education policy analysis archives

A peer-reviewed, independent, open access, multilingual journal

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Arizona State University

Volume 19 Number 26 September 20th, 2011 ISSN 1068-2341

Locating Leadership: The Blind Spot in Alberta's Technology Policy Discourse

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Citation: Brooks, Ch. (2011) Locating Leadership: The Blind Spot in Alberta's Technology Policy Discourse. *Education Policy Analysis Archives,* 19 (26). Retrieved [date], from http://epaa.asu.edu/ojs/article/view/910

Abstract: Over the last 20 years, technology and education policy discourse in Alberta, Canada has been philosophically polarized and dominated by value-neutral ways of thinking about technology (Brooks, 2011). While technology policy implementation has significant ramifications for schools and systems, for much of this time, system leaders, specifically the College of Alberta School Superintendents, (CASS), did not engage the discursive circle. This paper identifies a probable rationale for the historic lack of engagement in technology and education policy by CASS. Concluding discussion offers reasons for and early impacts of CASS' first formal move into provincial technology policy discourse *System Leadership for Learning Technology Success*.

Key words: Alberta, Canada; 1990-2010, provincial education policy, critical discourse analysis, 21st century learning, leadership.

Localizando el Liderazgo: El punto ciego en el discurso sobre Política Tecnológica en Alberta

Resumen: Durante los últimos 20 años, el discurso sobre tecnología y política educativa en Alberta, Canadá ha sido filosóficamente polarizado y dominado por

Manuscript received: 2/7/2011
Revisions received: 4/21/2011
Accepted: 5/12/2011

perspectivas que presuponían ser neutrales en cuanto a sus valores para pensar acerca de la tecnología (Brooks, 2011). Mientras que las políticas de implementación de tecnologías tiene importantes ramificaciones en las escuelas y sistemas, por buena parte de este período, las líderes del sistema, específicamente el Colegio de Superintendentes de Alberta (CASS), no participó de ese proceso discursivo. Este trabajo identifica una de las posibles razones por la cual CASS mostró una falta de compromiso con la educación y la política tecnológica. Finalmente se ofrecen razones y los impactos de primer movimiento formal de CASS de intervenir en el debate sobre política tecnológica provincial a través de la iniciativa Sistema de Liderazgo para el Aprendizaje de Tecnología con Éxito (*System Leadership for Learning Technology Success).*
Palabras clave: Alberta, Canadá, 1990-2010, la política educativa provincial, el análisis crítico del discurso, el aprendizaje del siglo 21, el liderazgo.

Localizando a liderança: o ponto cego no discurso da política de tecnologia em Alberta.

Resumo*:* Nos últimos 20 anos, o discurso da política tecnológica e educacional em Alberta, Canadá, tem sido polarizado filosoficamente e dominado por modos de pensar a tecnologia independentes de um sistema de valor (Brooks, 2011). Embora a implementação da política de tecnologia tenha importantes ramificações nas escolas e sistemas, na maior parte deste tempo, os líderes do sistema, especificamente o *College of Alberta School Superintendents, (CASS),* não se envolveu no círculo discursivo. Este artigo identifica uma possível explicação para a histórica falta de envolvimento na política de tecnologia e educação pelo CASS. A discussão final ressalta, apresenta razões e impactos iniciais do primeiro movimento formal do CASS em direção ao discurso da política de tecnologia local através de a iniciativa Sistema de Liderança para Aprendizagem de Tecnologia com Sucesso (*System Leadership for Learning Technology Success*).
Palavras-chave: Alberta, Canadá; 1990-2010; política de educação local; análise crítica do discurso; aprendizagem do século XXI, liderança.

Introduction

While Alberta has made significant investments in technology and related curriculum and resources over the years, information and communication technology (ICT) integration has occurred on a broken front (Hollingworth, 2004). Throughout this time, a value-neutral way of thinking about technology (i.e. deterministic/instrumentalist) has dominated the education and technology policy discursive field in Alberta (Author, 2011). Interestingly, system leaders, namely the College of Alberta School Superintendents (CASS), have been historically silent on policy pertaining to technology and education policy.

My purpose in this paper is three fold, 1) briefly describe the technology and education discursive field in Alberta, 2) offer a policy-based reason for the historic reluctance of system leaders (CASS) to offer a position or guidance on technology and education policy, and 3) highlight reasons for and possible implications of CASS' entry into the education and technology policy discursive space through a bold new initiative, *System Leadership for Learning Technology Success* (College of Alberta School Superintendents, 2010b).

CASS' recent work in the area of technology and education policy is worth noting for three reasons. First, it is the first formal position on technology in education by CASS. Second, the initiative was launched in response to the growing emphasis on 21st century

learning from the education community and specifically a need to re-examine the what, how and why of learning in a digital age (Clifford, P., Friesen, S., & Lock, J., 2004; Moyle, 2010). Thirdly, CASS' *System Leadership for Learning Technology Success*, the Twelfth Dimension in their Moving and Improving Framework, stands in contrast to the dominant discourse that has shaped implementation to date and instead endorses a socially situated way of thinking about technology (College of Alberta School Superintendents, 2010b).

I begin with a brief overview of the education and technology policy discursive field in Alberta, then move to identifying possible reasons for the lack of engagement by system leaders before concluding by discussing CASS' latest technology leadership initiative relative to Feenberg's (1996) critical theory position.

Technology and Education Policy Discourse in Alberta

Alberta, with 2000 schools and 35,000 teachers, is a Canadian province of interest because it strives to be and is viewed as a leader in education and has allocated significant resources to supporting a systemic approach to technology in education. Alberta Education's vision statement, "to be the best K – 12 education system in the world", is ambitious and sets a competitive tone (Alberta Education, 2008a, p. 2). Results from national and international tests, such as the national School Achievement Indicators Program (SAIP) and the Programme for International Student Assessment (PISA), indicate Alberta is indeed often one of the best education systems (Alberta Education, 2007a; Alberta Education, 2008b). Alberta's reputation for high quality education has created interest from other countries. Also, in July of 2009, Minister Hancock was the only Canadian education minister to receive an invitation to an international roundtable designed to share best practices along with representatives from Australia, China, Hong Kong, Singapore, Sweden, the United Kingdom and the United States[1].

Alberta has amassed the political will and resources necessary to address three core areas of technology in education: infrastructure (hardware and software), curriculum and resources, and professional learning. Several large-scale provincially funded and supported infrastructure projects, such a SuperNet, LearnAlberta, videoconferencing and the Microsoft license (Alberta Education, 2007b), have provided schools with access to broadband, resources and applications (Appendix A). In terms of curriculum and resources, Alberta's ICT and Career and Technology Studies curriculum, along with the Teaching Quality Standard, place an expectation on teachers to apply a variety of technologies to meet the mandated learning outcomes across the curriculum, within specific courses of study in junior and senior high school and generally to meet the students' diverse learning needs. Recently, the Principal Quality Standard was revised to include a technology leadership dimension requiring principals to "recognize(s) the potential of new and emerging technologies, and enable(s) their meaningful integration in support of teaching and learning" (Alberta Education, 2009, p. 5). In addition, all jurisdictions have at least one technology director reporting to the superintendent responsible for, in some cases, all aspects of technology integration. For these reasons, Alberta's bold technology agenda in education makes it a rich site of study with the potential to inform future policy development and implementation.

[1] The event was hosted by Singapore's Minister of Education Dr. Ng Eng Hen and Sir Michael Barber, co-author of "How the World's Best Performing School Systems Came Out on Top" (Barber & Mourshed, 2007).

However, despite strong leadership from Alberta Education and a significant financial investment, upwards of $1.5 billion, technology integration in Alberta remains illusive (Alberta Teachers' Association, 2009, p. 4). In a 2004 study, Hollingsworth set out to gauge the current state and needs regarding technology integration by surveying educational leaders at the system and school level. The results are unsettling especially for province renown for being at the forefront of innovation and transformative change through ICT (Alberta Education, 2008c).

> …significant variance exists across the province in effectiveness at integrating ICTs. Fifteen percent of respondents indicate their district is weak or very weak at integrating ICTs. Another fifteen to twenty percent indicate they are undecided whether their district is strong or weak in this area. (Hollingsworth et al., 2004, p. 30)

Alberta has invested millions of dollars in ICT and has yet to realize a return in terms of enhanced learning. During this time, policy discourse endorsed a way of thinking about technology as a tool with seeming universal application. This dominant discourse drew a strong connection between technology infrastructure, simply the physical presence of technology, and improved student learning with less consideration for the social context of the classroom. It appears likely this stance dissuaded educational leaders from actively engaging in technology policy discourse and instead taking a sideline approach to ICT integration in schools. Thus as calls for the transformation of education through technology become ever present, it is fruitful to consider what ways of thinking about technology are at work in education policy.

The Literature and Theoretical Frame

In adopting a critical theory stance, my philosophically-rooted study of technology policy adds to a considerable, oft ignored, body of work critically examining technology in education and society (Bowers, 2000; Burbules & Callister, 2000; Feenberg, 1991; Ferneding, 2003; Franklin, 1999; Moll, 1998; Robertson, 2003) Technology in education, in this view, needs to be examined not as purely instrumental or neutral but rather as a part of the framework for a way of life in our schools (Blacker, 1994; Feenberg, 2003). The increasing prevalence of technology and the commensurate reliance on technology in our education system, accentuates the need for considering technology as a social mediator and not only as a technical tool. While technology connects us to our world, it also changes us and our world often in ways we cannot anticipate.

Alberta's education system, like many others, is in the midst of a transformation as it attempts to keep step with the realities of a technology-mediated world (Alberta Education, 2010). Through a focus discourse, which examines the integral relationship between language, sense making and values, my inquiry acknowledges the increasing importance of language use in post-modern society.

> …(T)he language element has in certain key respects become more salient, more important than it used to be, and in fact a crucial aspect of the social transformations which are going on – one cannot make sense of them without thinking about language. (Fairclough, 2003, p. 203)

How we write and talk about technology in education is worth examining because it frames, constructs and becomes a part of what it is we want our schools to be like and how we want our students to experience learning. From a critical theory perspective, I examine how some ways of thinking about technology become more pervasive than others (Fairclough, 2001).

Ways of Thinking about Technology

Education policy documents contribute to, in varying degrees, setting provincial direction, supporting implementation of policy directions within jurisdictions and potentially influencing public discourse. The way of thinking about technology endorsed in and through education policy influences how technology is taken up in schools.

> Even the most valid aims which can be put in words will, as words, do more harm than good if it is not recognized that they are not aims but rather suggestions to educators about how to observe, how to look ahead and how to choose in liberating and directing the energies of the concrete situations in which they find themselves. (Dewey, Boydston, & Hook, 1985, p. 160)

Education policy does just that, whether we are aware of it or not. Thus, by examining technology in education through a philosophical lens we are able to lay bare the assumptions guiding decision-making and ultimately shaping teaching and learning. Feenberg's model (1999), by delineating the role of human action and the neutrality of technology, meshes well with my central concern in discerning the assumptions and beliefs about technology in education policy. Feenberg's model (1999) serves as a lens through which to roughly classify the philosophical positions of the organizations present in the data.

Table 1
Feenberg's Table of Philosophical Positions (1999, p. 9)

Technology is…	**Autonomous**	**Humanly Controlled**
Neutral (complete separation of means and ends)	Determinism (traditional Marxism)	Instrumentalism (liberal faith in progress)
Value-laden (means forms a way of life that includes ends)	Substantivism (means and ends linked in systems)	Critical Theory (choice of alternative means-ends systems)

Instrumentalism, occupying the top-right quadrant, adopts a user-directed, tool-view approach to technology. Feenberg (2003) refers to instrumentalism as the "standard modern view" originally taken up by the philosophers and scientists during the 18th Century Enlightenment (p. 6). Here, technology is a neutral instrument designed to solve a problem. The technology improves our ability to complete a task and meet our needs. Instrumentalism takes an empirical approach to the interaction between technology and the

world and attempts to quantify the usefulness or impact of a technology. As such, any given technology is thought to have fairly consistent determinate effects regardless of the context. Two assumptions ground this position: 1) technology is non-mediating and 2) humans control ends. "(I)t is normally assumed that the particular technology (mobile phones) operates in a more or less uniform manner in different social settings (Introna, 2007, p. 12). The tool view tends to foreground the capabilities of a technological device while deemphasizing the effect on the social world in which it operates. Feenberg (2003) argues instrumentalism and a liberal faith in progress have dominated Western conceptions of technology until recent years.

In the top-left quadrant, technological determinism also conceives technology as value-neutral but rejects the notion of human control. Technology shapes society based on the natural requirements of progress. Two major assumptions ground this philosophical position: 1) technology develops according to a fixed, direct and inevitable course and 2) society must respond and be organized around technological developments. Darwin (1958) is often associated with technological determinism as he viewed technology as grounded in natural laws and progress. For Darwin, technological development meets human needs and extends our ability to engage the environment based on improved knowledge of the natural world. Progress, realized through improved efficiency, is the shared guiding principle of nature and technology. Two assumptions anchor determinism: 1) technology is uncontrollable and 2) technological development occurs in a predictable, evolutionary manner ensuring progress. Determinism, in either interpretation, is limited as it denies the possibility of human agency. There is little room to engage technological change as we are but spectators.

Substantivism is more complicated in that although, like determinism, technology is considered autonomous, it is also value-laden. As such, when we choose to use a specific technology for a specific purpose we accept the inherent good or bad qualities or forces, which remain hidden by rationality and efficiency, of that technology. Max Weber's theory of rationalization provides a foundation for substantivism. Weber (1958) describes the plight of modern societies as doomed by the increasing technical control of the social world embodied in the "iron cage" of bureaucracy. For Weber, technology secured rational order thereby enlisting human beings as cogs in the bureaucratic machine or objects similar to raw materials and the natural environment. Substantivism is based on two assumptions: 1) technology shapes society more than society shapes it and 2) technology holds some inherent values.

The critical theory quadrant accepts technological design, development, and use is controllable by humans and reflects the values of the social context. So whereas substantivism tends towards a sense of inevitability, critical theory leaves room for the potential for human agency and choice. Hickman (2006) traces the evolution of the critical theory philosophy of technology through Marcuse and Foucault concerned with "emancipation from instrumental rationality as an ideology" to Feenberg's interest in "problems of technoscience not separate from, but as part of social life" (p. 72). From this position, technology is enmeshed in modern society effectively negating the possibility for critique and the whole system, the values, beliefs and attitudes, must be examined, reoriented or dismantled. Three beliefs underlie Feenberg's (2003) interpretation of critical theory of technology, values embodied in technology are socially specific and not narrowly limited to efficiency or control technology, technologies offer frameworks for ways of life and the design and configuration of technology does not only meet our ends; it also organizes

society and subordinates members into a technocratic order.

Data, Method and Findings

Critical discourse analysis (CDA) was employed to examine policy, related documents and interview data (Appendix C & D) to excavate the common sense notions about technology in education policy discourse of four groups, 1) Alberta Education (government), 2) the Alberta Teachers' Association (ATA - teachers), 3) the College of Alberta School Superintendents (CASS - school system leaders) and the Alberta School Councils' Association (ASCA – parents).

CDA is situated within the hermeneutic tradition and combines critical social theory and linguistic theory to examine the relationship between language, meaning and the social world (Bakhtin, 1981; Pêcheux, 1982; Rogers, 2004). CDA, when applied to education policy discourse, reveals why and how some ways of thinking about technology are more prevalent than others.

CDA is systematic, yet it is not formulaic. For example, Fairclough's (2003) analytic model moves through the local, institutional and societal domains to describe, interpret and explain discursive relations and social practices. "This recursive movement between linguistic and social analysis is what makes CDA a systematic method, rather than a haphazard analysis of discourse and power" (Rogers, 2004, p. 7). Similarly, my analysis moves between local (policy documents and interviews), organizational discourses (prominent discourse) and societal domains (nodal or master discourses).

Nodal discourses, or master discourses, have no affinity with a particular group or sector and function as generic, common sense representations of reality. Fairclough coined the term nodal discourse as dominant discourses which "subsume and articulate a great many other discourses" (2005, p. 5). As hubs of meaning, nodal discourses, demonstrate how beliefs and assumptions "emerge…(and) also produce, particular policy discourses" as words and phrases are paired repeatedly to convey meaning, increase awareness and import (Blackmore & Lauder, 2005). Those prominent organizational discourses that align closely with nodal discourses are most likely to achieve dominance in the main.

The method I employ includes the following three steps, 1) identify, analyze and group assumptions into prominent organizational discourses based on occurrence of key terms[2], 2) align prominent discourses with four categories, instrumentalism, determinism, substantivism and critical theory philosophical position (Feenberg, 1999), and 3) analyze prominent organizational discourses to ascertain correlations with two nodal or master discourses (e.g. the knowledge-based economy and globalization) (Fairclough, 2006). Thus, the method utilized reveals the prominent organizational discourses, through which groups define themselves and reinforce their values, then analyzes each to ascertain a correlation with nodal discourses. CDA provides a basis for revealing prominent organizational discourses and considering how some become more salient and therefore dominant than others.

[2] I concern my examination specifically with those assumptions relating to key terms as a consistent and relevant way to flag the data (Appendix B). The habitual occurrence of words provides a basis for determining the relevance. Simply, when the key words appear repeatedly in relation to technology they can support assumptions by "encod(ing) commonly accepted ideas" (Stubbs, 1996, p. 5).

Table 2
Feenberg's Table of Philosophical Positions (adapted, 1999, p. 9)

Technology is…	**Autonomous**	**Humanly Controlled**
Neutral	Alberta Education	
(complete separation of means and ends)	Determinism (traditional Marxism)	Instrumentalism (liberal faith in progress)
Value-laden	Substantivism	Critical Theory
(means forms a way of life that includes ends)	ATA & Alberta School Councils' Association	
	(means and ends linked in systems)	(choice of alternative means-ends systems)

The table above illustrates the prominent organizational discourses of Alberta Education and the ATA do not affix to one quadrant but remain within the neutral (Alberta Education) or value-laden (ATA) sections of Feenberg's table. Two specific illustrative examples demonstrate the contrasting positions of Alberta Education and the ATA.

First, the deterministic quadrant includes assumptions holding technology as value-neutral, like instrumentalism, but outside of human control. Technological development is shaped by the natural requirements of progress. Alberta Education's Learning and Technology Policy Framework contains a prominent discourse associating technology with progressive change and the new economy (Alberta Education, 2004). Technology infrastructure in education is conceived, in this view, as integral to achieving efficiencies and accelerated growth of the economy. Here, several assumptions link technological development with enhanced economic growth neutrally and autonomously. "The availability of ICT offers great opportunities to enhance the speed with which knowledge is exchanged and thus contributes to increased competitiveness through innovation" (Alberta Education, 2004, p. 19). Technology is considered essential to fostering a thriving research community vital to future economic growth. In the new knowledge based economy "(i)nnovation and knowledge creation are essential to the prosperity of all Albertans" (Alberta Education, 2004, p. 19). Thus the prominent discourse evident in the Learning and Technology Policy Framework (2004) focuses specifically on progress by linking innovative use of technology in education to economic growth.

In contrast, from a substantivist position, technology is considered autonomous and value-laden. The positive and negative interpretations of substantivism diverge sharply around whether either aspect, lack of control and inlaid values, will result in improving rather than destroying society. The prominent discourses evident in this quadrant are drawn exclusively from the ATA documents and adopt a negative interpretation. The ATA's Changing Landscapes document contained a prominent discourse associating technology with identity and the social world with an emphasis on the erosion of community (Alberta Teachers' Association, 2008). Various headlines featured in the ATA's Changing Landscapes document include assumptions, supporting the identity and the social world prominent discourse, accentuating a negative position by suggesting technology is eroding our democratic community and contributing to or causing a variety of social and environmental problems. These headlines, while acknowledging the connective capability of the Internet

and social networking sites, use a questioning tone and negative connotations to convey a sense of apprehension or at least skepticism about the quality of communication online. For example, swarm intelligence is used in reference to social networking sites and compared to the collective, decentralized behavior of ant colonies (Alberta Teachers' Association, 2008, p. 14). Even if the reader is not familiar with this field of research, the word swarm itself denotes primitive thought processes bound by natural laws and instinct rather than rational thought. Linking the notion of swarm with the 'wiki world' underscores a substantivist stance by suggesting intelligence and the quality of what is considered worthy to our collective knowledge is no longer fixed and empirical but relative, superficial and constantly in flux.

These two examples are indicative of a consistent pattern in technology policy discourse in Alberta as the ATA moves between substantivist and critical theory positions and Alberta Education between instrumentalist and determinist positions. While the presence of ASCA in the critical theory position appears to tip the balance in favor of a value-laden position, the value-neutral view of technology dominates the discursive field due to the strong correlation with the nodal discourses (e.g. knowledge based economy and globalization) (Peters, 2001; Fairclough, 2006).

CASS does not appear in the table above because aside from a few informal statements on technology and education policy during the last 20 years, CASS has not articulated a formal position on technology and education. This is curious since CASS has offered strong responses against some policies and initiatives in the past.

Including CASS' position on technology and education policy is natural given the organization represents a group of influential senior leaders in education charged with, among many other things, the implementation of technology policy. CASS' mission statement defines the organization as "the professional voice of system education leaders, provides leadership, expertise and advocacy to improve, promote and champion public education" (College of Alberta School Superintendents, 2011). I turn now to discuss the policy-based reason for the historic reluctance of system leaders (CASS) to offer a position on technology and education policy and highlight evidence of emerging activity.

Discussion

A Blind Spot in Alberta's Education and Technology Policy

The prevalence of a value-neutral way of thinking about technology and education policy conceptualizes technology as a 'tool' associated with positive notions of progress and improvement in student achievement. Thus, it is possible system leaders were dissuaded from engaging in technology policy implementation due to the assumed connection between technology and improved student learning outcomes. One could also suggest CASS' silence is not indicative of any particular stance with respect to technology, but rather to a lack of interest or perhaps relevance to the core work of superintendents. Both explanations are possible and natural outgrowths of existing policies relative to accountability.

In Alberta, superintendents publicly report on the performance of their system through the Accountability Pillar a "mechanism to collect standard-based data for the public to compare and evaluate each district on the same measures while also assisting jurisdictions in identifying areas and strategies for improvement" (Alberta Education, 2006). Provincial achievement test results, as measures of student learning, draw the most attention, as opposed to satisfaction survey results, from the public, principals and parents. Provincial

achievement tests measures improvements in student learning, for the most part, through traditional assessment methods, (e.g. standardized, paper and pencil tests). To date, research has failed to prove a direct correlation between technology integration in learning and student achievement on standardized tests (Ravitz et al., 2002; Papanastasiou et al., 2003; Wenglinsky, 1998). Herein lies a potential disconnect.

In education policy discourse, 21st century learning offers a response to the what is learning question and reflects a move away from learning as transmission by promoting inquiry-based learning and the development of higher order thinking skills (Clifford, Friesen, & Lock, 2004, Kozma & Shank, 1998, Moyle, 2010). Although technology has been shown to enhance student learning, it also provides more ways for students to engage in learning and demonstrate understanding, hence less of a focus on rote memory tasks and more of an emphasis on the construction of knowledge through application.

> Moves to increasingly constructivist or inquiry-based ways of teaching, or efforts to persevere with learning new technologies are frequently undermined by the perceived impossibility of reconciling standardized examination and curriculum coverage pressures with technology integration. In these cases, the prevailing understanding is that what gets tested gets priority (Clifford, Friesen, & Lock, 2004).

The educational reforms calling for 21st century learning are out of sync with 20th century accountability mechanisms (Russell & Haney, 2000). Thus, a potential mismatch is evident between how technology enhances student learning and how Alberta's Accountability Pillar measures student learning offers a potential reason for a lack of engagement in technology policy discourse by CASS.

In sum, superintendents lack of involvement or interest in technology policy discourse may be due to their professional responsibility to attend to Accountability Pillar measures which fail to consider the ways in which technology can influence the what, why and how of learning in the 21st century. However, recent developments suggest system leaders are beginning to formally and for the first time engage in technology and education policy discourse. I turn now to highlight reasons for and possible implications of CASS' entry into the education and technology policy discursive space through a bold new initiative, *System Leadership for Learning Technology Success* (College of Alberta School Superintendents, 2010b). It is intriguing to note this initiative was launched weeks after Alberta Education significantly cut the accounting and reporting division signaling an need to re-imagine how the province assesses student learning (Couture, J. C, 2010).

Emerging Leadership: CASS Engages Technology Policy Discourse

In the spring of 2008 the CASS Framework for School System Success, with 11 Dimensions, was released after extensive consultation with educational leaders across the system (College of Alberta School Superintendents, 2009). The Framework, part of CASS' Moving and Improving initiative, is a synthesis of relevant research and practical experience and expertise gleaned during the consultation phase and is intended to serve as a guide for improving the performance of school systems.

The Moving and Improving initiative included pilot projects throughout the province and is based on a guiding document, A Framework for School System Success. The Framework "is intended to help guide current and future school district practices that aim to improve student learning through actions at the school district level" (College of Alberta

School Superintendents, 2009b, p. 4). At the time, 2009, the Framework included the 11 Dimensions related to a systemic approach to improving student learning (Appendix E).

The Moving and Improving document did not discuss technology in relation to the 11 Dimensions, but does include three periphery references to technology: to improve communication with parents, to improve teacher retention and one of the pilot project leaders notes, "(i)n the Twenty-first century classroom, a distributed learning environment supported by technology is also of prime importance" (College of Alberta School Superintendents, 2009a, p. 69).

In addition, the summary notes from CASS' roundtable discussions regarding the Framework point to a need, by at least one member, for CASS to include a clear position on technology and learning.

> While not loud, a voice present at a number of discussion tables questioned the absence of, or reference to, new learning technologies in the CASS Framework. The point made was that new learning technologies are an increasingly important part of the 21st century classroom. Leadership practices need to embrace these new technologies if Instructional Leadership is the goal (College of Alberta School Superintendents, 2009b, p. 8).

This comment succinctly captures the growing emphasis on 21st century learning strongly supported by the local research community (e.g. most prominently, Dr. S. Friesen, University of Calgary), and several high profile initiatives, for example, Alberta Education's Inspiring Education initiative (Alberta Education, 2010) and the ATA's The courage to choose: Emerging trends and strategic possibilities for an informed transformation in Alberta's schools 2010-11 (ATA, 2010).

In response to mounting focus on 21st century learning, Dr. Jim Brandon, then Director of Leadership Capacity Building for CASS, brought together individuals connected with related 21st century learning initiatives and research to inform the development of a new Twelfth Dimension, *System Leadership for Learning Technology Success*, for addition to the CASS Framework for School System Success (College of Alberta School Superintendents, 2010b). This document is the first formal statement about technology in education by CASS.

The initial draft guides system leaders to consider technology within four components each based on research and practical wisdom, a shared vision of 21st century learning and teaching, transformational school and system leadership, IT Governance and school systems as knowledge-building organizations (College of Alberta School Superintendents, 2010b). Initial consultations have garnered support and spawned the creation of a cohort group of system leaders to share experiences, research and practical expertise in relation to the Twelfth Dimension (College of Alberta School Superintendents, 2010b).

I move now to trace Feenberg's critical theory approach to technology in the components of CASS' Twelfth Dimension. In utilizing a value-laden philosophical position CASS has positioned technology as integral to the school system through an emphasis on 21st century learning (O'Dwyer, L., Russell, M., & Bebell, D. J., 2004).

Tracing the Critical Theory Philosophical Position in CASS' Twelfth Dimension

First, in the Twelfth Dimension CASS recognizes the changing social context of our time and calls upon system leaders to foster "the mindful infusion of networked digital technologies leading to rich, robust and meaningful learning" (College of Alberta School

Superintendents, 2010b). CASS, by placing the consideration of technology within the context of 21st century learning and transformational change, requires system leaders to not view technology in isolation, outside of the social context, and rather as part of the contemporary way of learning and interacting with the world. This approach is in keeping with Feenberg's suggestion to consider technology within the social realm.

> Technology is not the product of a unique technical rationality but of a combination of technical and social factors. The study of these factors must include not only the empirical methods of social science but also the interpretive methods of the humanities in order to get at the underlying meaning of technical objects and activities for participants. Meaning is critically important insofar as technical objects are socially defined. (Feenberg, 1996)

Thus, while the technical aspects need to be brought to bear, educational leaders must also consider how a technology will influence how students and teachers work together. Carefully considering what teaching and learning will look and sound like after a technology is introduced necessary situates the decision-making process within a pedagogical frame. This more socially-situated and contemporary view of technology is evident in CASS' Twelfth Dimension which draws extensively on research relative to how students learn with and through technology and how teachers can create learning environments enabling students to construct knowledge in meaningful ways (Darling Hammond, 2008; Friesen, 2009; Koehler & Mishra, 2008; Lemke, et al., 2009; Sawyer, 2006, 2008; Scardmalia, et.al., 2010; Willms, Friesen & Milton, 2009).

Second, in the Twelfth Dimension CASS explicitly links technology to primary work of schools. "Senior school system leaders need to focus on the instructional core and the ways in which changes in emerging technologies impact, change, threaten, enrich or enhance the instructional core" (College of Alberta School Superintendents, 2010b). This statement reflects a shift from a focus on technology in isolation to a focus on how technology change student learning and teaching practices.

This shift is consistent with Feenberg's suggestion that technological change can no longer be solely viewed as part of a historical pattern of scientific developments or a natural course of progress always improving and enhancing society.

> Instead of regarding technological progress as a deterministic sequence of developments, we have learned to see it as a contingent process that could lead in many different directions. (…) (T)he illusion of neutrality and autonomy of the technical professions arises from the way in which they construct their history. (Feenberg, 1996)

In education, the notion of evergreening, the ongoing replacement of old technology with new, and the adoption of new, under-researched technology in schools both reflect deep-seeded historical belief in the natural and progressive evolution of technology. Challenging the assumed pairing of technology and progress will require studying how learning is changed by the introduction of a particular technology. In the Twelfth Dimension, CASS is acknowledging it is not enough to assume learning is enhanced because a school has been outfitted with interactive whiteboards and requiring system leaders to use discernment to ensure technology is more than a symbol of progress in schools.

Third, Feenberg also sees the need for decisions regarding technological developments to become a part of the democratic sphere. So while in the past, technical matters have been given over to experts (e.g. programmers, technicians), Feenberg suggests the public needs to become more informed and involved. "A technological society requires a democratic public sphere sensitive to technical affairs" (Feenberg, 1996).

In the case of education, teachers in classrooms are not often able to contribute to decision regarding the technology in schools and provincial directions. In taking up a more democratic approach, we assume the users can and should contribute to the design, development and implementation of technology. Feenberg notes as participants in the process, teachers and indeed students, are able to "perceive and actualize overlooked potentialities not envisioned in the technical, economic or political rationality already inscribed in the network. They give new meaning on the basis of a "situated knowledge" rooted in their unique relation to technology" (Feenberg & Bakardjieva, 2004, p. 16). In the Twelfth Dimension CASS draws upon Mirshra and Koehler (2006) work to underscores the value of this craft knowledge by describing effective technology integration as an:

> …intersection among the bodies of knowledge that are represented by pedagogical content knowledge, technology content knowledge and technological pedagogical knowledge. (College of Alberta School Superintendents, 2010b)

CASS acknowledges the "situated knowledge" within the Twelfth Dimension by opening up the discourse to include all the ways technology can change teaching and learning. CASS advocates for a more coordinated approach to technology decision-making with the shared understanding that "the superintendent's vision and the district IT leader's vision are articulated as part of the larger district vision" (College of Alberta School Superintendents, 2010b). CASS is articulated the need for superintendents, IT and ET directors to work in concert with teachers towards shared educational goals.

In sum, traces of Feenberg's (1991) critical theory approaches to technology are evident in CASS's Twelfth Dimension and may serve to open up a discursive space for educational leaders to engage technology policy and bring a less polarized approach to implementation. At the very least, changing concepts of learning should become a focal point in discussion about technology and educational change.

> Structures, practices and processes designed to educate students for an industrial society are major impediments. What remains clear is that while a significant amount of resources, in terms of hardware, software, networking, personnel and professional learning, have gone into the effective use of teaching and learning with technology over the past fifteen years, teachers and administrators, schools and districts, are still at the beginning stages of creating truly 21st century classrooms. (College of Alberta School Superintendents, 2010b)

While data on the impact of this new initiative has yet to be gathered, the emergence of a learning community including 17 school jurisdictions does point to a growing engagement in technology policy implementation by CASS' membership (College of Alberta School Superintendents, 2010a). One of the areas this group is beginning to examine is assessment, and specifically standardized testing, within the context of 21st century learning. Additionally, the group is underscoring the need for technology decisions to be made in

concert with educational goals. This is causing many districts to reconsider governance structures and hiring practices.

Conclusion

This paper sought to 1) briefly describe the technology and education discursive field in Alberta, 2) offer a policy-based reason for the historic reluctance of system leaders (CASS) to offer a position or guidance on technology and education policy, and 3) highlight reasons for and possible implications of CASS' critical theory based entry into the education and technology policy discursive space through a bold new initiative, *System Leadership for Learning Technology Success* (College of Alberta School Superintendents, 2010b).

In sum, Alberta's technology policy discourse in education has been marked by deterministic and instrumentalist assumptions which associate technology with societal progress and economic prosperity (Author, 2011). The issue, is not that there are differing philosophical positions, the field is richer and more challenging for them, but rather the issue is the dominance of one over others. Technology in education can no longer be considered a side project or the exclusive purvey of technical experts.

> The last twenty years in the philosophy of technology has been an attempt to think technology as something we do. The next twenty years must be an attempt to think meta-technology as something we are part of. (Mitcham, 1995)

CASS' Twelfth Dimension initiative, in concert with other provincial directions such as the inclusion of technology leadership dimension in the Principal Quality Standard (Alberta Education, 2009), the dissolving of the accountability and reporting division and an increasingly common appeal of 21st century learning (Alberta Education, 2010; Alberta Teachers' Association, 2010) has the potential to generate engagement of system leaders in education and technology policy discourse. Recent discussions with CASS have moved to considering the possibility of the Twelfth Dimension becoming a set or an overarching description for the other 11 dimensions.

During the last 20 years Alberta has blazed a trail of technology-led initiatives resulting in a robust technical landscape but only scattered change in teacher practice and enhancements to student learning. Now, the education community is under scrutiny as some established notions, such as how we measure and account for student learning, are being challenged. "Today's youth will inherit a global, socially connected, and media rich world. The competencies they require to live well differ from those even ten years ago" (Jacobsen & Friesen, 2010). This emerging reality is becoming a backdrop for system leaders to engage in technology policy discourse relative to the how, what and why of learning in a technology-mediated age.

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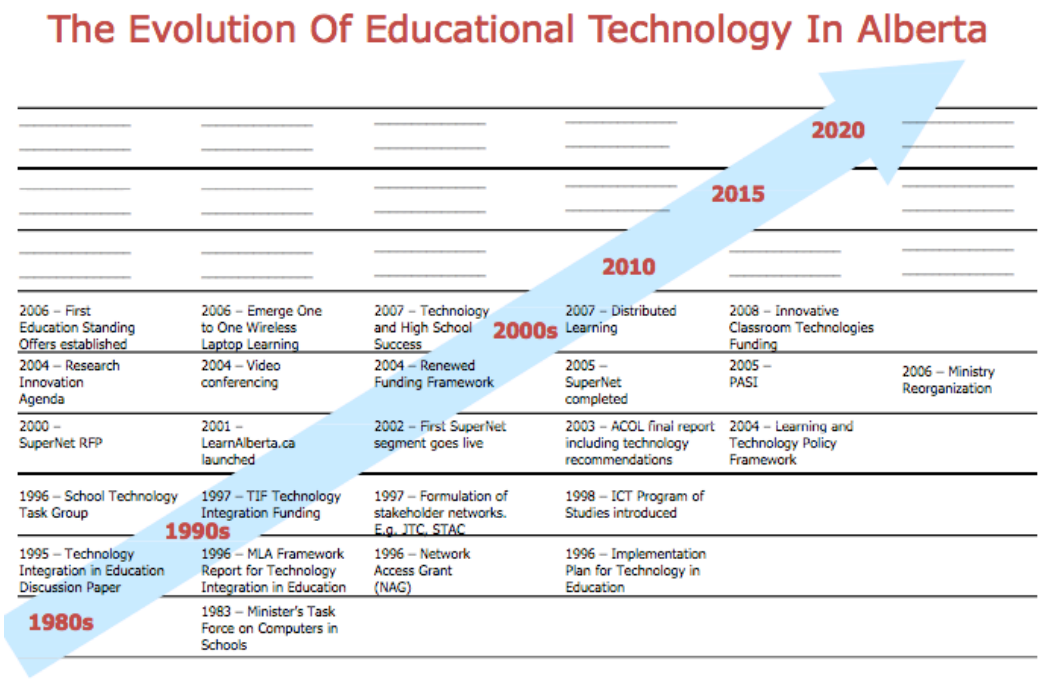
Appendix A

The evolution of educational technology in Alberta



Appendix B

Key Terms

The following terms associated with technology, education and change aided in the identification of assumptions pertinent to the inquiry and were selected based on three criteria: 1) literature (Burbules & Callister, 2000; Feenberg, 1991; Ferneding, 2003; Franklin, 1999; Kozma & Shank, 1998; Moyle, 2010; Somekh, 2000, Watson, 2006) 2) repeated occurrence across the data sample and 3) my professional experience.

- 21st century
- access
- accessible
- accountability
- any time, any place
- assistive
- broaden
- challenges
- choice
- collaboration
- compete
- connect
- contribute
- critical thinking
- delivery
- enhanced
- empower(ing)
- engage(ment)
- equitable
- flexible
- global(ization)
- improve
- information and communication
- innovative
- interconnected
- integration
- knowledge-based economy
- leader
- leading-edge
- opportunities
- responsive

Appendix C

Data Sources

Document	**Date**	**Section/Page Numbers**
Alberta Education: Primary Documents		
ICT Program of Studies	September 2000	Rationale and Philosophy
Learning and Technology Policy Framework	July 2004	Pages 1 – 4, 10 – 24
Business Plan, 2008 – 2011	March 2008	Pages 1 – 11
Alberta Education: Secondary Documents		
Calls for proposal – Implementation of technology mediated learning to improve student engagement and success in high school	September 2007	All
Media Release	April 2008	All
Alberta Teachers' Association: Primary Documents		
Technology and Education	1999, revised 2004, 2007	As relevant
Resolutions	2007 - 2009	As relevant
Alberta Teachers' Association: Secondary Documents		
Changing Landscapes of the Next Alberta: 2008 - 2028	2008	All
Alberta School Councils' Association: Primary Documents		
Resolutions	2006 - 2008	As relevant
College of Alberta School Superintendents: Primary Document		
Moving and Improving: Building System Leadership Capacity	2009	As relevant

Appendix D

Interview Participants

Participant	Former/Current Affiliations
(anonymous)	District Education Technology/Alberta Education
Pat Redhead	District Education Technology and Alberta Education/retired
John Percevault	District Education Technology
Dr. Maurice Hollingsworth	District Education Technology/Faculty Member, University of Lethbridge
Jacquie Skytt	Alberta Education/Alberta Teachers' Association
Edna Dach	Alberta Teachers' Association - Education Technology Specialist Council/District Education Technology
Michele Mulder	Alberta School Boards Association/Alberta School Council Association
Dr. Jim Brandon	Superintendent/College of Alberta School Superintendents

Appendix E

CASS' Moving and Improving Framework (original)

A. Vision and Direction Setting
    Dimension 1: Jurisdiction-Wide Focus on Student Achievement
    Dimension 2: Targeted and Phased Focuses for School Improvement
    Dimension 3: Strategic Engagement with the Government's Agenda for Change and Associated Resources
B. Organization Design and Alignment
    Dimension 4: Infrastructure Alignment
C. Capacity Development
    Dimension 5: Jurisdiction-Wide Sense of Efficacy
    Dimension 6: Investing in Instructional Leadership
    Dimension 7: Jurisdiction-Wide, Job Embedded Professional Development for Leaders and Teachers
D. Relationship Building
    Dimension 8: Building and Maintaining Good Relations
    Dimension 9: Engaging Parents
E. The Primacy of Curriculum and Instruction
    Dimension 10: Approaches to Curriculum and Instruction
    Dimension 11: Use of Evidence for Planning, Organizational Learning and Accountability

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education policy analysis archives

Volume 19 Number 26 September 20th, 2011 ISSN 1068-2341