules of formation" and they are the manner in which scientists and theorists define their objects, form their concepts, and build their theories. Scheurich argues that widely different social and education problems and policy solutions are constituted by the same grid of social regularities and that policy archaeology can identify these regularities. He makes four additional points about this second arena of policy archaeology:

> 1. Regularities are not intentional. No particular group or individual consciously created them Individuals or groups may benefit from them, however.
>
> 2. Social regularities are not a kind of deterministic mechanism. They do not determine social problems or policy solutions as if from the outside or as if the regularities are an outside force. They are constitutive of social problems and of policy solutions.
>
> 3. Social regularities are historical. They change and shift and new ones emerge. This poststructuralist approach assumes that the regularities that are being identified are not the same throughout all time or all societies. All social regularities are particular to particular time periods within individual societies. Policy archaeology, as a method for identifying social regularities, is itself emergent within a particular historical period; consequently, historical changes may lead to a decline and disappearance of policy archaeology as a methodology.
>
> 4. A poststructuralist approach moves somewhat, though not entirely, against the notion of depth and "deep structures." Poststructuralists posit that "deep structural phenomena" and "surface phenomena" both occur at the level of daily human micro-practices. But the contention that everything happens at the "surface," within human

actions, does not require the assumption that these social agents are self-consciously aware of the social regularities shaping their subjectivities and their practices.

5.1 Organization of the Chapter

This chapter identifies the social regularities which constitute the problem and which constrain the choice of policy "solutions" or treatments. It is organized around four regularities which constitute the problem of the inadequacy of schooling to prepare students for the work-world. The four regularities are: governmentality, professionalization, choice, and class.

I chose these regularities because of their role in preventing me from getting the message across to my students. These regularities became apparent as I struggled to teach and reach those disadvantaged students I described in chapter one. The four regularities listed above obstructed my goal of turning the students into book lovers. The first regularity, governmentality was manifest in the importance the administration placed on achievement test results. Governmentality is represented by the increasing surveillance, through achievement testing, professional growth plans and other forms of accountability. The second regularity, professionalization, kept my students at arms length because they knew and (much later), I knew that I was subjecting them to a treatment. I thought, erroneously, that my expertise could somehow save some of them from their fates. The third regularity, choice, emerges from the increasing number of options that the government is presenting to families about education and its delivery. The students I have taught are not benefiting from the increased the level of choice because their disadvantaged class position does not allow for choice. Lastly, the fourth regularity, class, became a barrier because my students and their families did not have the

intellectual capital or the socio-economic status to relate to the content I taught and manner in which I taught it.

Each subsection begins with examples from government policy documents. I then use the policy from the Alberta Teachers' Association (ATA) as a counterpoint to government policy as it often provides a critique of the government's motives for implementing technological integration. I also use the Conference Board of Canada's documents as another text to provide evidence for the increasing corporate discourse permeating provincial educational policy.

5.2 Governmentality

Goals for Alberta's Education System

> Education's mandate is to ensure that students have the opportunity to acquire the knowledge, skills and attitudes they need to become self-reliant, responsible, caring and contributing members of society. The eight goals in this three-year plan help to fulfill mandate by outlining directions for enhancing student learning in goal one and for enhancing supporting elements of the education system in the other goals. Identified for each goal are *the results to be achieved, performance measures to be used to assess and report on progress, and the strategies that will be pursued to achieve the goals. School boards include designated provincial goals, results and measures, and develop strategies to address these in their three-year plans* [emphasis mine] (*Meeting the Challenge IV*, 1997 2).

Accountability Cycle

> "The Accountability Cycle for Alberta's education system is a key mechanism for carrying out the provincial responsibility for education. The provincial government and school authorities establish *directions and budgets, implement plans* and *assess progress* in order to *make continuous improvements* and *report publicly on results* [emphasis mine] *(Meeting the Challenge IV,* 1997, 2).

5.21 Governmentality: A Definition and Application to Alberta Government Policy

Governmentality is a Foucauldian term used to denote the emergence of a kind governance mentality that expands its reach into all aspects of the lives of its citizens; it is

the kind of governance that counts, describes, defines, that brings everything under its gaze (Scheurich 1996, 306). It equates the well-being, happiness or productiveness of individuals with behaviors that reinforce the social order. Though individual government agents apply this mentality to their areas of responsibility, they do not have bad intentions. They are inscripted by and, in turn, inscript governmentality. It is a type of social control where the subjects, in this case citizens of Alberta, internalize and use the discourse promoted by the government as if it were their own discourse. Its success is evident in the internalization of the discourse. This control of consciousness via the control of discourse is a vast generalized case of interiorized surveillance.

Surveillance or panopticism is a seminal concept for understanding the relationship of communications procedures to social control. It is too expensive and complex for a government to maintain control over its citizens through external, physical pressure. Panoptic discursive control has three advantages: (1) it allocates power at very low cost; (2) it provides for maximum breadth of social control, especially since discourse is mass-diffused; (3) the output of discursive formations may be directly linked to the economic growth of power (Finlay 1987, 178).

In the push to wire schools, government is extending it gaze into the lives of its citizenry to the point where it produces a curriculum on how the use of technology is to be taught. Assuming that the gaze is ever-increasing, it can be argued that the government uses achievement tests and professional growth plans to keep an eye on students and on teachers. Indeed, as mentioned in my introduction, the topic of the 1999 Grade Nine Language Arts achievement tests was technology. The Progressive

Conservative government of Alberta is not content to simply observe, define, and account for the lives of its citizens. The government also seeks a response from the citizens on how they interpret the technological discourse prevalent in their lives. Such procedures of using achievement tests characterize both discourses on and of new communications technology. Technology as a topic on standardized tests leads to the internalization in the "information society." Users of new communications technology, in this case students, have become principal operators of their own subjection. The Foucauldian concepts of surveillance and discursive shift emerge as outstanding features of the analysis. Observatories of human action, in this case, are mandated by the provincial government and are meant to watch teachers in Alberta. This surveillance takes many forms. Teachers are required to submit professional growth plans, enter their grades in centralized databases, and prepare students to perform on standardized tests. Teachers are being watched and are participants in this type of observation. They tailor their practice to become how they know they should be perceived. A mechanism that coerces by means of observation is a part of the experience of teaching in Alberta in the late 1990s.

5.22 Surveillance: A Personal Testimonial

The students at the second school I taught at came from meager socio-economic backgrounds. Most did not speak English at home. They were at a definite disadvantage

when they wrote the 1999 Grade Nine Language Arts achievement test.[18] Their level of intellectual capital prompted me to think of ways to improve their chances for success on this test. I decided to spend the month before they were to complete the part A portion (the written portion) by reviewing past exams. We considered past topics for the narrative or essay. While I did teach them the essentials of a narrative, I advised them not to choose this form of writing for their actual test as it more difficult to organize a narrative than it is an essay. An essay, as I taught it, was composed of five paragraphs. The introductory paragraph contained a thesis statement. The thesis statement contained three points that the students were trying to prove. Each of the points were developed in the three body paragraphs and the final, fifth paragraph provided a summary of the points discussed. This formulaic method proved successful in past years. I recall my principal congratulating me for increasing student achievement on the written portion by 22%. I thought, "Why mess with a good thing?" So I carried on with hopes of even greater gains in student performance.

Students had to complete two pieces of writing. For the longer piece, students had a choice between an essay and a narrative. Their topic: Write a narrative or essay about the effects of technology on people. You may write about yourself or other people, real or fictional. You may set your writing in the past, present, or future. While the assignment allowed students to consider any time-period for their writing, it is rather telling that most of the supplementary material the test provided is akin to "futuristic"

[18] Not all grade nine Alberta students wrote the language arts achievement test. Of a total of 43 523 students, 39 026 wrote both parts of the test, 1 704 were absent, 1 807 were excused, 2 students' exams

time periods: A graphic depicted a Star Wars inspired landing pad, two cartoons dealt with computer games and a pager, respectively, a poem and a stylized newspaper discussed the computer. It seems that the supplementary material, whose function it was to assist students with their writing, was limiting their settings to the present and the future.

Teachers consider themselves responsible for the responses of their students. I know that I took considerable interest in not only the style of my students' writing, but also its substance. I recall that sense of dread, "What if one of my students criticized the fact that I conducted relatively few classes in the PowerMac lab?" While I admit that I am rather sensitive when it comes to my students' impression of my teaching style and I also accept that I sound rather paranoid about the importance that may or may not be attributed to the students' responses, I also know that this test topic made me feel observed. It shaped my lessons. I was self-critical and the surveillance affected how I will teach in the future. Guilt motivated my reflection on what I taught and how I taught. Considering the future is an example of striving for "piety in one's every thought and act" (Finlay 1987, 177).

Foucault's idea of the discursive shifts necessary for the rise of modern psychiatric institutions are helpful in discussing how I, like an inmate in a modern psychiatric institution, accept the socially normative verbal and behavioral rules of discourse (Collins 1993, 254). No government official chastised me for the way I taught

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were withheld and 984 wrote only one part (Analytic Services, Learner Assessment Branch, Alberta Learning).

language arts. No coercion is necessary when the discourse of technological integration alone motivates pedagogical self-critique.

This analysis, however, assumes that all teachers submit willingly to the imperatives of government. Indeed, not all teachers are as acquiescent and self-doubting. In fact, for the 1999 achievement test, several schools either refused to write the tests or to submit the results. This "disobedience" illustrates that resistance, intentional and willed action in defiance of authority, does exist among teachers.

However, government policy still stresses the collection, analysis, and reporting of student achievement results so that the "results, measures and department strategies" will be fulfilled (*Meeting the Challenge* 1994, 3). The manner in which a teacher sees herself, in my case particularly, is shaped by the impetus for data collection on student work. It becomes the teacher's job to ensure that the students perform well on the tests, not so much for the students sake, but for the teachers'. That is the function of the accountability cycle. It is a form of panopticism in that it controls my work without any physical coercion. I have accepted the procedures of discourse as a controlled subject. No one need watch over me to ensure their socio-political goal is being achieved, I am doing it myself by not only submitting the results to Alberta Education, but also by using class time to prepare my students so that the "results are achieved" (ibid).

5.3 Professionalization

> Business will be a key player in defining the specific learning requirements of industry. Schools and teachers are encouraged to take advantage of different delivery options, such as distance education and workplace learning. Schools may use any instructional technique acceptable to the community **so long as the results are achieved** [emphasis in document]. Senior high school students will be able to learn employability skills in the workplace. The

> school will provide support to ensure a broad theoretical understanding for those specific skills. The province will provide high school credit for workplace learning that is certified by school and by the employer. This will ensure students have the skills demanded by business and gain recognized work experience to assist in making the transition from school to work.
> (*Meeting the Challenge: Three Year Business Plan, 1994, 6)*

The above text asserts along which lines schools should be restructured. The identification of business as a "key player" to identify learning requirements of industry positions business as an influential force in determining what is to be taught. As well, business becomes a place where learning takes place as evidenced by the impetus to "take advantage of different options, such as distance education and workplace learning (6)." High schools are slowly becoming erased as sites of learning. If we accept that there is only so much that can be taught throughout the course of a day, I suggest that less business-like disciplines will be subordinate to the likes of web-design, accounting, and marketing.

The *Interim Position Paper on Technology and Education,* a document from the ATA, takes the above corporate discourse to task. This document lists the four broad purposes for education namely: the socialization of children to become caring and responsible citizens in a democratic society, the development of personal knowledge, skills and attributes as preparation for their future role in society, the establishment of a foundation of knowledge, dispositions and skills to be lifelong learners, and the preparation of students to succeed in a changing world. The document contends that the "commitment to these goals seems uncertain at the present time" since the possibility exists that "this new discourse of corporatism" could bring about "the exploitation of education as a vast potential market" (1999, 52). In response to the government's policy

to encourage schools and teachers to take advantage of distance education and workplace learning, the ATA is concerned that this embrace of different delivery options is more for monetary and public relations reasons without consideration of the educational repercussions (55). The ATA acknowledges that due to the current push for school choice in education, technology is being used to offer marketplace alternatives to traditional schooling through virtual schools, distance education, video-conferencing and other forms of on-line education.

The ATA's concern with the application of technology lies with the inattention paid to the preparation of teachers for the major changes that characterize schooling. The ATA contends that to be effective, "the integration of technology must reflect the context of classroom teaching (56)." Professional development must be "ongoing, and in addition to workshop sessions, must provide access to mentoring and consultative support, and time to become familiar with available software, design lessons, and discuss technology use with other professionals (55)." If technological integration is limited to "skills training," it cannot help teachers to construct meaningful learning experiences that are "integrated into curriculum (55)." Indeed, the sections on professional development in the government documents, write about "updating teacher preparation" and establishing "competencies" as though teachers' preparedness for the workplace is not adequate for the new construct of school as work training site (*Meeting the Challenge* 1994, 4). Furthermore, professional development must "focus" on the competencies needed to help students learn.

The difference in language concerning professional development points to the different construction of a teacher's purpose in the schools. The language in government policy does two things. It constructs teachers as deficient while simultaneously limiting the content and the duration of their professional development. Thus, if teachers are inefficient to begin with and the government is doing little to remedy that, it could be suggested that the government may wish to do away with the teaching "profession" altogether. This policy is most likely a result of the importance that "Albertans" placed on teacher preparation. Albertans were asked to rank the following areas in the order that the elements influencing technology integration should be addressed: Network Infrastructure, Curriculum Development, Hardware/Software, Policy Direction, Teacher Preparation. The rankings were on a scale of 1-5. Teacher preparation was ranked last, scoring a 2.28 ranking. Network Infrastructure and Curriculum Development were in the top two, scoring 3.61 and 2.67 respectively, while Hardware/Software and Policy Direction took third and fourth place, respectively (*Framework for Technology Integration in Education* 1996, 5). The "vertical" workforce, teachers, are not considered key to any change to the system. It is politically and economically convenient that the most expensive, labour-intensive and time- consuming portion of restructuring, professional development for teachers is last on a list of citizen's priorities. Expense, labour intensity, and time consumption are detested words in the corporate, market-minded and professionalized discourse of the Alberta government.

The use of the word "focus" brings to mind a narrow, concentrated approach to professional development. While the ATA considers professional development as "on-

going and consultative (55)," the government sees it as a "just-in-time" type of training. Easton's metaphor of the perpetual learner finds an echo in this construct of professional development (1999, 23). It is not just the students who are being groomed for the new "workplace utopia" where "hierarchy is dead and 'partners' engage in meaningful work amidst a collaborative environment of mutual commitment and trust" (cited in Easton 1999, 24). Teachers also are to succumb to the "new work order" by virtue of participating in a "skills module" model of training.

Educational restructuring is inevitably changing teachers' work. The regularities of governmentality and professionalization dealt primarily with their effect on teachers' work. Restructuring also has its effects on students and their families. The next two regularities are more concerned with the effect this restructuring has on these two groups.

5.4 Choice

Open boundaries within and between school jurisdictions. Pilot charter schools (*Meeting the Challenge* 1994, 2).

It is important to point out that the increased emphasis on parental choice in policy documents may not necessarily translate into a widening of choice for all parents in the area. The logic that the Alberta government, specifically, uses to justify policy changes in school boundaries still privileges the privileged and maintains existing class distinctions. If that is the case, then the prosperity for Alberta's disadvantaged classes may remain elusive as ever, if not more so. Research from Britain and from Alberta points to the trend that by increasing parent choice, certain schools become marginalized

while others become valorized. Competition between schools has created another monster: polarization of desirability.

Research from a British study (Power et al., 1994) on grant maintained versus local education authority schools reveals that parental choice may not necessarily segregate entirely along class lines, but segregation occurs none the less. Furthermore, the study indicates that the claims for a "new" kind of schooling are not borne out by the experience of the parents. The study indicates that nearly all the parents, irrespective of the kind of school their children attended, made their decision largely on the basis of locally constructed accounts of "reputation" and atmosphere."[19] The desirability of a school appears to be founded less on the school's new status, but rather more on the preservation and continuity of its recent past.

This polarisation of desirability is also seen in Alberta. Educational opportunities, which according to the policy literature should be available to "all students" are difficult to find when certain schools, as seen in the research done in Britain, acquire a certain "reputation." Evans (1999, 159) shows that the point about increasing parent choice, as in the British research discussed above, does not translate into improved opportunity for all. Evans provides an explanation on how this "reputation" is acquired as a result of increased choice in Alberta high schools. The Edmonton Catholic School Board, faced with declining enrollment at inner-city St. Joseph Catholic High School, decided to change the programs offered at the school by turning it into a self-paced learning centre.

[19] The case study revealed that popular LEA (Local Education Authority) schools were able to attract parents whose socio-economic status is as high, if not higher than neighbouring GM (Grant Maintained)

The school's alternative program will not be suitable for all students registered at that school or who live in the neighbourhood. These students, according to the principal, can "choose" to transfer out. But this choice is not free. There are costs associated to "choosing" educational programs. One such cost is borne by parents who must pay for transportation-related expenses. Parents who can choose are able to do so because their incomes allow for the incremental costs associated with shopping around for a school.

Another cost is one borne by schools who lose out by experiencing losses in enrollment. Evans (159) suggests that the current trend in positioning and marketing by both Edmonton Catholic and Edmonton Public school boards results in cannibalistic competition. Schools within the same school board are pitted against each other. When parents move children from one school to another, the school that loses enrollment acquires an undesirable "reputation" in the community. Once entrenched, this reputation leads to further enrollment losses. Polarization of desirability rears its head again. The principal and staff typically have great difficulty turning the situation around unless the school itself is chosen as a site for an alternative program. The above analysis suggests that the regularity of choice is not as beneficial to all students, parents, and schools. Why is this so? An analysis of the relationship of class to choice and to educational attainment might offer an explanation.

schools. The study's authors conclude that GM status consolidates existing patterns of choice and may well contribute to a polarization of desirability rather than a more level differentiation of local provision.

5.5 Class

> The *future of our children* and *the future prosperity of Alberta* [emphasis in document] lie in the ability of our students to be successful, productive citizens. To ensure that all of our students have the best advantage possible, Alberta must continually look for new ways to improve student learning (*Framework for Technology Integration in Education* 1996, 3.)

5.51 The Mismatch between Policy Rhetoric and Social Reality

The above sample of provincial educational policy links the children's performance in schools with the economic growth of Alberta. However, the language and pursuant action of the policy are at odds. Prosperity is viewed as increased economic growth. Schools are viewed as sites for producing human resources which will fuel economic growth as schools' curricula are adapted to the "knowledge society." The use of the first person possessive pronoun connotes a sense of uniformity, that Alberta's school children are equal in their opportunity for success. But as parents exercise their right to "choose" their children's education, this equality breaks down along class lines. As schools are increasingly refitted to fit a market model, parents have opportunities to choose programs and schools for their children. Evidence of a discursive shift is seen as education, in this respect, is being transformed from a public good to a private good (Ball 14, 1994). As the line between public and private is being redrawn, students are encouraged to work "at their own pace." The notion of skills being a matter of public policy is eroded. It becomes a matter of private choice. Students can theoretically "personalize" their programs so as to become better prepared for the next tier of education The local provision of educational services is no longer planned in relation to "need" but is left to family choices and management decision making. These are the bases of the "natural" order, the "hidden hand" of market forces. The government

controls education through a system of performance indicators. In one way, these indicators provide the system of information and knowledge that is so important in any market, in allowing consumers to make the best choices. They also orient the provision of education towards certain goals and purposes and create particular patterns of self-interest for schools that systematically disadvantage certain groups of students. The analysis of class uses Marxist and Weberian concepts.

5.52 Class: A Marxist Analysis

A contemporary Marxist analysis begins with the assumption that the working class, while united in the objective sense of being a class-against-capital, is internally fragmented in many ways. It is important not to homogenize the agents under consideration most notably, teachers, students, and business people.[20] Similarly, to treat the ATA as a monolith of resistance to the concerns of the neo-liberal government and its friends in business would also be delusional. High level executives in government, business, and in the ATA sit on committees together as any wide-sweeping policy is hammered out. Students, as well, exert varying levels of agency depending on their race, gender, and class. Lastly, it is incorrect to equate business with badness. Harrison (1999, 41) points to the fact that some members of Alberta's business and political elite, including former Premier Peter Lougheed and Syncrude's Eric Newell, have begun warning of the dangers of deteriorating health and educational systems, and of the

[20] As Repo (1987) points out, people are herded into large work units and increasingly, the majority has "nothing to sell but its labour power" (79). But capitalism also continuously fragments and divides society

growing gap between the haves and the have-nots. The following comments fit snugly with the above considerations:

> As Marx discovered in his deeper analysis, the expansion and movement of capital do not simply unify and massify labor, even in direct relations of production. Rather the working class is continuously recomposed around major internal structurations. These internal divisions—within factories, within industries, between occupations, between sexes and between the employed and the reserve army—ought to be an object of any primary theory of the working class. We need to start, indeed politically and theoretically, not from the assumption of simplification and unity but from that of complexity and division (Repo 1987, 79)

This division can occur any number or combination of lines: occupational, race, ethnicity, gender, or age. There is not one working class subculture, but rather several working class "cultures" frequently in antagonistic relationships with each other.

According to the above theorizing on the working class, language in policy from the provincial governments commits a fundamental error. It assumes "simplification and unity" in its statement concerning advantages for all students. The key assumption at work here is that all students come to school equally prepared to learn. According to policy "the best advantage possible" comes from an incessant search for "new ways to improve student learning." As the following discussion on class demonstrates, advantages for all are not likely to be assured since differences and complexities are more the characteristics of the population, not simplicity and unity.

5.53 Class: A Weberian Analysis

The notion of class distinctions as put forth by Weber is based on three

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and this too has an effect on the consciousness of workers. Not all teachers are in the practice of resistance and those that are act in a myriad of ways with differing levels of influence.

dimensions of inequality. (1) class, (2) power, and (3) prestige (Johnson 1995, 256).[21] Weber used the term "class" to refer to "life chances," or the ability of people to get what they want and need in the marketplace, to buy goods and services, to shield themselves from others, and so on. From this perspective, class position rests on factors such as occupational prestige, education, experience, and skill and intelligence levels as well as inheritance, luck, ambition, and family background.

Assuming the Weberian definition of class distinctions, I offer one case study to illustrate that it is the regularity of class, not the sparkling rhetoric of policy, which determines the success of schools and of students. It will be recalled from the discussion of the regularity of choice that two case studies revealed that parental choice in schooling creates desirable and undesirable schools. This "polarisation of desirability" is based on a school's reputation. Class is also a prominent regularity of the analysis. In the third case study taken up as an example of class, the "computer saturation" in the ACOT project indicates that the extraordinary socio-economic diversity among families plays a larger role in achievement than unlimited access to computers.

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[21] The second dimension of inequality is the distribution of power, especially in relation to complex organizations such as corporations, governments, unions, and other institutions. Weber defines power in terms of *capacity* for willed action within a social context (Finlay 1987, 182). This capacity is legitimated by knowledge and communicational relations rather than constrained by physical force. Control for Weber is the *ability* to impose a certain behavior on others. Applying a theory of power as compulsive to the question of new communications technology could illustrate how this technology operates as a discourse of knowledge and power not only by forbidding certain actions and relationships but also by compelling others. For example, many discourses on new communications technology suggest that consumption is a prized behavior in a new communications society (1987, 184).
The third dimension of inequality is the distribution of prestige. Prestige is a resource whose distribution must be unequal in order for it to exist, since deference must run from higher to lower positions just as honor elevates some above others. Although power, prestige, and wealth often go together, to some degree they vary independently. For example, a leader might rank high on power and prestige but relatively low on wealth, just as wealth does not automatically bring with it power or prestige.

Class seems to be a major determinant in the success or failure of the Apple Classrooms of Tomorrow (ACOT) study. The study examined the effects of computer use on student achievement. Among other disappointing results, after two years of total and unlimited access to technology by carefully selected students, whose parents had chosen the program and whose teachers had unlimited amounts of technical and instructional support, the best that Apple could say about the achievement and attitude of ACOT students was that they had not declined (Robertson 1998, 133). The report did caution that the results may have been due to "research design" problems. But what was most intriguing was the language used to describe the variety of students and the homes that these students came from. The report noted that students and their homes demonstrated "extraordinary diversity."

While government policy pushes for increased parental choice, the social reality of class differences reduce policy to empty rhetoric. Those parents who have the time, the resources, and the power and prestige to get others to do their bidding will carry their children along with them in their class-bound lives. Differences that have existed in school performance are rooted in socio-economic conditions. The policy does little to change that. Indeed, it may very well pave the way to cement class division as parents are given more control over their children's educational lives. The policy only speaks to those who can afford to hear it. The case studies discussed in the section on both choice and class suggest that a school's desirability is based on a "reputation" that a school has. This reputation was built upon a sense of a school's past performance, not its future. This desirability comes about through the social regularity of class.

5.54 Unlimited Access to Technology: Not Necessarily Improving All Children's Achievement

The ACOT study tried to prove that unlimited access to technology would improve educational attainment for all children but, unfortunately for the researchers at Apple, the grid of social regularities proved too imposing an obstacle. Despite the educational fads and vogues, children from families with low socio-economic status do less well in school than children from high socio-economic status families.[22] Recent research suggests that the socioeconomic status of a father's occupation is associated with their children's educational attainment. Whatever their own education, fathers in higher status occupations were more likely to have children with advanced education.

In addition to the presence of a well-positioned father, simple dollars and cents provides yet another obstacle to "connectivity" for all. To be "connected" from home requires a substantial portion of the household budget. A sample monthly bill for a "wired" family is as follows: One hundred dollars for three telephone lines, $120 for internet usage, $50 for a cellular phone, $40 for satellite television and $40 for a cable modem.[23] This totals to $350 per month to pay for access to the information society. This represents a substantial portion of monthly spending to most Canadians. For Canadians in the bottom quintile, it is an insurmountable obstacle.

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[22] Authors of this study also emphasize that parents contribute to their child's education by passing on attitudes, providing encouragement, and standing as positive role models. This is known as intellectual capital which is usually associated with socioecomic status (De Broucker & Lavallee, 1998)

[23] Featured on *Midday*, July 30, 1999.

This is an obstacle because food and shelter costs account for half of all spending for Canadians with the lowest incomes. In contrast, the households with the highest incomes devoted only one-quarter of their budgets to these two basic categories.[24] While highest income households did spend one-third of their budgets on personal income taxes and income taxes claimed only 3% of the budget of the lowest income households, the highest income households still retained more disposable income. This income can be spent on computer software, hardware, and modems. If the distinction between the information rich and the information poor is characterized by computer equipment ownership, then the gap between the lowest and highest quintiles is widening. The proportion the poor spend on the basics excludes them from participation in the information society. More Canadians entered the computer age in 1998, with computer ownership rising 13%. Fully 45% of households reported having a computer, almost twice the proportion form five years ago when 23% reported owning computers. The 20% of households with the highest incomes were four times more likely to have a computer than those in the lowest income group. In 1998, 74% of households in the highest income group had computers compared with only 18% of households in the lowest income group. Similarly, Internet access from home was six times more common for households in the highest income group (48%) than for households in the lowest income group (8%) (*The Daily*, 1999).

[24] This data come from a release from *The Daily*, December 13, 1999. Data for this release come from the 1998 Survey of Household Spending. In 1997, this survey replaced the Family Expenditure Survey.

The findings of the ACOT study and research by De Broucker and Lavallee (1998) suggest that exposure to computers does not necessarily translate into better educational attainment. Intellectual capital linked to the socio-economic status of the father in the household seems to exert more influence on how well the children of the household do in school. Furthermore, despite the metaphor of computers as class equalizers as introduced in chapter three, the cost of computers and the attendant expenses of getting "wired" sustains the inequality. The poorest households spend most of their money on groceries and rent. To add to their financial woes, it is most often the poorer children who are at risk of school failure and who have special educational needs.

5.6 Summary

The preceding chapter examined four social regularities which constrain the formation of social problems. Governmentality, a kind of governance that brings everything under its gaze is borne out by the province's emphasis on achievement testing and professional growth plans. This governance is a form of panopticism that controls without any physical coercion. It is a significant contradiction for a government which prides itself on "less government" all the while increasing its surveillance on its citizens.

Second, professionalization assumes that teachers, schools, and the learning process still have a lot to gain from the business world. While part of the problem, according to government policy, is that schools are not computerized enough, the rest of the problem is that schools are not business-like enough. Teachers and schools are too expensive to pay and to maintain, so the government is considering other delivery models in the form of distance education re-engineered along business lines.

Third, choice emerged as a regularity. The Alberta government is committed to providing more opportunities for parents to maneuver their children in the publicly funded education system. Research suggests that children of those parents who are more advantageously positioned will reap more benefits than children of poorer parents. Furthermore, schools also suffer as a result of competing for students. The regularity of choice creates the "polarization of desirability" amongst schools. This regularity works in concert with the regularity of class to cement divisions between people and schools based on socio-economic and intellectual capital status.

Fourth, class emerged as a regularity which kept the poor firmly entrenched in their marginalized positions in society. Computers are being touted as class equalizers. However, a closer examination of the attendant cost of purchasing and maintaining such equipment, in light of the proportion the poor spend on the basics like food and shelter, is too great an obstacle for low-income families to surmount.

As features of society change, however, the functions of policy remain to support those in positions of power. This function of policy becomes evident in the following chapter as it considers the policy solutions that support the current government's agenda to diversify its economy by accommodating corporate interest in the guise of the public good.

Chapter 6 - Arena III -The Study of the Construction of the Range of Acceptable Policy Solutions

6.0 Introduction and Definition of Arena III

This chapter demonstrates that the type of policy solutions Klein's Progressive Conservative government has deemed proper for addressing the problem of educational restructuring presuppose that more schooling is the answer to unemployment and poverty. The chapter also shows that reasons for this particular choice of policy solution come partly from Alberta's unique economy characterized by high incomes, low taxes, and shrunken public services. Another impulse for these policy choices is Alberta's governing class' ideology. This dominant power includes influential figures in politics, science and business who attempt to reshape the education system to serve their interests. These interests assume cultural values in line with the neo-liberal economic development model: individualism, entrepreneurship, and corporatism. The electorate consents to this reshaping because the ideology appears to make sense and the elite appears to be concerned about interests of all. Thus, this chapter analyzes policy solutions and it offers reasons to challenge the universality of neo-liberal interests.

The policy solution arena is concerned with the study of the social construction of the range of acceptable policy solutions. The grid of regularities, discussed in the preceding chapter, is like a pre-conceptual field that constitutes some policy choices as relevant and others as virtually invisible. As discussed above, the pre-conceptual field is determined by a particular class, Alberta's scientific, political, and business class. The ensuing analysis looks at how and why the interests of this class are served through policy from the Conference Board of Canada as well as the Klein government.

6.1 Policy in Action: The University Buys In/Sells Out

A newly launched newsletter from the University of Alberta trumpets, "Teachers receive a million dollar boost." The newsletter intends to reach alumni and to solicit feedback from them. It is telling that the article chosen for the front page of the newsletter is about a one million dollar donation from Imperial Oil to the Faculty of Education for Science and Math teaching. A quote from the article suggests that Imperial Oil, a member of the Conference Board, was not entirely satisfied with the manner in which science and math were taught,

> By helping improve the teaching of math, science, and technology for Canadian school children, Imperial Oil believes that it is making the best possible investment in Canada's future. By supporting [the] Faculty of Education, we hope to ensure that schoolchildren are well-prepared for the knowledge-intensive work environment of the 21st century (*Bridges*, Spring 1999.)

The above example points to a trend in changes in education: large corporations providing subsidies to schools in exchange for a role in determining curriculum and methods of delivery. While it may be argued that it is "nice to see that business is getting involved," evidence suggests that business is getting involved for reasons other than philanthropy. The analysis will also provide reasons to suggest that despite the appearance of equitable relations and mutual benefit, corporations because of their economic power, may be wielding disproportionate influence in setting the course for educational change. Educational change is a focal point for Alberta government policy.

6.2 Alberta Education: A Policy Response

> "The changes outlined in this plan will alter substantially the character of the education system and ensure a bright future for our students" (*Meeting the Challenge II* 1995, 5).

The *Framework for Enhancing Business Involvement in Education* is one example

of government policy which assumes a specific construct of a social disease (underemployment and unemployment) and sets out to cure it by prescribing infusions of business contacts. One of the recommendations is to develop credentials for a global economy. Thus, students are to be graded according to their facility with the slippery concept that is "global economy." The *Framework* suggests that by garnering input from business/employers requirements for graduation would include selected knowledge, skills, and attributes from the Enterprise and Innovation, Information Processing, and Career Transitions strands of Career and Technology Studies.

The minimal space in policy commentary that is devoted to a discussion of the nature of the problem and the problem group is almost a direct signal or code that the function of the policy has little to do with really addressing the problem (Scheurich 1996, 310). This glossing over of the problem is evident in the curriculum document entitled *Information and Communication Technology, K-12: An Interim Program of Studies.* Of the 32 pages in the document, only three are concerned with providing a "background" to the nature of the problem. Within those pages several contentious claims are made. First, it states that the society is "...moving from an industrial economy to an information one...". This claim is techno-deterministic in that it extends to technology the ability to effect vast and positive change on public education, not to mention society as a whole. While most people would unthinkingly agree, it is commonsense, after all, this claim is presented as an assumption that most have taken for granted. It is true and the policy principles, curriculum overview, and learner outcomes that make up the bulk of the document all serve to uphold the veracity of this problem. Another statement in the

introductory section of the document speaks to the exclusivity of who is being talked about and who is being excluded. For example, in the introduction it states that "...portable telephones [that] make us accessible when we are not at home or in our offices..."(1999, 1). The use of the conjunction "or" indicates that if we are not at home then we must invariably be at work, presumably in our offices. How many of "us" are employed in offices? Why is the office site used as the place of work? Many of us work in stores, on construction sites, in hospitals, in schools, at gas stations. How is it that the notion of work is reduced to an office? Indeed, the use of the first person plural assumes that all of "us" work in offices or, perhaps, we should strive to overcome whatever humble workplace we occupy so as to reach that apex of workplaces, the office. It would have been more inclusive had the authors of this document used the term "workplace" instead of "office." In *Meeting the Challenge IV*, business comes through as a subject area for study as well as a guiding "player" in the shape of education. To illustrate, under the "Learning Expectations," students seem to be headed more for a techno-scientific and economically-geared education as there is only one very cursory expectation of personal ethics, the humanities and the fine arts: "respect the cultural diversity of Canada and appreciate literature and the fine arts" (1997, 6). The verbs "respect" and "appreciate" are never used in relation to other disciplines such as math, science, business, and computer technologies. When the document discusses these disciplines it uses words such as "use," "understand," "demonstrate," "manage." These verbs are much more powerful in their meaning thus lending more authority and credence to the disciplines associated with them.

6.3 A Post-Industrial Order: A Context for a New Vocabulary

Policy claims that the old industrial order is crumbling and is being replaced by a post-industrial economy. To prepare students for this shift, the provincial government sees fit to restructure what students are taught and the way in which they are taught. The above discussion on the policy solutions for this new workplace privileges the office or the business as the future work site and places priority on math, science, business, and computer technologies over the humanities and the fine arts.

Critical theory is flexing to accommodate the disintegration of the old industrial order (Wexler, Martusewicz & Kern 1987, 238). The old industrial order has remained cloaked by claims that it continues to sustain public institutions, pursues coherent and certain knowledge, and nurtures integrated persons. But as we move to a post-industrial economy, the intensification of existing and even characteristic tendencies of the present social order persist. I suggested these tendencies existed in chapter four in the discussion of computers as class equalizers. Claims that access to information would disrupt the characteristic social order were not borne out by research. Poorer children did not do better in school when exposed to more computers. It is suggested that instead of a dichotomy between structure and agency, there exists a tension between subjectivity and collective action. Changes in the form in commodity production, the culture of consumption and in the formation of the individual subject lead to a reorganization of schooling and education in the broader sense.

The above presumptions about changes in the definition of society and who the individual is in that new society is central to examining policy solutions. These

presumptions are central because a new vocabulary has emerged about society and its inhabitants. New terms for society like "information-society" and "knowledge-based economy" and new tasks for individuals in society like "life-long learning" may connote a sense of hope for all and empowerment for the individual. This relabelling, however, may mask the inequitable relationship between schools and business.

To a certain extent the school is always vacillating between two conflicting discourses. One discourse stresses "empowering" students while the other emphasizes "training" students for the workplace and preparing them as consumers. The potential for both discourses remains inherent within a mandatory and universal system of public education. As the analysis of government policy suggests, the discourse which appears to be gaining in importance as a result of government restructuring is one which prepares students for the market as workers and as consumers. The language in policy, however, can also be one which promotes student empowerment. An argument can be made that students cannot be empowered in this society if they cannot find their place as workers in the labour market. Schools would be doing their students a disservice if they ignored the changes present in the economy. However, changes are happening so quickly that it is difficult to determine what the needs of the labour market will be once students are ready to enter the workforce (Wotherspoon 1998, 142). Furthermore, as discussed in chapter four, even if schools are to be training centres, it is unlikely whether they would have the resources to meet labour market requirements. It seems especially unlikely in Alberta when policy sets out the following statement: "It [the three-year business plan] is a plan for change that ensures Alberta students are well prepared for the world of work and for

life-long learning, at a cost Albertans can afford" (*Meeting the Challenge I* 1994, 2). The latter portion of the statement that focuses on the cost of education and what Albertans can afford suggests that there is a limit to the resources the government is willing to supply. It is seeking outside assistance to provide educational opportunities for students.

Opportunities for students seem boundless with the emphasis on life-long learning. The alliterative ring of "life-long learning" resonates with the promise of improvement and self-fulfillment, the perpetual learner. But according to the empirical refutation in chapter four and to Easton's (1999) argument, this perpetual learner is essentially a precursor to the perpetual consumer. Since there is a new surplus in the form of information, students must be trained to continually upgrade so that they can continually consume. The perpetual learner is a new definition of worker and consumer. Easton's analysis revealed a normalization of the language, seen in the term "life-long learning." The new metaphor for the learner sets down requirements of the economy and workforce. Furthermore, it is doubtful that educational restructuring will alter the reproduction of social hierarchy as promised in government rhetoric. The education system is being restructured to cut costs. A way to do this is to build relationships with business to alter the delivery of education. This effectively conflates "training" and "skills" with "education" and "knowledge" (Shaker 1998, 3). Another reason for this restructuring may be to assure a competitive edge in a world where there is increasing capitalist modes of production in countries that were not formerly considered competitors. The example used at the beginning of the chapter on the relationship forged between Imperial Oil and the Faculty of Education speaks to this phenomenon of

twinning business with education to increase competitiveness.

Slaughter (1990) provides an analysis of the relationship between business and the university campus. This analysis may also be generalized to the budding relationship between business and public schools. Lyle Oberg, the first minister of Alberta's newly renamed ministry of learning, furthers the restructuring of the education system when he speaks of a "seamless" system wherein there is a smoother transition between secondary and post-secondary studies (*Edmonton Journal*, A4, May 27, 1999). I suggest that there will be an even more pronounced corporate presence in the form of partnerships with schools. If the transition to post-secondary schooling is to become smoother and if post-secondary institutions like the university are becoming increasingly reliant upon the philanthropy of corporations, then corporations will exact their expectations upon secondary schools as well. Slaughter (1990, 144) suggests that critical and neo-Marxian arguments about the nature of the new relationship emerging between corporations and the university focus on the accelerated growth of a military-university-industrial complex. Corporations are the dominant fraction, but the several fractions share broad class interests derived from their mutual need to maintain and increase power and profits at the expense of other classes. Multinational capitalism is fueled by high technology so as to keep first world countries in a dominant position despite growing global division of labour and increased capitalist production in third world countries.

In the next section, I examine the shifts in diction in policy documents as reflections of the economic forecast the government wishes to promote. I contend that specific language choices is one of many public relations tools used to create a sense of

urgency and to legitimate the policy direction the government has set out.

6.4 Policies: Reflections of the Economic Mirror

It is interesting to note the variety of subtitles on the *Meeting the Challenge* series of educational policy documents from the provincial government. The titles of the documents, font size, as well as the contents of each of the series are reflections of the economic forecast and attendant tone the government has toward education. The first document in the series is entitled, "Three-year Business Plan." The second and third documents in the series both bear the title, "Three-year Business Plan for Education" whereas the fourth document is labeled "Detailed Three-year Plan for Education in Alberta." Although each document is one part of the series, differences in the content, layout, and titling indicate a slight change in the discourse of the policy solution.

I suggest that the first document, the "Three-year Business Plan," as an outcropping of the massive funding cuts to education in 1994, is constructed to appear serious about the "frivolous" spending that has beset educational funding. In 1994, Premier Ralph Klein announced a four-year reduction target of 12.4%. This first business plan seems to be more concerned about the things that "really matter" such as "effective measurement and reporting of outcomes," a system that is "efficient and accountable," with emphasis on "reduced spending." (3) The word "education" is not even part of the title of this provincial policy document. The only way in which a reader would know that this document is about Alberta schools is by looking down in the lower right hand corner of the front cover where the term "education" is printed in the smallest

font-size of all the terms on the page. Furthermore, the first paragraph from the "Message from the Minister," acknowledges the drastic funding shortfall in the 1994 budget: "Ensuring access to a quality education for all Alberta students, *even during a time of reduced spending* [italics mine], is the highest priority of the Alberta government" (2). It seems that what is important is to save money. Education is not important enough to mention because this particular policy is a justification for the spending cuts. The government's focus is on providing an educational infrastructure *"at a cost Albertans can afford* [italics mine]" (2). In spite of cuts, there is some attempt to convince the electorate that the government is not abandoning education as a priority. For example, then Alberta Education minister, Halvar Jonson, stated that the funding cuts to education were the "lowest of the major spending departments and a clear indication of the government's priority on education." It seems, however, that is simply window dressing considering the deep funding reductions that characterized that particular budget.

The next document in the series suggests that the government is succeeding in meeting its self-made challenge and that things are improving for education. *Meeting the Challenge II* includes the word "education" in its title. It is an indication of the "softening" of the government's stance toward education since it wants to communicate the message that things are looking up. This softening is evident in the "Message from the Minister" section of the document. It seems that the government wishes to make clear its satisfaction with the manner in which the restructuring is taking place. The minister writes, "1994 was a year of significant change and *improvement* to Alberta's

Education system" and [the 1995/96 – 1997/98 Business Plan for Education] clarifies earlier initiatives, fine tunes others and *builds on our progress"* [italics mine] (2). "Business" remains a prominent term in this document. Both the title and the contents attest to this. The introduction contains an overview for the "Business Plan for Education," a testament to the priority the government places on education.

Meeting the Challenge III is a continuation of the government's self-congratulatory rhetoric. The "Message from the Minister" assures the electorate that "Alberta's education system has turned a corner. The reductions are behind us" (I). The message also makes a curious claim in the following statement: "Education will reap the benefits of the province's fiscal restraint policies that have eliminated Alberta's deficit . . ." It is difficult to understand how benefits can be garnered from two years of funding cutbacks. While the government assures that "funding for education will increase," a closer look reveals that funding never returned to 1994 levels until 2000-2001 after strong political protest and lobbying by the Alberta Teachers' Association, school trustees, school boards, and parent organizations. Of course, funding is a subjective term. If per student spending is considered, funding is not on the increase. While the policy conveys the impression that spending is on the rise, an alternative analysis focussing on historical funding levels for public education and provincial comparisons shows otherwise. In six of the first seven years of the Klein government's term in office, aside from a one year aberration, per student spending levels declined (Neu 1999, 80-81). However, it is important to point out that these numbers do not reflect the new spending for education in 1999-2000.

The *Meeting the Challenge IV* cover page is oddly bereft of any mention of business but the discourse persists. Entitled "Detailed Three-Year plan for Education in Alberta" this document, while still a business plan, is a departure from the previous plans at least superficially, from the previous documents. Even the table of contents page, characterized by a prominent "Business Plan" subtitle in the previous documents in the *Meeting the Challenge* series, is noticeably free of such labeling. Nevertheless, the impetus for business remains within the document. Minister Gary Mar's, brief but pithy message emphasizes the role of business in shaping education in Alberta as well as the identification of technology integration as a new goal:

> As we look past the year 2000, we see the ever increasing role of technology in our lives. Students need information technology skills for the workplace and post-secondary studies. Therefore, government has identified the integration of technology in education as a new goal. A major asset to education is partnerships. I look forward to achieving the goals we have set by continuing to work with our partners (I).

As an indication of the priority the government places on education, it includes a special "reinvestment initiatives" in the 1997/1998 to 1999/2000 section of the series. A one-time contribution of five million dollars over two years is being provided from the Lottery fund. However, education is still constructed as deficient in technology; only schools willing to plan for technological infrastructure will be rewarded handsomely. For example, to qualify for funding from the Lottery Fund, school boards must spend a matching amount on approved technology integration projects.

The preceding analysis of the *Meeting the Challenge* business plans indicates that the government is more concerned with its cost-savings agenda than pedagogical imperatives when setting policy for education. The policy-writers are also careful to couch the terms of the policy such that it appears that the government is doing its best,

under difficult circumstances, to provide a sound education system. Thus, the analysis reveals a constructed multi-faceted problem, a matching solution, and hand picked evidence of success. The problem is a bloated, bureaucratic, and unaccountable education system in a socio-political context of high debt. This problem is solved by drastic cost-cutting and restructuring. Evidence of success is provided by increased achievement testing, fewer school boards, increased choice for parents, and technology integration in education. Of course, each succeeding document speaks to the progress in these areas. Success is easily measured when education is considered, in times of debt as a cost and in times of plenty as an investment. Ultimately, the analysis reveals that the "changes outlined in this plan will alter substantially the character of the education system" (*Meeting the Challenge I* 1994, 3). This new character is motivated by market discipline.

6.5 A Hermeneutic Interpretation of ACOT

It is vital to understand the sources that inform policy. It is often the case that the same research undertaking is interpreted differently depending upon the standpoint of the interpreter. Again, this is a hermeneutic process where the reader brings to the text his or her own biases and views and preconceived notions. For example, Logan (1995) quotes a section of the Apple Classrooms of Tomorrow project. As discussed in chapter three, Logan is an advocate of computer integration in schools and of increasing the relevancy of curriculum to the world of work. His selection of the quotes indicates his need to find examples of success:

> Students reported that they were more inclined to review and reflect on their computer based writings than on handwritten text. They also reported a greater willingness to share

> their written work with peers, and recognized the value of doing so to improve their work.... Students were more actively involved in designing and building curriculum projects, and hence, more responsible for constructing their own knowledge (322)

Robertson, on the other hand, is much more critical of ACOT as she contends that "pure educational research was not Apple's priority" (196). She disagrees with the parameters, or lack thereof, that the project placed on the study. The project used the model of "computer saturation" where Apple computers were to be given to every teacher and student, at school and at home, in order to test what happens when students have "total, unlimited access to technology" (1998, 130). She wonders, cryptically, what would happen if every student had "total, unlimited access to teachers." Robertson implies that "teacher saturation" would result in better achievement. She realizes that this alternative is not viable in the current discourse surrounding computer adoration and teacher bashing.

The above two varying interpretations of the ACOT study is an example of critical hermeneutics in action. Producers of texts construct the text as an interpretation of the world, or facets of the world that are then in focus. This is the double hermeneutic or the interpretation of an interpretation. The interpreter of texts does have a very important role to play in the reading, and thereby, acceptance and legitimation of texts. The reader is responsible for bringing all contentious assumptions into the process of interpretation by imbuing the text with those "common sense" understandings; those taken for granted presuppositions. These presuppositions are never asserted in texts. Even as people make things or say things that seem to be the "original," these originals are imbued with their previous experiences and their biases. Logan's bias is toward the tightening of

relationships between school and the workplace. He selected certain portions of the ACOT report that would lend credence to his bias and promote his view of what schools are supposed to be for. Logan selected portions of the report effectively leaving other portions out. Robertson, on the other hand is deeply concerned about what she views as the disproportionate level of influence that corporations are having on schools. She decided to use those portions of the report that corroborate her discourse surrounding the "attack" on schools. Thus, this suggests a powerful way in which to impose assumptions upon readers and interpreters. The fact that people accept these assumptions is a type of power. Getting at those assumptions is one task of critical theory. As discussed in chapter two, critical theory rejects the notion of absolute "Truth" or "Value." Whatever is posing as truth or value is always somebody's ideas.

To get at the presuppositions then, requires a look at who the individuals are and what positions they occupy in society. Since this study is an empirical and ideological critique of Alberta's educational restructuring policy , individuals whose presuppositions are at issue are those who comprise Alberta's leading political, economic, and scientific class. As suggested in the preceding analysis on the provincial business plans for education, this group presupposes that public education must be cut in order to be saved. As a social service, education was diverting too much money from initiatives on technological innovation. Corporate welfare takes precedence over social welfare. Prosperity in the province comes through quality management, labour training, international marketing, technological innovation, and development of resource-based industries (Kachur 1999, 61). Seeds for this success are planted in classrooms where

students are prepared for the new work order. The logic held by the elite is that a neo-liberal, post-industrial development model offers the only option. Any other alternatives such as increasing funding to social services to offset the effects of unemployment become non-sensical and thereby, unthinkable. Thus, Fairclough (1989, 17) posits that this model represents the intersection between common sense and ideology.

Common sense and ideology find their nexus in the new model of education promoted by the Alberta government. While partnerships are warmly adopted by provincial policy, one birthplace is in the discourse provided by the Conference Board of Canada (CBC). The following section looks at some contradictions in CBC policy on school-based partnerships. As well, this section examines a case study to reveal that partnerships may exist more to serve the business than the school. Here, I focus on business-education partnership and I provide evidence that despite the rhetoric to the contrary, business partners wield much more power in the relationship than do the schools.

6.6 Business Partnerships: Within the Range of Acceptable Policy Solutions

Policy from the Conference Board of Canada pushes partnerships between schools and business. Policy documents such as *Operating Principles for Business-Education* partnerships and *Evaluating Business-Education Collaboration* attest to the Conference Board's commitment to tighter relationships between public schools and private business. Indeed, with funding cuts it makes sense, common sense, to make education a "shared" responsibility. Of course, what is shared is the cost of running schools which, through the articulation of CBC's policy, require the latest in computer

technology. This relationship has become formalized, legitimated, and promulgated through the policy's discourse. "Partnership" conjures up notions of mutual respect, collaboration and fairly shared benefits. However, the language of each of the documents reveals a difference between the message about the role the business partner has in the partnership.

First, *Operating Principles* takes a look at what a successful business-education partnership is. The document considers five areas as indicators of success. "Inception and Development" is concerned the written plan of the partnership. "Ownership" lays down the ground work necessary to get a partnership up and running. "Operation" describes the running of the partnership while "Evaluation" measures and reports on the workings of the partnership. Lastly, "Communication" is concerned with the flow of information between partners and stakeholders. The preamble to the document provides a sense of comfort and has a definite "feel good" quality about it: "Business-education partnerships are mutually beneficial relationships between employers and educators that enhance learning for students and other learners" (1998, 2). Phrases such as "enhance learning for students and other learners," "partners share values and objectives," and "Business-education partnerships are mutually beneficial relationships" connote the primacy of the shared benefit of such partnerships. The policy constructs the notion that this is a win-win situation.

Evaluating Business-Education Collaboration uses language which may be objectionable to some partners. Discretion is advised. This document also provides a tool with which to quantitatively measure the success of a school-business partnership

and is called the Value Assessment Process. This tool "can be used by business, education organizations, and others who want to become involved in effective collaborative education activities." Businesses can use Value Assessment to set organization-wide business objectives for their involvement in education and relate them to their overall corporate strategy. Education institutions can use Value Assessments to set organization-wide education objectives for their collaborative involvement in business, and relate them to their overall business strategy. Herein lies the difference between the *Operating Principles* and the *Value Assessment* document: the emphasis of success as measured in business terms. *Operating Principles* constructs business as a benevolent, compliant and conciliatory companion to education where the inception and development of any partnership will "test actions against the ethics and core values of *all* partners" (2, italics added).

The Value Assessment process, on the other hand, constructs business as more distant, cold and primarily interested in value for money. The business discourse assumes precedence over the education discourse and is seen in the manner in which potential or current partnerships are assessed. Objectives for both education and business are listed and ranked according to a popular vote. While this ranking seems democratic, it must be remembered that there are more schools than there are business partners with which to be matched. Considering this oversupply of schools, if the "free market" discourse is extended and all schools are encouraged to enter the marketplace of corporate partners, corporate partners retain a greater say than will schools in the matching process. Because

there are many more schools than businesses, schools would be forced to compete with businesses as businesses.

A case study by Taylor (1998) reveals that this law of the market and the primacy of business discourse in such partnerships place the business partner in a position of superiority over the school partner. It also reveals a business stress on strategy over philanthropy which has the effect of shutting out those students who are not preparing for a professional career.

Taylor (1998, 408) suggests that it is important to recognize the tensions between the idea (commonly expressed by corporate spokepersons) that the primary function of schools is to supply "appropriately skilled and motivated labour for the business community" – and the idea that schools should develop the capabilities of all students so that they can participate in a variety of ways. It is important to recognize this because evidence provided in the following case study suggests that business possesses a disproportionate amount of influence in setting the agenda in school-business partnerships. This is problematic since it runs counter to the notion that schools should be preparing citizens, individuals who exhibit cultural tolerance, ethics, and personal development, as well as workers.

One example where the tension became evident was in the practice of job shadowing. The case study involved a Calgary-based oil and gas company, Monarch, and Northwest High School (NHS). Job shadowing was one of many ways in which the school and business were to "enhance learning for students and other learners" (*Operating Principles* 1998,2). This practice was conducted by Monarch executive staff

who would match students to jobs they indicated an interest in. But in contrast with the notion that the partnerships were to benefit "all" students, in the case of job shadowing for executive Richard Black, the coordinator wanted to find the "right kind of student" (Taylor 1998, 409). Furthermore, Monarch's donation of one thousand dollars for a scholarship, with the possibility of summer employment, for the top achieving student reinforces the existing hierarchy within schools: the elite group continues to get the rewards. Lastly, Monarch's support for the Junior Achievement (JA) tends to show a preference for those students who would most likely end up in a business career, partnership or not. For some time, Monarch supplied employee advisers who worked with NHS students on JA projects such as "basic business" and "applied economics." These students attended a luncheon and met "fairly high-powered people down there" (Taylor 1998, 410). In this way, students are supposedly rewarded for their pursuit of economic literacy (Livingstone, 1983).

The above section provides an account of the only in-depth case study of school-business partnership in Alberta. Inspirations for these partnerships stem from documents like the CBC'S *Operating Principles for Business-Education Partnerships* and *Evaluating Business-Education Collaboration*. In step with these documents, the *Meeting the Challenge* series indicates that government is very keen to promote such partnerships and that these partnerships are a "major asset to education" (*Meeting the Challenge III* 1997, i). However, the above case suggests that such a partnership may not be benefiting all students. The types of activities the business organized seemed to appeal to those students who already had the advantage academically, and eventually, career-wise. In the

Monarch-NHS partnership the practices of job shadowing, providing scholarships, and participating in Junior Achievement projects reinforces the existing hierarchy within schools. The 1992 OECD report as well as management writers Davis and Botkin (1994) see such partnerships as a "new way of doing things" (cited in Taylor 1998, 408). But what is new may be limited to what is being taught and how it is being taught. The beneficiaries of this innovation are not new to success. While this is only one case study and more cannot be known about the nature of school-business partnerships without a wider sampling of such accounts, the preliminary evidence suggests that pedagogical impulses are not motivating changes like these partnerships. If business-minded policy communities like the OECD and the Conference Board of Canada are influencing provincial policy to the point where language used in Alberta Education documents mimics that in OECD and CBC documents, it would not be unreasonable to conclude that recent educational reforms, related to partnerships and technology, serve business interests predominantly.

6.7 Alberta: A Socio-political Hothouse for Computer Integration

Radical funding cuts. Restructuring according to business-sense. Reifying technology. Why does this go on in Alberta? The answer seems to lie partly in the power of the delusional arguments for computing. Harrison & Kachur (1999, 40) suggest that the answer may also lie in the disdain that neo-liberal governments, like Alberta's, have for certain higher areas of education, most notably the social sciences and the arts. This disdain exists because these areas critique commonsensical notions and provide alternatives when most people have accepted that there are no alternatives. However, an

argument can be mustered that Alberta's government is doing the right thing in restructuring education along business lines. Everyone benefits from these policy solutions because everyone will know what is expected of them. With increased accountability and standardization, teachers know what they are supposed to do, students know what they are supposed to learn and the public keeps an eye on them both. However, the language implies that such restructuring benefits most Albertans while evidence exists to suggest that people have been manipulated through the sophisticated and complex use of public discourse.

I assume that people have been manipulated for two reasons. First, the electorate is not privy to research which points to logic flaws about school reform. Second, the government is quite adept at appearing concerned and capable of identifying a problem and coming up with common sense solutions. An example of research which may in fact alter public opinion of current educational restructuring is Taylor's case study on the school-business partnership. While policy and government spin-doctoring may cast a glow on such an initiative, the research suggests a contradiction between the language in policy and its articulation at the micro level. Such research is not widely consulted since it emanates from the "left wing" (neo-Marxist thinking) and the "ivory tower" (the university), two locations which the current populist political elite is unlikely to visit.

The second reason the electorate may have been manipulated is due to Premier Klein's charisma. Kachur suggests that Klein "symbolizes the sovereign authority of the common folk" (1999, 64). He is appealing and people like him because his countenance is not threatening, he speaks a language most can understand, and "like all good prophets,

Ralph speaks in parables" (ibid).

In order to get a sense of the reasons for policy solutions set out by Klein's government, it would be useful here is a look at Alberta's unique economy. The current government wishes to diversify its because it has historically relied upon resource extraction which leaves Alberta vulnerable to the inevitable "boom and bust" cycle. Alberta has warmly embraced and vociferously promoted the technologization of education as another facet of the economy. The reasons for this are rooted in the province's distinctive economy. Alberta is a wealthy province featuring high incomes and low taxes, but also under funded public services (Harrison 1999, 35). This contradiction can only be explained in the province's reliance upon primary resource extraction (eg. oil, gas, forests, grains) and the bizarre political relationships that this reliance produces. Since the early 1990s, Alberta has initiated a New Right agenda, tying economic liberalism to social conservatism (Kachur 1999, 60). Economic liberals push ideals about the free market, individualism, and minimal state. This new thinking shapes the way the government attempts to move away from staples-based economy to meet the demands of a knowledge-based economy. What is at work here is a neo-liberal form of human capital theory, which, as discussed in chapter three, presumes that people are like machines. This neo-liberal "formula for success" works this way. Alberta's new technology–based revolution will transform information into knowledge, knowledge into intellectual capital, and "intellectual capital into an economic engine that will increase competitiveness and wealth" (ibid, 61). The Progressive Conservative provincial government supports such initiatives and privileges corporate welfare over social welfare

in the form of subsidies, tax incentives, and cuts to social programs.

The human capital theory refutation discussed in chapter four is applicable to the neo-liberal "formula for success." Increased technology inputs does not necessarily translate into wealth. Government discourse ignores the evidence that there is more deskilling rather than upgrading, that significant changes occur in personal aptitudes, labour markets, and employment needs, and that money needed to outfit schools to prepare for students for the job market is being cut.

A better explanation for increasing technology inputs in tax-funded schools would be the current government's alliance with corporations. Considering how enamoured the government is of corporations, it seems reasonable to assume that the Klein government would provide as much support as it can to see corporations benefit in Alberta. It only makes sense, neo-liberal common sense, that is. What is at stake for the government is also at stake for corporations. Evidence suggests that corporations see excellent potential in the educational computing sector of industry. This sector represents a rich source of "untapped" consumers: children. This trend has been emerging since the 1980s. Apple (1984) points to the greatest growth in educational publishing is in the areas of computer texts, and computer assisted instruction. As a result, several text publishers, in what has generally been known as an ailing industry, have been purchased by large computer companies (Olson 1987, 197). The demand for the personal computers in the private sector is shrinking-increasingly it is limited to the upgrading of existing systems – and most businesses have met, or exceeded their information technology needs (Robertson 1998, 126). *Business Week* explains the new marketing strategy: "Penetration of PC's in

American homes is stalled at about 40%...Where do you get new users?" (ibid 126). The answer lies in targetting students. And students, once converted, will remain active buyers of computer gadgetry for life (ibid, 127). Indeed, if entrepreneurs wish to get rich quick, they should probably become involved with the children's computing market. School expenditures on technology in the United States during the 1996-97 school year hit a record $4.34 billion. The Education Industry, a term coined in 1994 by EduVentures Inc., investment bankers and consultants to public and private education companies, has recently been estimated to be from $630 billion dollars to $680 billion dollars (Shaker 1998). Very attractive sums indeed and considering the provincial government's penchant for profit, value, and investment, the education industry is difficult to ignore.

6.8 Summary

The preceding chapter has considered the policy solutions put forth by the provincial government. The provincial government has decided to restructure the education system along business lines. This claim is borne out by a number of analyses and one case study. An analysis of documents on education from the Progressive Conservative government in the 1990s reveals a decided bias toward business. While it would be naïve to abandon entirely the notion that schools should prepare workers for the labour market, an examination of the policy solutions set forth by the government indicates its answers to social problems are limited to those agreed upon by the corporate boardroom. It seems that the government is held in the corporations' thrall as it attempts to convince the electorate that educational refitting according to a business model is the proper thing to do and has garnered public support and legitimacy through a process of

discursive manipulation. The assumption that schools should primarily exist to prepare workers for the new work order abounds in policy not only from the government but also from the Conference Board of Canada.

As an example of a "new way of doing things" the government has promoted school-business partnerships. This initiative is subject to suspiscion. There are two reasons to suspect the validity of government claims about school-business partnerships. First, evidence suggests that the practice of such practice runs counter to the rhetoric. Schools garner less of a benefit than do the business. The preceding analysis has provided reason to be concerned how mutually beneficial the partnership is when the relationship requires schools to be dependent on businesses for personnel, cash, and equipment.

Another reason to be skeptical about such partnerships is that, as the case study suggests, the type of students who benefit from business presence in the school are those who already possess skills and talents to succeed in the marketplace. It seems unlikely that "all learners" will benefit from such partnerships. The case study, while not a proof, illuminates problems with policy solutions that restructure along corporate lines. As Alex Molnar (2000) states, "The market provides for those who can provide for the market and not all are equally able to do so." If that is the case, then the market will not provide for a portion of the population. The rhetoric in policy suggests that all will benefit but this claim has been shown to be in doubt.

Chapter 7 - Arena IV -- The Study of the Social Functions of Policy

7.0 Introduction and Definition

Traditional policy researchers use the metaphor of sickness to determine solutions to social problems. They refer to social problems as social "ills." They assume that the disease or social problem could be treated with an appropriate treatment or policy solution. While there may be pre-existing conditions (like poverty) that can be said to be a cause of the disease, at some point the disease requires a remedy.

The fourth arena of policy archeology is the examination of the function of traditional and post-positivist policy studies within the larger liberal social order. While I introduced and briefly outlined these two approaches to policy studies in chapter two, this chapter provides a more in-depth analysis of the features and limitations of these two social scientific approaches as well as a third reading of policy discourse. I analyse the features and limitations of the traditional and post-positivist approaches by referring to the policies under review. I also use a critical approach to interpreting policy discourse. Thus, this chapter is a reading of policy according to the traditional, post-positivist and critical social scientific approaches. The critical reading suggests that the traditional and post-positivist approaches, while different in degree, are similar in that both accept the socio-political order as given.

This analysis is organized into three parts with each succeeding part dealing with the limitations of the previous one. Each part uses portions of policy that conform to a particular feature of the approach under discussion. In the first part, I analyse documents based on a traditional approach to policy studies. In the second part, I use a post-positivist approach to critique the traditional analysis. Finally, I use a critical approach to

deal with limitations of both the traditional and post-positivist approaches to policy studies. Thus, this chapter treats the approaches as both a tool and a problem. Most important, however, the chapter argues that the social function of traditional and post-positivist policy analysis is to normalize a discourse and discipline a population.

7.01 Organization of the Analysis

The analysis is organized into six sections. The first four sections are from Scheurich's conception of traditional policy studies. Traditional policy study typically encompasses one or more of four sections: (1) descriptions of social problems, (2) discussions of competing policy solutions, (3) considerations of general implementation problems, and (4) evaluations of policy implementations. Section (5) is a post-positivist critique of the traditional school. This section identifies limitations to the traditional method by demonstrating that policy is more symbolic than functional. Section (6) is a critical look at both the traditional and post-positivist approaches. This section demonstrates that both traditional and post-positivist approaches to policy studies mostly differ in degree but not in kind. Both contribute to the maintenance of the social order, a normalizing practice.

I demonstrate that this normalizing practice is primarily a method of ensuring society is structured along liberal lines. I use Finlay's (1987) discourse analysis of new communications technology to show that certain discursive procedures, policy documents in this case, render possible and necessary the raising of both traditional and current issues in very specific ways. These discursive procedures point to a coupling between information and economic vocabulary. This coupling has implications for society as seen

in the commodification of information, where "quality of life" is measured in terms of the "quantity of possessions." Communications, through computers, cell phones, fax lines, and satellites, would seem nowadays to be desirable possessions. Information as commodity should be "free-flowing" much like the laissez-faire economics of Adam Smith. Many politicians in the field of communication do seem to tout the free flow principle.

7.1 A Sampling of Approaches to Policy Studies

7.11 Descriptions of Social Problems

Within the frame of social problem descriptions, traditional policy researchers compile descriptions of social problems and discuss probable causes for the problems. While I only look at finished policies, I use some portions of a policy discourse to infer how information is gathered. I emphasize that what has been used in the finished product will only enhance the correctness of the policy. It would not be in the government's interest to use data in their policy which contradict the policy direction. Policy must be presented as a cohesive and integrated whole. If the Alberta government, the Alberta Teachers' Association (ATA), or the Conference Board of Canada (CBC), include data in policy discourse that do not support their policy solution, then their claims to truth about the social problems may become suspect. All three policy communities act as participants in the traditional policy analysis problematic. They shape their descriptions of social problems so that the policy solutions "make sense."

For example, in the Alberta Education document, *Framework for Technology Integration in Education (1996)*, policy researchers posed their first question, "How

important do you believe it is for the future of Alberta students to be skilled in the use of technology, and to have knowledge and competencies in the use of information retrieval and processing?" (3). The question is accompanied by a bar graph, depicting the strong public support for student training in computer skills and assumes to address the social problem of inadequate preparation for the future. The cause for this inadequate preparation is "inferior technological skills." As a member of The National Council on Education (NCE), the government demonstrates its commitment to technological integration.

As an arm of the CBC, the NCE produced *Matching Education to the Needs of Society: A Vision for All Our Children* in 1995. This document posed a similar question, "Is the present system capable of preparing students for the challenges of the 21st century and for a working life that is characterized by *high technology* and rapid change?" In the Alberta Education document, the statistics were chosen as the first figure to be featured in the document. The government's participation of a CBC endorsed council indicates a bias toward computerized education and a common understanding that the social problem of inadequate technological inputs should be remedied by schools.

7.12 Competing Policy Solutions

Within the second area of traditional policy studies, policy researchers discuss the

relative merits of different policy solutions.[25] For this area of traditional policy studies, the ATA has researchers who have helped constitute the technology policy discourse to examine, assess, and offer alternatives to government policy and thus contribute to maintaining its power. For example, the ATA offers suggestions for alternatives to government policy on teacher preparation. The ATA contends that good teaching conditions are congruent with good learning conditions. This discourse is most clearly seen in the area of teacher inservicing. The ATA advises more and continuous inservicing while the government documents show relatively weak public support for teacher preparation.

The government places low priority on teacher upgrading. In *Framework for Technology Integration in Education (1996)* out of five areas influencing technology integration, teacher preparation was ranked last (5). Teacher preparation was last in a list containing network infrastructure, curriculum development, hardware/software and policy direction. It can be argued that this data is the "will of the people" and that policy is being shaped around that will.

7.13 Considering Implementation Problems

Within the third area, policy researchers study policies that already have been implemented in order to consider possible problems in implementation. The rapid change characterizing technology makes it particularly problematic to encapsulate and set

[25] As I am examining only finished policy documents, I am not privy to any proposed policy solutions that were discussed and rejected but I can infer that ATA policy sets out to provide a dissenting voice as a

a direction for schools. In June of 1998, the Alberta government instituted an interim curriculum for technology integration and it was contested in Alberta schools. The government proceeded without an implementation plan and this created a lot of confusion as schools were in varying stages of computer readiness. For the Edmonton Catholic School District, by June of 1999 "school-based staff development and site-based budgets will by directed to ensure that all teachers have opportunities to learn and apply the minimum grade 12 technology exit outcomes in their assigned duties" *(District Technology Plan* 1997, 12). Since this initiative was the school's responsibility to see through, interpretation and articulation of this directive were as varied as the number of schools within the district.

The ATA has questioned the government's lack of an implementation plan for a technology integration document. The resolution reads: "Be it resolved that The Alberta Teacher's Association urge the Department of Education to develop and fund a comprehensive implementation plan for the *Communication and Information Technology Kindergarten to Grade 12 Program of Studies"* (1999, 51). The ATA maintains that this technology program will affect every teacher in the province. At the same time $77 million dollars in public funds have been spent on technology hardware with minimal attention to the inservice needs of teachers who are expected to use this technology. The ATA interpreted this absence of an implementation plan as a dismissal of the importance of teachers in the learning process and, as a consequence, it asserts the absence will negatively affect student achievement. Thus, the ATA's implementation assessment and

response to government policy on technological integration.

alternative proposals promote its own professional agenda for teacher inservice and incorporate "opposition" with the Alberta government and CBC's agenda. Being "different" is a matter of emphasis and adaptation.

7.14 Policy Evaluations

The fourth area of policy studies in the traditional mold is the evaluation of the effectiveness of particular policy implementations. The examples I use to illustrate the policy evaluation section of traditional policy studies come from the policies themselves as policy is turning its eye onto itself. For example, *Meeting the Challenge* is an evaluation discourse about the effectiveness of particular implementation especially in the "Results and Measures for Goal Achievement." Each document in this series identifies goals as well as the manner in which the achievement of those goals will be assessed. In the 1997 document, the "Key Performance Measures for Education Accountability" provides statistical data on the "quality of education in Alberta" (19). There are thirteen different areas on the quality of education which range from achievement tests scores, percentages of students receiving a high school diploma, parental satisfaction with varying aspects of schooling to differences in average and annual provincial equalized residential property tax rate for education. Each of these areas has a target for 1999, most often represented by a percentage. For example, the target for 1999 in the area of parents and high school students satisfied with various important aspects of teaching/school is 90%. According to data collected from students and parents from 1995 to 1996, the percentage of parents and high school students satisfied with various important aspects of schooling is on the rise. In 1995, 82% of

students were satisfied that "teachers used a variety of methods to help students learn." In 1996, figures for this aspect of education crept closer to the target as 88% of students expressed satisfaction with their teachers use of differing methods. There is only data available from 1996 parents' satisfaction with this aspect. Eighty two per cent of parents were satisfied.

The government policy evaluation indicates that there is an area where satisfaction levels are not adequate. There is a wide gap between the expressed satisfaction and the target satisfaction of high school students concerning technology in the school. The government aims for 80% satisfaction from parents and high school students. Students responded to the role of schools in improving students' computer skills. In 1995, 62% of students were satisfied that school improves students' computer skills. Assuming accurate and reliable statistics, this number crept up to 65% in 1996.[26] A 15% difference existed between students' satisfaction and government targets. Technology use in schools, high schools in this case, seems to be an area of concern, a "problem" in need of fix, a disease seeking a cure, more technology and support for it.

7.15 A Post-positivist Approach to Policy Studies: An Explication Through the Documents

The post-positivist approach to policy studies rejects the notion that policies are de facto solutions to social problems. Kelly and Maynard-Moody contend that in contrast

[26] Information from parents is to be collected in 1998. Data for question concerning student access to technology in school will also be collected at that time.

with the traditional approach, post-positivist approaches now conceive of policies as symbolic and interpretive rather than efficient solutions designed to solve society's ills. Policy solutions are no longer "real" solutions or efforts to solve social or educational problems; policies are now symbolic solutions to "latent public concerns" (cited in Scheurich 1996, 299). However, my point is that while post-positivist analysis of symbolic effects is necessary, it is not sufficient in explaining the social functioning of technology. In this section, I identify the symbolic effects of policy discourses. The next section deals with the critical insufficiencies of post-positivist approaches.

An example of the symbolic purpose of policy can be seen in a post-positivist analysis of the Alberta government's *Framework for Technology Integration 1996.* This document used results of surveys to justify policy. Six surveys are depicted showing responses to the following areas of policy integration: (1) importance of technology in the education system, (2) ranking of needs to implement technology, (3) teacher's technology needs in classrooms and changes to teacher training, (4) integration of technology in all subject areas (5) school and ministry technology plans, (6) sources of funding. Concerns are shown in government surveys and bar graphs illustrating survey results. According to the survey results, there is strong public support for computer integration, for business involvement in education, and for modifying teacher training to accommodate the changes in public education. Provincial policy satisfies public latent concerns in two ways. First, depicting concerns in this way conveys the sense that a consensus is reached democratically. Second, it shows that the government uses this consensus to make policy.

Government policy which cites high school students' satisfaction levels with technology inputs is another example of policy satisfying latent concerns.

The gap between expressed satisfaction and targeted satisfaction on computer use suggests that, according to the government, schools must work harder to improve this figure, considering the importance being placed on technological integration in the schools. This gap between the actual satisfaction and targeted satisfaction concerning computer skills offers possibilities to the government to justify more spending on technology and more surveillance to assure that schools are being accountable. The government may use this gap as reason to increase technology inputs in hopes of improving the actual satisfaction. In keeping with the government's neo-liberal ideology, it is unacceptable that such a high status area is not received with the appropriate percentage of satisfaction. It would appear that schools are neglecting an area necessary for success in the marketplace. The government has moved to address this gap by drafting *Information and Communication Technology Kindergarten to Grade 12.* The ATA's response to this policy provides evidence that, as the post-positivist approach contends, government policy is little more than a symbolic gesture rather than a legitimate effort to solve a social problem.

The ATA policy on technology integration points to the symbolic nature of government policy. Alberta government policy on technology integration provides a "map" for schools to follow as they pursue their technological integration journey, but it does not provide adequate funds for schools to reach the targeted destination. Targets such as "rewiring and upgrading facilities for telecommunications connectivity" (14),

"[equipping] all Alberta schools and classrooms with modern computer technology to achieve an average student to computer ratio of 5:1" (6), and "achieving minimum hardware and network standards for schools" (14) are elusive without adequate funding. A closer look at ATA policy on computer integration shows that the government policy is more symbolic than functional. Government policy discourse is symbolic because it does not provide the required funds to support wide-sweeping changes or perhaps even to increase high school students' satisfaction levels.

Three resolutions from the eighty second annual representative assembly (ARA) address the government's under funding of technology integration. Resolution number 113 cites "financial support without detriment to other valuable aspects of the educational system" (49) . This is one of five principles which is proposed as necessary to guiding decisions regarding technology in education. Similarly, resolution 114 stresses one of the conditions for a positive use of technology is "public funding that addresses the total cost of ownership" (49). The ATA's policy not only addresses the insufficiency of funds but also their source. Lastly, resolution 117 urges Alberta Education to "increase its funding allocation for the development of curriculum standards and to discontinue the development of computer-based instructional materials for on-line education" (50).

The Committee on Technology and Education, an ATA committee responsible for creating policy on technology integration, points to several areas which need to move from beyond the symbolic phase to the real solutions phase. The pivotal point is money. An analysis of per-student funding reveals that despite the hype surrounding the notion of investment in education, the money is not there to either support the policy demands on

education or to substantiate the claim that funding is on the increase. Research by Neu (1999) supports the ATA's claims. Neu contends that the reinvestment in education touted in the 1999/2000 portion of the *Meeting the Challenge* policy document is essentially a fable (1999, 81). Alberta government policy discourse acts symbolically but is impotent to fixing the problem. Neu's analysis includes changes in historical funding levels for public education and provincial per student comparisons. The adept public relations acts as a smokescreen to obscure the truth about the low priority the Alberta government places on publicly funded education. Neu concludes that the Alberta government is more concerned with "impression management" than with the provision of adequate funding. The point remains crucial for understanding government reform initiatives in 1990s. However, it should not be overlooked that new government money was injected into the system for 1999-2000 as a concession to public protest and lobbying for adequate funding.

Reinvestment remains a myth for two reasons. First, Alberta's per-student spending on public education falls below the national average, with five of ten provinces spending more on education than Alberta. Quebec, Ontario, British Columbia, and Manitoba spend, on average, fourteen per cent more per student on public education than does Alberta. Second, the reinvestment announcement on January 9, 1998 resulted in a one-time jump since the Klein government was elected in 1993. Projected per-student spending in 1999/2000 dips below 1997/98 per-student levels. In 1998/99 per-student levels are still twelve percent less than when the Klein took office. These reinvestment announcements do not fundamentally change per-student spending levels. In six of seven

years of the Klein government's term in office, aside from a one-year blip, per-student spending levels have declined (Neu 1999, 80-81).

A post-positivist analysis of government policy reveals that it is more an attempt to convince the population that it cares about the future of young Albertans, than a real solution. But provincial government policy is not the only policy that acts symbolically. As it applies to considering possible problems in implementation, the ATA acts as a form of opposition yet it offers no alternatives of its own. A pattern emerges. The Alberta government makes policy governing technology integration and the ATA responds with specific resolutions on what is wrong but is vague on how to fix it. For example, ATA policy states that "timely access to technical support" as well as "time for teachers to learn about technology and to develop technology-supported curriculum" should be adopted as long range policy (ARA 1999, 24). Such pronouncements are ambiguous especially coming from a community that considers itself expert in teaching and learning. Words such as "timely" offer little direction to guide teachers in obtaining access to technical support. The ATA policy on technology integration is not much more than symbol. While it identifies harmful effects that government policy may have, the ATA's role as policy maker stops here. Its role as opposition is limited to description and critique. The ATA, at best, offers reasons to doubt government policy and, at worst, continues to obfuscate the view to policy solution.

7.16 A Critical Evaluation of Policy Discourse

It will be recalled from the discussion of the second area of traditional policy solutions, competing policy solutions, that *Framework for Technology Integration* is a

government document that mandated the computerization of education. A feature of this document is the inclusion of statistics that suggested that there is strong support from a cross section of society on the necessity of this educational restructuring. A critical evaluation of the document reveals some reason to doubt the strength and the breadth of the support. While the document offers some consensus rhetoric by assuring that "over 600 responses and 40 briefs were received from parents, school councils, school boards, teachers, school superintendents, the Alberta Teachers' Association, business and other interested citizens," it would be useful to have a breakdown of the responses of each of the groups as well as the nature of the sampling (1). As well, the list of all the respondents, while appearing to satisfy the requirements of "talking with Albertans," and thereby achieving consensus, acts to obscure two things. First, the list does not identify who these people are in terms of their education and income level. A factor missed, such as class, (discussed in chapter four) tends to influence people's outlook on matters such as education. Second, after the list of respondents, the next sentence reads, "There was very strong support for phasing technology integration into Alberta's education system" (i). Placing this statement immediately after the long list of respondents seems to establish a causal connection when one does not exist and links strong support for such an initiative. Considering the widely varying ideological and class positions that such a list of people and organizations entails, it is difficult to conclude that strong support would come from most of the respondents.

As a respondent in that list cited on the first page of the framework, the ATA articulates its position on technology integration as it pertains to teachers by publishing

its own version of the policy. The ATA's position on teacher preparation shows an action reaction dynamic at work in its relationship with the Alberta government. The ATA claims that technology integration is best achieved through a systems planning approach where training for professional staff, access to hardware and software, and effective technical support are essential components (1999, 51). It is significant that the ATA listed training for professional staff as the first component of its systems planning approach because it highlights its rejection of that section of the government's framework where teacher preparation is presented as a low priority to the public.

The preceding analysis demonstrates that policy from the Alberta Teachers' Association, the provincial government, and the Conference Board of Canada with its various councils, exhibit characteristics of the traditional and post-positivist approaches to policy studies. As Scheurich (1996) contends, both approaches analyze policy and both approaches assume the socio-political reality as given. While the ATA and the Alberta government differ on the role of teachers in the technology integration issue, an assumption shared by both the ATA and the Alberta government is that computers belong in classrooms. The ATA is not rejecting computers, as such. It is rejecting the subordination of its members by government policy which privileges computer resources over human resources. Thus, while all three policy communities are contributing the maintenance of the social order by reproducing the symbolic order, this reproduction does not mean there is no dissent. Rather, agents take into account ideas of the dominant order as well the ideas of those who may wish to adjust, rebel against, or revolutionize a society. Here, the agents of the dominant order are the provincial government and its

policy strategists and analysts.

An organization that appears to question this order is the Alberta Teachers' Association. Challenges to the social and symbolic order, however, should not be treated as insignificant. But how significant has the ATA's dissent been? For example, the ATA makes its disagreement with the policy direction of the provincial government known by releasing the handbook in its annual representative assembly, a technology integration policy of its own. An example of a more visible act of resistance to the dominant order is the 1997 rally on the Alberta legislature grounds.[27] This dominant order is maintained not through coercion but through "manipulated consensus" or consent. The ATA is as savvy an organization as the government to understand that consensus may be based on distorted information. It understands its function is to critique and offer alternatives to the often distorted message (examples of which are seen in the above discussion on the *Meeting the Challenge* documents). Communication and information are distorted by dominant interests and the ATA is aware of it. Textual sparring exists between the ATA and the Alberta government, especially with respect to *Information and Communication Technology: An Interim Program of Studies*. Point by counter-point the ATA dissents.

The ATA may consider itself a dissenting voice in the face of the corporate bias evident in government and Conference Board policy. But an analysis of ATA policy discourse and specialist council practice indicates some contradictory factors are at work. The ATA, like the Alberta government, indicates some compliance with corporations.

[27] On October , 1997 the ATA organized a rally to raise awareness of the detrimental effects funding cutbacks would have on public education. Estimates of teachers and supporters at the rally exceeded 20,

This compliance is seen by the Computer and Technology Specialist's council's decision to hold the 1999 annual conference, *Learning in the Next Millennium*, at Jasper Park Lodge, an expensive location. Also, the existence of a Technology committee and a Computer and Technology Specialist council increases the visibility of technology in the classroom and lends it the credence that the ATA claims to downplay in the "Interim Position Paper on Technology and Education" (ARA 1999, 52).

An example of the contradiction between the policy stated in the ARA resolutions text and the practice of the Computer and Technology Specialist council clarifies the point. The conference booklet provides information on how the conference was amply supported by a who's who in the technology industry. The more generous contributors ("our platinum sponsors") included Adobe, Apple Canada, Cisco, ESSC Genicom, Telus,and 3Com (*Learning in the Next Millennium*, Conference Booklet 1999, 1). Furthermore, in the introduction the conference booklet cites: "...we have technology specialists from big and small businesses, and marketing specialists from many parts of Canada and the United States..." (ibid, 2).

Considering the suspicion with which the ATA treats the "corporate penetration of the public sector" (*Annual Representative Handbook Interim Position Paper on Technology and Education* 1999, 52) in its policy documents, the presence of and gratitude for these sponsors at an ATA sanctioned conference reveals a performative contradiction between ATA policy and specialist council practice. Its members continue

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000. Such a high-profile mass demonstration is the ATA's response to the government's neo-conservative agenda.

to endorse and teach other teachers about the benefits of software, which as discussed, bears the undeniable stamp of the corporation. This contradiction is resolved with symbolic effect in the specialist council's dependence on the computer companies' sponsorship. While it may be argued that the "devil you know," using the corporations as the devil, is better than the one you don't, the fact remains that technology is heavily corporate, and as far as the organizers of specialist council conferences are concerned, aligning with corporations may be a necessary evil. ATA policy symbolically supports teachers and appears to be leery of the corporate discourse and practices embraced by the provincial government and its muse, the Conference Board of Canada. However, the practice of the technology specialist council to set a conference in an exclusive locale replete with corporate sponsorship contradicts the text's meaning. Thus, it would not be unreasonable conclude that policy meanings outlined in the ATA are contradicted by the symbolic practices of an ATA specialist council.

This above analysis of the approaches of policy studies indicates that the ATA, Alberta Education, and corporations are not looking to transform society but to discipline schools and teachers to stay the course. Technology, schools, and business have intersected and this intersection is being vociferously promoted by government policy and sedately underlined by ATA practice. The connection between technology, schools, and business has the effect of diverting the government's and the ATA's gaze from other problems. As the discourses of rapid change, outcomes based education, knowledge/information-economy/society encroach upon the collective psyche other problems are pre-empted. The absence of policies on poverty, on the disaffection of

young males, and on youth violence, to name three, speaks to the low priority placed on such problems even though these problems are major determinants of school failure, according to sociology of education literature. Technology is assumed to be the solution without any reason to establish validity - let alone encounter attention. Poverty, disaffection, and violence cease to be problems because they are no longer in the spotlight. Technology is. The only problem is getting the technology to the schools. The primary job of social constructions is to provide a definition of correct, productive behavior of citizens who are already acting in concert with the social order (Scheurich 1996, 312). Below, I provide an example of a type of student who is no longer spotlighted and thus, no longer important enough to be included in social constructions of problems.

7.2 The Impotence of Policy on the Marginalized: Policy as Symbolic Gesture

To discipline or not to discipline? Children whose families have higher incomes, whose fathers have prestigious jobs, and whose intellectual capital levels enable them to heed and follow the course set down for them by the elite have the best chances at success in society.[28] Their class position predicates their movement through the school system and the labour market. Government policy, as symbol, reinforces the classed social order. It is impotent to removing class barriers because its function is to maintain the barriers. Government attempts to give the impression that its policy will benefit all

[28] Intellectual capital refers to two areas. First, it refers to the family members' achievements at school and work. Second, it accounts for parental contributions in the form of attitudes, expectations, encouragement, and opportunities to learn (*International Adult Literacy Survey,* 1994).

Albertans. Saying one thing and doing another is also exhibited by the ATA. It denounces corporate discourse in policy but it celebrates it in practice.

It is difficult to discipline those who are not amenable to such discipline. It will be recalled from chapter one that my initial attempts to reach and teach my first class failed. My failure stems from social regularities, most notably class. Other more senior teachers would try to console me. I remember being extremely frustrated that I could not "reach" one particular child in my class. She was a lost soul by the seventh grade; her absenteeism and apathy toward homework had me looking at what I should do to "turn this kid around." I recall expressing my worry to a fellow colleague who seemed to have found peace with herself about this child. She told me, "Mary, you are doing something. You're a role model because you are responsible, married, you pay your taxes and those taxes provide for the social services which will help this girl." This help did not become manifest in her happiness. She was one of the many students who did not accept my transparent bargain. Even though I allowed her to choose whatever song, movie, television program to write about, she rejected my attempts at breaking through the barriers between us. She knew that I was submitting her to a treatment and that I really did not understand her. The fact that I *allowed* her to do something, even if it was something she may have enjoyed, implied that I was exerting control over her. Despite the soothing words from fellow colleagues and my attempts to normalize students who rejected me, I remained part of the social problem. Paying my taxes and staying married did nothing to change this student's truancy, apathy, and misery.

Robertson echoes my concern about the impotency of schools to deal with the

most difficult and persistent human problems. Her concern focuses on one of the "commandments" of Information Technology: Access to an increasing quantity of information is the same thing as thinking and learning. Information equals knowledge, wisdom, and possibly virtue (1998, 98). This commandment nurtures the conviction that more information will make us smart and wealthy, but also happy. Human progress is the sum total of information gained and distributed. What distinguishes some countries (or citizens) from their more fortunate neighbours is that they are information-poor. Robertson's notion of commandments of technology is an example of the discursive procedure of exchange. This discourse substitutes traditional issues with current ones issues in very specific ways (Finlay 1987, 36). Robertson uses the example of how information has replaced dirt as way of expressing an individual's poverty. The new currency for wealth is no longer land or crops but databases or websites. This association between information and wealth upholds the notion that information is a commodity. If that is the case then the poor, who will always be with us, will not do so well.

The preceding chapter considered examples of traditional policy studies found in policy from the Alberta government, the ATA, and the Conference Board. Traditional policy studies is comprised of: (1) descriptions of social problems, (2) discussions of competing policy solutions, (3) considerations of implementation problems, and (4) evaluations of policy implementations. Applying these four areas to the policy communities under review revealed that, respectively, that the Alberta government and the Conference Board identified the social problem of inadequate ability of the present education system to prepare students for a changing labour market. Government policy

functions as a transmission belt for corporate interests.

The second area of traditional policy studies demonstrated that the ATA, while agreeing with the presence of computers in classrooms, objected to the low priority placed on teacher preparation to integrate technology in the classroom. The ATA functions in this area as a sounding board to government policy. Its objection to the low ranked teacher preparation area represents its advocacy to its members while its acceptance of the requirement to computerize education represents a shared assumption with the government. The ATA is in a difficult position in that it must advocate for its members but not to the point where it loses ideological ground with the government.

The impulse to retain ideological ground is also seen in the third area of traditional policy studies. The third area considered possible problems in implementation. I used a similar example as in area two to exemplify this area. The ATA promotes the idea that the lack of a government funded implementation plan is harmful to good teaching and learning. While positioned as an expert, the ATA does little but react to government. The absence of alternatives on the part of the ATA suggests that its function is to provide a symbolic figurehead to its members without posing too lethal of a threat to the government.

The fourth and final area of traditional policy studies looks at the evaluation of particular policy implementation. The case used to illustrate this area suggests that government policy evaluation acts to substantiate an agenda, not to rethink it. Evidence suggests that the government has a particular bias toward increased technology inputs. Satisfaction surveys indicate all is well with policy direction except for computer skills.

Policy evaluation requires that schools must do more to increase technology inputs. It is not unreasonable to suggest that the construction of the social problem predicted this gap between actual and targeted satisfaction.

Finally, post-positivist discourse analysis provided a unique way to study the symbolic effects of traditional policy analysis but itself was found wanting. A critical component of discourse analysis was to identify how the symbolic effect of Alberta's education policy discourses diverted attention from the pressing issues of poverty, disaffection, and violence. Furthermore, the discourses centred the educational gaze on the lack of inservice for teachers as adjuncts to computers and information access rather than on improving the intellectual capacity of teachers to provide knowledge and wisdom.

In the preceding chapters I have attempted to explain how problems are constructed through the grid of social regularities. I wanted to understand the dilemmas I faced, and continue to face, regarding new technologies and how I might combine my love of language with an enriched classroom environment for my students. I also examined how the existing policy solutions, by virtue of the constraints of the grid of social regularities, framed my own thinking about the possible policy solutions. I learned and demonstrated how traditional and post-positivist approaches to policy studies seem to contribute to my dilemma by taking the socio-political reality as given and offering little insight into societal change. I have since returned to my classroom and significant questions remain. What have I really learned? Is a there a new social and economic order emerging? Policy discourse assumes that schools must change as a reflection of the

fundamental shifts being made in society's structure. In my concluding chapter I offer some reasons to doubt what I had assumed at the beginning, that a new type of society, the "information society" is being created. There are thus implications for teachers and students and alternative recommendations on policy concerning technological integration that I think I am now prepared to share.

Chapter Eight - Concluding Remarks

8.0 Policy Solutions that Ignore Features of Social Life

The notion that information and communication are object-referents to be equitably distributed at a fair exchange rate refers to the belief that has haunted much liberal thinking about communication and which holds that the more communication people have the better off they will be. John Stuart Mill's theory of this economic principle, maximization of goods and profit, finds a counterpart in this principle of maximization of communication. The linking of information and economic vocabulary is perhaps no coincidence but indicates rather the predominance of exchange as a procedure that gives direction to policy statements. This linkage between information and economic vocabulary is part of the logic the provincial government uses to promote its definition of a quality education.

The government's definition of quality education focuses on technical skills and job-readiness. As stated in *Meeting the Challenge IV*, one of the "*Key* Areas for Improving Alberta's Education System" is "improving student access to information technology" (emphasis added). Alberta Education means to accomplish this by "matching funds to put more computers in classrooms; establish requirements for technology in school authority three-year plans; develop curriculum standards for technology skills; and encourage the enhancement of teachers' abilities to use technology in instruction" (1997/1998 – 1999/2000, 2). The Alberta government reasons that increases in access to information technology leads to increases in information. From this attainment of information, knowledge emerges. This knowledge is applied and an educational credential improves one's ability to compete in the labour market. As more

people get jobs and are able to spend more, the economy benefits from the increases in consumption. Increases in consumption combat poverty and unemployment, decreasing the reliance on welfare and other social programs.

While the logic is compelling because it offers hope that access to computers translates into a socially and economically stable society, there are several flaws in the government's reasoning. First, the assumption that computers can simultaneously be engines of social change and remain aloof from regularities such as class is difficult to accept. As discussed in chapter four, factors such as intellectual capital and the prestige of the father's occupation have more to do with educational attainment than any other factors. It is more likely that students who possess the intellectual capital and who have fathers in prestigious jobs are of higher socio-economic class. Results from the Apple Computers of Tomorrow (ACOT) (1985) study illustrate that exposure to computers does not necessarily translate into educational attainment. Thus, the assumption that computers provide benefits to all, ignores the more influential force of class.

Second, the government policy equates information with knowledge. This slippage obscures the difference between meaningful information or knowledge and the barrage of advertising and trivia that is masquerading as information. The assumption is that a "quality" education requires access to the glut of information available through web browsers and search engines. Roszak suggests that information is an answer to a question that purports to be a fact (1998, 1). Knowledge, on the other hand, involves working with selected information in order to formulate ideas, inculcate values, nurture tastes, and form judgements. Selecting information and working with it to garner ideas,

values, tastes, and judgments is done most cost-effectively with a good teacher equipped with enough cheap copies of whatever novel is age-appropriate. Indeed, if the government is looking for a way to cut costs to education, mandating computer integration is not the answer.

Third, logic in government policy assumes that increased technical skill acquired in school will offer boundless opportunity in the labour market. This assumption, as research by Livingstone (1998) and Wotherspoon (1998) suggests, is dubious. It will be recalled from chapter four that the metaphor of computer as job skills is built on this questionable foundation. Research on the changing labour market suggests that it is difficult to make a definitive conclusion about what should be taught in schools so as to best prepare potential workers. This conclusion is difficult to reach because of the changes in personal aptitudes in students over the course of their schooling, changes in labour markets, and changes in employment needs (Wotherspoon, 1998). Furthermore, the assumption that increased computer skills means quality jobs is unconvincing because some research suggests that growth of high technology industries tends to decrease the need for highly skilled individuals. High technology industries tend to need more service and clerical workers than those with more sophisticated skills. While jobs are being created, policy seems to imply that all jobs will require highly sophisticated skills.

Government, business, and union approaches to technology in Alberta schools share many of the above explanatory assumptions. Thus, there is a tendency to prescribe similar solutions that differ in degree rather than kind. Is there, however, a different way to consider technology options in Alberta schools? I would argue yes. But first let me

review the argument of the thesis and a present a few alternative explanations about the nature of the "information society."

Chapter two exemplifed key assumptions of critical theory. Critical theory assumes "Truth" and "Value" are somebody's ideas. Another related assumption is that social reality is constructed along ideological lines. Individuals who think certain ideas do not confront the world in the abstract because they occupy particular positions that shape their points of view. Critical theory revealed policies' values: entrepreneurship, consumerism, and individualism. The tool used in this study to sort observations, policy archeology, was informed by critical theory. It not only considered the policy solutions but also problematized the problems the policy set out to cure. In line with critical theory, policy archeology examined the preceding conditions which caused a particular problem to enter the gaze of the state and business.

Chapter three provided an examination of the conditions which lead to the construction of the social problem: a poor fit between school curriculum and job qualifications. Computers are being promoted in certain ways to justify their implementation in schools. Government assumptions about computers are seen through the metaphors of computers as job skills, as individuals tutors, as class equalizers, and as builders of community. Thus, according to the logic, if computers were not part of public schooling, students would be at a considerable disadvantage in many areas. According to the discourse promoted in government and CBC policy, the absence of computers would leave students bereft of career maps, of academic preparation, of a sense of equality along class lines, and of participation in the global community. Furthermore, an analysis of

technical school advertising, a news story featuring technology as well as career sections of a newspaper suggests that in order to prepare for the industry of the future, potential workers are affected in three ways. First, the traditional sequence of credential completion and workplace entry has been disrupted by the continuous change in the computing industry. Second, employers are increasing the pressure on prospective employees to upgrade their skills. Third, most workers seem to accept that they need to continually upgrade their skills to keep up with the job market as well as their competition. This discourse, as shaped by the metaphors, is one version of the story. Chapter four provided some evidence to be skeptical about the push to computerize education.

Chapter four took government assumptions to task through a critique of the metaphors used to justify computing in schools. Insofar as computers are equated with job skills, the critique revealed that jobs may not be as plentiful and as lucrative as the promotional material discussed in chapter three suggested. Some evidence suggests that de-skilling, for the majority, is more the trend. While increased qualifications may the case for the few, research suggests that the majority would be relegated to poorly paid and low skill level work. The second metaphor of computers as individual tutors is critiqued on its assumption that children would learn something they ordinarily would not because of a computer. Individualized learning, while appealing to most parents who would like to believe that their child belongs in a class by herself, tends to subordinate the values like patience and tolerance, which may be promoted in a more "traditional" classroom. Lastly, some evidence suggests that premature exposure to computer programs may be harmful to children's developing brains. The third metaphor of computers as class

equalizers is questionable because research suggests that other factors like intellectual capital and the status of the father's occupaton are much more influential in determining academic success. The last metaphor, computers as builders of community, is refuted on the basis that despite the best of intentions of corporations to improve access, this improvement does little to change the class positions of the marginalized that are lacking computer hardware in the first place. Inclusiveness, as a central tenet of the notion of community, is elusive when certain types of computing hardware and software are necessary for communication across the globe, especially when the technology is continually evolving and requires updating by its users. Chapter four outlined some reasons to doubt government and business claims that computers belong in classrooms. Chapter five identified five regularities that reinforced the argument that a computerized education may not be the answer to social problems.

Chapter five identified four social regularities which set the conditions for certain social problems to emerge and which, in turn, characterize the solutions to those problems. I identified the first three, governmentality, professionalization, and class primarily because I observed these regularities impeding my ability to teach my students. Choice became apparent as a regularity through an investigation of the influence of class. It seems that according to current neo-liberal ideology, "choice" is a necessary component for parental involvement in education. However, the analysis suggested that choice is limited to the higher socio-economic stratum of society. This chapter suggests that the middle class may be the only class benefiting from the policy solutions mandated by government and inspired by corporations.

Chapter six explored policy solutions and found that neo-liberal values like individualism, entrepreneurship, and corporatism values formed the basis for written policies. Government policy documents promote these values as beneficial to all but research provides reasons to be skeptical of this overarching beneficence. The school-business partnership, as an example of neo-liberal educational restructuring, may be more beneficial to the business than the school and may serve the needs of those students who would have already found academic and labour market success. This disproportionate benefit and attention to already successful students contradicts government policy and suggests that policy solutions are more for private business than public interest.

By using three different approaches to policy studies, chapter seven considered traditional policy studies and post-positivist policy studies as both a tool and as a problem. Policy documents in this study were subjected to both approaches. On the one hand, traditional policy studies assume that social problems are like a disease and that policies are the cure. On the other hand, post-positivist policy reject that policies do anything more than provide a symbolic gesture to latent public concerns. The common element in both of these approaches is that both assume the socio-political reality as given. Thus, both approaches accept that policy acts to normalize the population. Chapter seven also considered the dissent that organizations like the ATA may voice in the debate concerning technology integration. The chapter suggested that ATA dissent may not be as significant as a resistant force as touted in its policy discourse.

What is happening in schools is a manifestation of a particular ideology which promotes the values of continual learning and upgrading. This ideology is embodied in

the metaphor of the perpetual learner, who, according to Easton, is a precursor to the perpetual consumer. The perpetual learner metaphor suggests an alternative explanation for the push to computerize schools. This alternative aims to produce suitably-minded individuals who accept and seek the need to continually upgrade skill sets. Students are compared to computer software. Just as computer software is continually evolving in its sophistication, power, and speed, the perpetual learner is never satisfied with current levels of skill attainment. A reason for these new skill sets is the glut of information, which is the new market commodity. The oversupply requires willing and able consumers to buy the hardware necessary to access it and want it in the first place. It is not unreasonable to suggest that the impulse to computerize education is to shape a new kind of student to meet the requirements of a new kind of society. This new society, known as the "information society," seems to require high levels of computer literacy, professional flexibility, and personal autonomy.

Both Poster (1990) and Webster (1995) argue that the notion of the emergence of a "new order" is questionable. Both theorists challenge Bell's (1973) theory of a post-industrial society. Bell (1973) defines post-industrial society in opposition to all previous social formations, encompassing the entire history of humanity in a schema that distinguishes the new from the old. Daniel Bell, a prominent neo-conservative theorist uses the "post-industrial" framework as a way of explaining the changes in labour, income and knowledge that are determining that a new social and economic structure has emerged. Poster argues that Bell totalizes the effect of information and technology. This totalization is also seen in policy documents concerning technological integration in

education. For example, in one Alberta Education document, it states that "a society [that] is moving from an industrial economy to an information one, our students need to have technological skills for their future success" (*Information and Communication Technology: An Interim Program of Studies* 1998, 1) Technology is constructed as enabling people to do things "differently" signifying a sharp division from the way things were done before. Technology, according to this document, provides "out of the box" strategies. The assumption here is that technology provides unconventional, and thereby, better ways of teaching and learning. Solving problems in an untraditional way indicates an opposition to the way things were done "before" as distinguishing the new from the old (ibid, 1).

Government policy assumes Bell's claim is true: that a new age, ushered in by advances in technology. Webster, however, contends that Bell's theory is flawed on the basis that it employs historicism, reasons telelogically, attributes too much influence to the professions, and that it ignores the effect of social regularities. Much of provincial policy assumes the fallacious claims that Bell uses in his theory of the "post-industrial society."

8.1 Challenging the Notion of the "Information Society" with Theory

Bell's theory of the post-industrial society is key to many of the assumptions in provincial policy. His key theses are as follows. First, post-industrial society is a sharp departure from the past made possible by the increase in service sectors of the economy. Second, this increase is accompanied by a decrease in the agricultural and manufacturing sectors of the economy. Third, Bell uses an evolutionist approach to trace a movement

from pre-industrial, through industrial to post-industrial societies. An increase in productivity is the driving force behind the post-industrial society. This force causes a change in the character of social life from epoch to epoch. Muscle power, as seen in the pre-industrial epoch gave way to human interaction with machines, which leads to Bell's of our present reality as the material of work being information. Fourth, instead of life being a struggle between person and environment or person and machine, life in post-industrial society is a "game between persons" where information is the basic resource.

Bell's theory informs assumptions made by Alberta Education, the Conference Board, and, to some extent, Alberta Teachers' Associations' about society's structure. I have refuted these assumptions empirically in chapter four. A better explanation exists. I turn to Poster's and Webster's theoretical critique of the emergence of a new social order.

Poster (1990) suggests that an adequate account of electronic communication requires a theory that is able to decode the linguistic dimension of the new forms of social interaction. He suggests a new name for the current phase we inhabit as a society. He suggests the term "mode of information" (6).[29] Poster emphasizes the reformatting of social relations as a feature of the mode of *information.* For the subject in electronically mediated communication, the object tends to become not the material world as represented in language, but the flow of signifiers itself. In the mode of information it becomes increasingly difficult for the subject to distinguish a "real" existing "behind" the flow of signifiers, and as a consequence, social life in part becomes a practice of

[29] Poster's "mode of information" plays upon Marx's theory of the mode of production. A central concept in Marxist analysis, the mode of *production* is the way a society is organized to produce goods and services.

positioning subjects to receive and interpret messages (Poster 1990, 15). The new technology offers still newer and more potent means of social control through "manipulated consensus" (cited in Finlay 1987, 176). The possibility of using new communications technology means the control of language and subsequently of the knowledge filters and value systems of others.

Poster's use of this concept is an interpretation of the changes in society's organization. He suggests that history may be periodized by variations in the structure in this case of symbolic exchange. Also, the current culture gives a certain fetishistic importance to "information" whereas prior the deluge of information and computers, capitalist societies placed a high cultural value on accumulating goods. The new "good" has become information. While Poster accepts the idea that a new culture has emerged which commodifies information, he rejects the notion that a new type of society is developing. Along with Livingstone and Webster, Poster provides reasons to doubt the emergence of the "post-industrial society."

As I have already demonstrated, persuasive metaphors and obscured truths have persuaded Alberta's citizenry that a "new" social and economic order is emerging. Policy makers take these assumptions as common sense: that a new type of society is being created is a fundamental reason for restructuring tax-funded schools. Poster and Livingstone offer alternatives to this "new" economic order. While Livingsone's analysis focuses on information as an "economic rather than a linguistic fact," Poster's analysis

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This concept contains two major aspects: forces of production and relations of production (Johnson 1996, 180).

stresses the importance of language as a way to uncover what kind of society is emerging from this new economic order. His thesis that we live in a "mode of information" is helpful in discussing the manner in which social problems are constructed. He contends that the "information explosion" and the new communicational structures in which that information circulates give rise to the crisis of representation. Beyond a certain point, increased distance between addresser and addressee allows a reconfiguration of the relation between emitter and receiver, between the message and its context, between the receiver/subject and representation of himself or herself. These reconfigurations, which Poster refers to as "wrappings of language," in turn impose a new relation between science and power, between the state and the individual, between the individual and the community, between authority and the law, between family members, and between the consumer and the retailer (1990, 16). Electronic mail, fax machines, cellular telephones, and computer databases may increase our ability to communicate with others but, as Poster suggests, these communicational structures blur distinctions between addresser and addressee. Advances in sophistication of these communicational structures problematize identity and place. Databases at remote locations contain profiles and inform government agencies which make decisions that affect people's lives without any knowledge on their parts of these events. These examples of society in the "mode of information" exert a powerful yet invisible control over people's lives while at the same time promoting the belief that increased access to technology provides more power on the individual's part. Carolyn Marvin also argues that the history of electronic communication is less about "the evolution of technical efficiencies in communication

than a series of arenas for negotiating issues crucial to the conduct of social life; among them, who is inside and outside, who may speak, who may not, and who has the authority and may be believed" (cited in Poster 1990, 5).

As the preceding analysis suggests, those who may speak are the ruling class that sets policy on educational change. Those who may not speak belong to a class characterized by low intellectual capital and low socio-economic status. While I do not wish to do a history of electronic communications, I have shown ample evidence in this thesis to emphasize Marvin's point. These types of communications, as promoted in Alberta schools, change the way people relate to each other but retain and perhaps, further reinforce class divisions.

Webster (1995) also challenges idea that a new type of society is emerging. Like Poster, he questions Bell's conceptualization of the "post-industrial" society as a sharp departure from the past. While Webster agrees that information is playing an increasing role in social, economic, and political affairs, he rejects the idea that this is heralding a new type of society (31). Webster demonstrates that Bell's idea about the post-industrial society is flawed empirically, theoretically, and methodologically. This break is caused by the increase in service sectors of the economy accompanied by a decrease in the agricultural and manufacturing sectors of the economy. An unstated but vital point is that the wealth-creating sectors, like industry, are linked to wealth-consuming sectors like services such as schools. However, Bell demonstrates that wealth-creating sectors must subsidize the wealth-consuming realms. Schools must spend only what they "can afford" from the wealth created by industry.

Webster also critiques Bell's analysis on the basis that he uses an evolutionist approach to trace a movement from pre-industrial, through industrial, to post-industrial societies. This method commits two fallacies. First, it panders to historicism, the idea that it is possible to identify underlying or trends and forsee the future. Also, evolutionism employs teleological thinking. This is the assumption that societies change toward some goal. Secondly, Webster reveals that Bell's contrivance of "separate realms" collapses. Bell divides contemporary society into the three realms of social structure, politics, and culture. By dividing society along these lines, Bell avoids questions concerning the interrelationship of culture, politics, and social structure. Thirdly, Bell identifies increase in productivity as the pivotal force driving the emergence of a post-industrial society. Webster, contends however, that there is no reason why increases in professionals should lead to the conclusion that a new age is emerging.

The above argument outlines changes from an industrial to a post-industrial era. Webster (39) contends that Bell's historicist and evolutionary reasoning is characterized by reification and technological determinism, whereby technology does things, not people. This reasoning assumes that technology is a decisive agent of social change and that technology is untouched by features of the social world. These features include social relations of class, politics, and capital. It is difficult to accept that technology can both revolutionize social life yet remain aloof from social regularities. Provincial policy documents are demonstrably informed by this fallacious reasoning as seen in their assertion that "technology is changing the way we learn" while at the same time assuring that technology will "improve educational opportunities for all students." This shaky

theoretical foundation provides another reason to be skeptical about the plans the provincial government has for education.

Further, Bell's contention that wealth-consuming sectors, like schools, should spend only what they can afford is another area that Webster critiques and another area informing government policy. Provincial policy on school agrees with Bell and takes this restructuring takes this reasoning one step further. The government is cognizant of the need to create jobs, or wealth, in sectors of the economy other than in resource extraction. As it pertains to Alberta's erroneous technological integration policy, even if certain knowledge, skills, and attributes are attained, this will not be the basis for Alberta's prosperity and social equity. By aligning school curriculum with perceived increased technological needs of the "post-industrial society," the Alberta government *provides false hope* that it will diversify its economy and improve chances for social stability in this new age.

There is a different possibility. A new age is *not* upon us. This counter-argument is better supported by evidence and explanation. Government documents assume Bell's faulty theory and thereby are in error. If a new age is not in the making, why are all these changes being made? Essentially, policy development on technology serves an ideological function. Cultural values held by the current government use technology discourse to help determine social problems and policy solutions. As a class, the provincial government values cost-savings at the expense of public interest, business values market expansion at the expense of a democratic education, and the ATA values public image at the expense of authentic dissent. Teachers represent a drain on the

government budget. But they are in a contradictory position: central to the education system but relatively costly.

8.2 Teachers: The Costliest Element of All

With the corporate emphasis on "belt-tightening" the teaching profession will not escape unscathed. Research indicates that despite claims for increased efficiency and cost –savings realized through increasing computerization, the best learning will occur with qualified teachers instructing smaller numbers of students (Becker 1994, 318). But this research, unlike technological integration, is not compliant with the labour and cost-cutting ideology of the provincial government. Increasing pressure on teachers and mobilizing the technology discourse may be two ways for the government to break the will and force of teachers. By weakening teachers' resolve, the Alberta government can restructure education. Overburdening teachers with increased demands may enable the government to involve other more ideologically compliant forces like business in educational decision-making. The overburdening has to be justified and the necessity of technology and its discourse is the means.

Teacher's working conditions are deteriorating and teaching is currently being subject to rationalization, deskilling, and intensification (Apple & Jungck 1998, 135). In Alberta, for example, the ATA released *Trying to Teach* in 1993. This report identified the combined effects of integration, special-needs students in regular classes, results-based curriculum, program continuity, continuous progress, and increased external testing, to name a few. Input from 3000 teachers reveals that frustration and exhaustion are building in the profession. Teachers must teach larger classes in which students with emotional,

learning, and behavioral problems, struggle for attention or not to be noticed. This study has identified yet another cause for concern, technology integration, in this increasingly demanding job.

The deterioration of working conditions may mean the eventual disappearance of what Donald Norris calls the "teaching franchise" (cited in Easton 27, 1999). According to Apple, instead of increased autonomy, the daily lives of teachers in classrooms in many nations are becoming ever more controlled and subject to administrative logics that seek to "...tighten the reins on the processes of teaching and curriculum..." (1998, 133). The effect of achievement testing points to this (chapter one). Worries about my students' performance on standardized achievement tests dictated a change in my teaching practice. The pressure of achieving acceptable or perhaps even excellent standards on these tests exerted an external control on my classroom practice. In addition to the inevitable sense of a loss of control and fear of deprofessionalization, the very existence of teacher is in question. Supporting evidence comes from reform guru Perelman. Perelman asserts that, "information technology is at least as capable of displacing and transforming labour requirements in education as any other business. This is the greatest opportunity since Rockefeller struck oil" (1992). As argued by this thesis, schooling as business opportunities would not benefit students. Instead, entrepreneurs and government reformers would get rich through this displacement and transformation of labour.

8.3 Implications for Students

As educational policy constructs computers as individual tutors, the implications for students from families with low socio-economic status are not good. The

disappearance of the classroom, to some perhaps the only place where they feel they belong, may result in the erasing of such "undesirables." By dismantling the teaching profession, the result may be the neglect of the poorer student. The Alberta Government supports this notion of computers ". . . Internet- or network-based groupware that enables business colleagues and students to share documents and discuss projects from anywhere in the world at any time, and virtual offices and schools that have no buildings" (*Information and Communication Technology Interim Program of Studies* 1998, 3). Indeed, this disdain for the classroom assumes that modern information technologies render schools irrelevant since there is now much more information available outside the classroom than inside it. Of course, the government is promoting cyber-schools for cost reasons, but the rhetoric is much more compelling if there is an emphasis on the benefits that students would retain.

The above policy on the reassignment and eventual disappearance of schools is problematic in practice as shown in the following example of reassignment of schools. A new model of instruction at an Edmonton high school is such a reassignment. At the individualized program at St. Joseph's, students no longer attend classes or even use the term "teacher"; rather students register twice daily with their "T. A.s" (teacher advisors) and the rest of the day is up to the students. As a junior high school teacher in a school neighbouring St. Joe's, I am in contact with students and staff at the school. Both teachers and students provide information on the status of the new program.

A former student of mine attended the new St. Joe's. Although a bright, motivated young woman, she was not successful in math in the new program. Too many students

needed extra help in understanding their math homework and this prevented her from getting the attention she needed to get her work completed. Also, she used an individual learning guide that did not always contain the same type of material that was tested in the matching evaluation guide. It seems that one teacher produced the learning guide while another made the test for that guide. From this student's testimony, it appeared as though these two teachers had not collaborated closely enough on these documents. Being the type of learner she was, one championed by Alberta Education and the Conference Board, she took matters into her own hands. She decided to seek math help at her junior high school from her grade nine math teacher. He tutored her until the end of term. Independent initiative helped her through but she decided to forego the new model for her upcoming Math 20 course.

Public institutions have eroded to the point where students, like the one discussed above, need to seek their own way to get the necessary credential. Admittedly, the model at St. Joe's is in its infancy. The requisite growing pains will undoubtedly work themselves out but those students who need the motivating force of a concerned teacher will not do well at such a school. While I would suggest that the evaluation materials be more reflective of the learning guide, I cannot as confidently offer a suggestion that would deal with the issues an academically disadvantaged student would have.

Bishop Carroll High School, the Calgary school that inspired the new St. Joe's recently celebrated its 25th anniversary of individualized instruction. All is not gloom and doom for this method of instruction. While the method persists, the students who are

subject to it may not be so (p)lucky. What about the students who do not fit the perpetual, life-long learning profile? The policy which lauds the perpetual learner offers few policy solutions for the reluctant learner.

This powerful bias toward amplifying personal autonomy contradicts a statement in an Alberta Education document. It posits that with respect to technology, students should have knowledge, skills and attitudes that ". . . serve them well as they strive to become inquisitive, reflective, discerning, and caring persons" (*Information and Communication Technology Interim Program of Studies* 1998, 1). On the same page, this document puts forth the idea of schools that have no buildings as a vision that the government is embracing yet it encourages students to be caring for others. For what other reason would students not be attending a school than to exclude themselves from others? Schools are expensive sites to heat, staff, and maintain. If students stayed at home, the provincial government would realize a substantial drop in infrastructure spending. Why would they choose not to be in school? Rejecting traditional school has a certain cachet and I am confident, based on teaching experience, that the junior high school student would welcome the change in routine. But the government is unclear as to who or when students would stop attending. Research has shown that older school age children do not do better in school when their learning is computerized and that younger children's brain development may be compromised if computers are introduced too early (Healey 1998). The body of research done on student achievement using computers does not indicate any gains for the students. "The research is set up in way to find benefits that aren't really there. Most knowledgeable people agree that most of the research isn't

valid...Essentially, it's worthless" (Edward Miller, former *editor Harvard Education Letter*, cited in Healey 1998, 20). Knowing that the research is at best, inconclusive, or at worst indicates that technology integration may be harmful, it is remarkable that the changes being promoted in educational policy are not the result of debate or consensus.

The above discussion on the trends toward individualized instruction, cyber-schools, and increased technology inputs suggests that pedagogical imperatives are not given a high cultural value in government policy. Government has placed its faith and the fate of Alberta students into technology. As Healey suggests, "There's so much of an element of faith here that demanding evidence is almost a sign of heresy" (1998, 19). What is it about traditional school that is inferior? Government is not citing any independent research supporting its position on technology. Furthermore, government is courting business to subsidize the cost of public education. I suggest that traditional schooling is considered inferior because it is too costly for a government informed by neo-liberal thinking. Spending on public services is ideologically discordant for a government that has demonstrated its disdain for the public good.

8.4 Recommendations: Challenges to *Meeting the Challenge*

I have suggested that government policy sets out certain problems and certain solutions to solve them. I have also shown how policy works ideologically as a discourse to privilege the integration of technology while downplaying other social problems. The debate over computers in classrooms is ideological. The Klein government is committed to an ideology that reinforces inequality. Thus, on a provincial level, the most obvious recommendation to make would be to elect a new government. As Laxer points out, a

"democratically energized citizenry can achieve it-wage and salary earners will need to summon up their immense potential power" (1998, 256). The challenge remains to energize that citizenry when it is being lulled into complacency by the seductive message from business and government.

The next election may not yield the desired result. Policies may change, however. A point that comes through in the analysis of policy on technological integration is the absence of reliable research to either support or reject increasing technology inputs in public schools. To fill this void, I borrow a recommendation from Harrison and Kachur (1999, 181). They suggest a massive project examining the implications for educational institutions, teaching, and society at large of the increased use of technology at both the K-12 and post-secondary levels. But this policy study will face its own difficulties. As discussed in chapter seven, traditional and post-positivist approaches to policy assume the status quo. These approaches to such a study have the effect of reproducing the gaze and pre-empting other social problems. It seems unlikely that social critics such as Harrison and Kachur would be trapped by the limitations of these approaches. They would, however, be trapped by other circumstances. Another approach to policy study is critical but, by definition, unpopular and unacceptable. The third social scientific perspective, policy archeology, is dangerous to the social order. The challenge this type of study would face is in finding a source of funding. Considering the ideological context of Alberta, the request for such a study, from the point of view of this thesis, would be perceived as heresy and rejected. The suggestion of a policy study creates a dilemma. While reliable research is necessary on technology integration, the study would keep

technology in the spotlight, heightening its importance. On the one hand, if a study is conducted that is ideologically acceptable to the government, the results may be meaningless. But, some would argue, at least a study was done. On the other hand, a critical study would provide meaningful answers but faces serious obstacles in commencing or being considered by a neo-liberal agenda.

The question remains. Is there space for meaningful reform when it comes to technology integration, public schooling, and hegemonic discourses? The research has demonstrated that the push for technological integration may be more to deprofessionalize teachers, build a market for the surfeit of information, or to provide contracts for computer companies. These alternative arguments become more convincing as my colleagues and I struggle to make meaning out of *Information and Communications Technology: An Interim Program of Studies*. It is the only curriculum document that does not provide a scope and sequence to guide planning. A scope and sequence document was produced at a staff meeting but it was a commercially produced resource. It seems that schools have to pay in order to teach a government mandated curriculum. The market-metaphor argument emerges. No additional time is allotted to achieve its outcomes. Technology is to be smoothly "integrated" while teachers have to somehow familiarize themselves with the outcomes, learn about the software to achieve those outcomes, and fashion projects to reflect those outcomes. There are teachers who are quite proficient with the technology and have created student projects that require certain software applications. The majority of teachers on staff at my school reject the requirement of becoming an "expert" in technology in order to teach their students. One

hour was spent at a staff meeting discussing how to organize the upcoming year so that the technology outcomes could be accommodated. One colleague commented, "we've all never sat around discussing science outcomes...why are we all doing this now?"

While only a proposal for further research, these questions and my own, signal potential for a "citizens'" agenda to emerge. But given the lack of a broad response may I suggest that the government allow for a merging of two discourses: a humanistic and democratic one with a technocratic and individualistic one. If the government wants to computerize education, it must provide the time in the school day and the funds to do so. I recommend the creation of a position called the teacher-technologist. Funding must be on-going and tailored to the individual needs of the school. Funding must be sufficient to accommodate the need for an on-site technical expert much like a teacher-librarian. The teacher-technologist would be a certified teacher but would not be encumbered with teaching any other classes than those necessary to train students and willing teachers to work with the software. He or she must be available to recommend projects, pilot resources, and repair any inevitable computer malfunctions. It is otherwise untenable to achieve the desired outcomes of an entire program of studies without the time and the personnel to do so. The fact that the government is negligent in addressing these needs reinforces the idea that policy on computer integration is an abandonment of public interest.

However, I recognize the shifts in class relations at classroom, school, and district levels this position would entail. This position implies an increase in the division of labour among teachers. This division may bring with it a new hierarchy, effects of which

are unknown.

The teacher-technologist is a Weberian ideal-type. It also possesses characteristics that seem oppositional. I offer this metaphor as a teacher's response to the policy to create more space for teachers to be consulted on educational restructuring. As a teacher, the teacher-technologist would be aware of the social regularities that often block teachers from reaching their students. As a technologist, he or she would be capable of using the technology in light of those regularities. I suggest this ideal-type as a starting point to reconcile the difficulties that regularities of class, governmentality, professionalization, and choice are posing to the academic and socio-economic success of my disadvantaged students. This teacher would then act as a bridge between the two sides of education: the humanistic and technocratic. Along with being a bridge, the teacher-technologist is a carrier of an emancipatory critique of neo-liberal ideology and practice. The teacher-technologist may provide an escape from the techno-determinist discourse by embodying two seemingly contradictory roles: one of teacher and one of technologist.

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