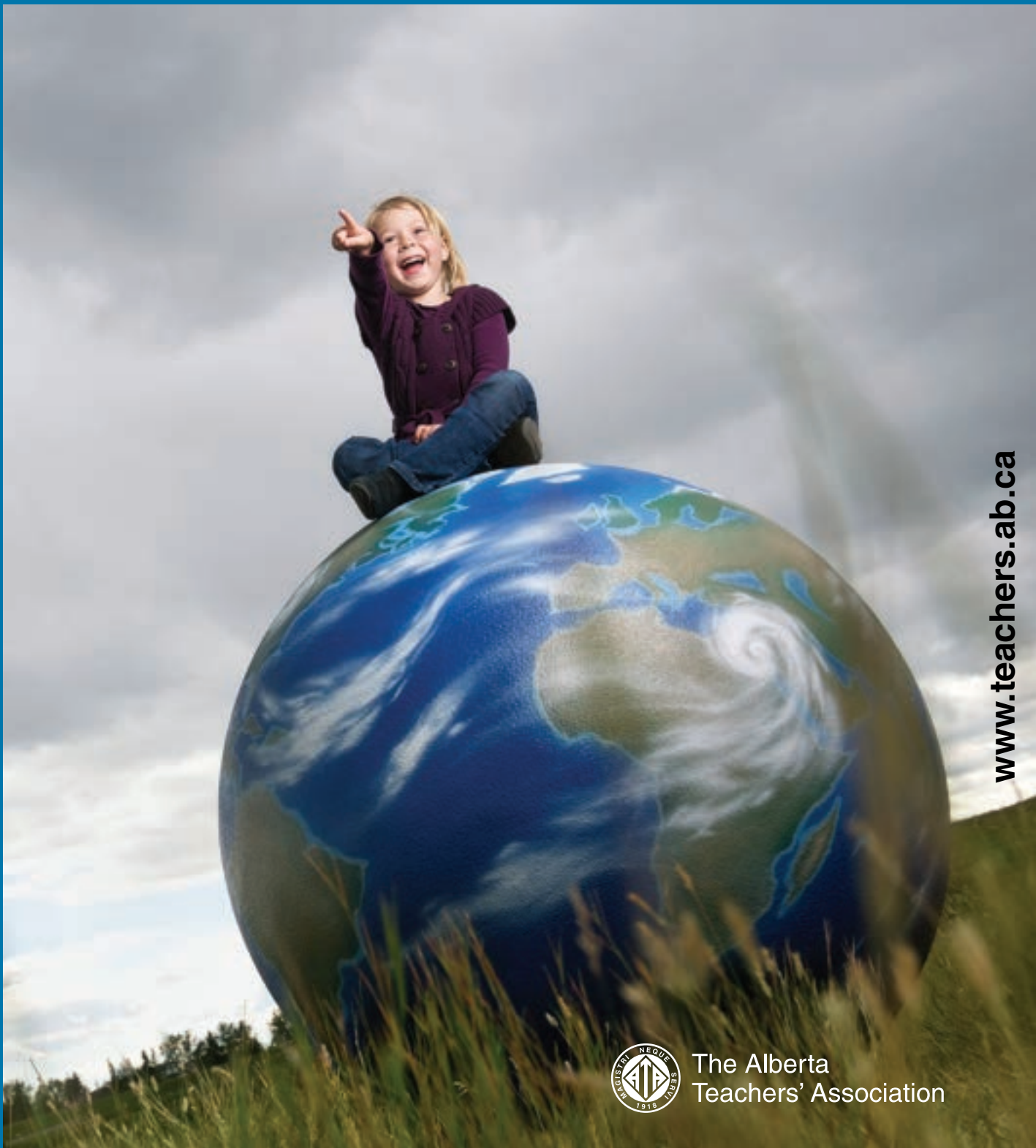


The Future of Teaching in Alberta

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Teachers' Association

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Foreword

Teaching is a paradoxical profession. Its essential qualities are eternal, yet it is always being subjected to change.

On the one hand, the virtues and values of teaching are timeless. They draw upon the things that bring teachers to the work and keep them there despite everything.

First and foremost, teaching is about caring for children—every last one of them in your classes. It's about passion for students' learning, for making the classroom a kind of magical kingdom for them even when you and they are tired, and for working at the edges of your own virtuosity with large groups of restless minds who all learn differently and who are constantly pressing for your attention.

For all the talk of high-yield pedagogies, evidence-based this and data-driven that, teachers somehow have to make all their insights and their expertise in the craft of teaching work in real and relentlessly insistent classroom environments, each and every day. While many scientists and statisticians want data and evidence to overtake teachers' classroom agendas and to make teaching more like medicine, these same reformers often have little regard for the unique dimensions of teaching that make it different from other professions. Unlike surgeons, for example, teachers work with patients who are standing up and very awake rather than lying down and fast asleep. While medical doctors have the luxury of working in multiple teams with single patients as they make their rounds, individual teachers are challenged to work with 20, 30 or even more patients, all at the same time, hour upon hour, day after day. And we ask them to do this year in, year out, for their entire professional lives.

Teaching properly understood, therefore, is a miracle and a marvel. Every day, groups of restless young bodies and minds show up at school with no particular predisposition to do what the teacher tells them. Yet mostly they do exactly or approximately what they are asked. How is this possible? It can occur only if we place the most skilled, inspirational, reflective and caring teachers into our schools. It can occur only if we do this not as an occasional wish or as a fortunate surprise but as a conscious commitment, always mindful of our great responsibilities as those entrusted with the education of the young.

And this is the joy of great teaching—to illuminate the mind, to create a learning environment where children and young people become totally lost in their explorations and ideas, and to win over troubled and truculent adolescents so that they feel pride in their accomplishments and become motivated to succeed.

If teachers are anything at all like medical practitioners, they are much more like family care physicians or expert nurses than they are like clinical surgeons. In very old age, both our mothers have been unfortunate enough to experience serious and sometimes unbearable discomfort and pain. Effective and humanistic nursing care has not been about administering this drug or that drug with proven clinical or surgical precision. It has been about finding out how the drug interacts with other drugs that our mothers were also taking, how the body resists and adapts to the treatments over time, and about how to balance the desire for pain relief with the distressing onset of extreme drowsiness or even confusion that comes from high doses of medication. It is about how to involve patients and their families in judgments about these decisions, how to deliberate about quality-of-life issues, and how to do all this in ways that preserve our mothers' basic dignity.

Extreme old age is rarely amenable to solutions administered with a scalpel, and neither, metaphorically speaking, is children's learning. This is not the tragedy of nursing or of teaching, but their essential and admirable character. Teaching is and should be informed by relevant evidence but, in the end, it deals with minds rather than brains, with whole children and not parts of them, with their lives as well as their learning. It deals with their aspirations for meaning and their quest to understand. Important as it is to learn scientific facts, memorize the conjugations of irregular verbs in a foreign language and grasp historical chronology, we value these components of education not so much as entities in themselves but as a lifelong experience of learning, puzzling and making meaning from our experiences.

To teach is to judge in situations that often lack certainty for both the student and the teacher. It is to be knowledgeable, have foundational understandings of content and children, have lots of practice, and

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have an inquiring stance and learning. Teaching as a vocation means that one must learn from fellow professionals and then apply the best practices and decisions possible, amid crowds of young people who compete for one's attention. Effective teaching is mostly about knowledge, capability, practice, inquiry, community, judgment and discretion—in the service of all kinds of children, including the most temperamental.

This is what the outstanding teachers who participated in the focus groups cited in *The Future of Teaching in Alberta* know, understand and cherish with a passion. It is what cultivates and keeps the high quality of teachers that define the Albertan teaching force in one of the very highest-performing jurisdictions in the world. It is also what brings both of us back to Alberta time and again so that we can describe its greatest innovations, such as the Alberta Initiative for School Improvement (AISI) to educators as far afield as Singapore, Australia, Norway and Chile.

Against and alongside all of this, teaching is also always changing and being asked to change by others. And those others are increasingly multicultural and multilingual, bringing their aspirations, cultures and questions to the successful mosaic that Canada is today. The demographic changes in urban Alberta that are described in *The Future of Teaching in Alberta* require teachers to respond to immigrant families and their children as other Canadian educators have done before them and also remind them of their responsibilities to learners in Aboriginal communities.

The scarred prosperity of Alberta's tar sands challenges teachers to ensure that the province's next generations will be motivated to turn this environmental stigma into an ecologically transformative and triumphal opportunity. And the turbulent oil market is making the province and its teachers more receptive to the global educational agenda of 21st-century skills that encourage schools to foster more flexibility, adaptability, creativity, teamwork and use of technology in the future workforce.

Yet we have no guarantees that the language of 21st-century skills will not exacerbate our most pressing problems. How should Alberta's teachers reconcile change with continuity? How can they preserve the timeless virtues of their profession,

while adapting to the emerging demands of the present? How can they capitalize on the best of the new technologies in terms of speed, accesses to information and efficiency, while avoiding the negative dimensions such as superficiality, distractedness and the erosion of personal relationships in real time?

The answer is that the best teachers, schools and systems know how to work with paradox. Whether they have studied the philosophy of education of John Dewey or not, they agree with Dewey that there is more to be gained by creative synthesis than by polarizing oppositions. Where others see either/or alternatives, they see both/and solutions.

One of the greatest strengths of Finland—the highest performer in the world outside Asia on the international PISA tests of pupil achievement—is that its high commitment to professional collaboration on curriculum design and its collective responsibility for students actually make it more competitive internationally. High levels of collaboration internally turn out to produce high levels of competitiveness externally.

Likewise, Singapore's high performance on international tests, as we have been finding in our study visits to the country, has a paradoxical dimension. It is defined by the nation's ability to capitalize on a triple ensemble: (1) technological innovation; (2) character development in relation to the local community, national identity and service to poorer surrounding countries; and (3) continuing strong performance on high-stakes testing. Much more is happening in Singapore than mere rote memorization.

Alberta's almost equally high performance on PISA—the strongest in Canada—has also been achieved in the context of test-driven accountability that operates alongside a widespread decade-long commitment to teacher-driven innovation promoted by AISI that will sadly soon lose 50 per cent of its funding in the province's coming fiscal year.

If Alberta is not careful, the province will join the world's least-appealing jurisdictions, which place so much faith in centralized mandates and surveillance that teachers and pupils themselves have little energy left to inquire after the most important issues in education. The human dimension of education, described so skilfully in *The Future of Teaching in Alberta*, can easily be abrogated when remote policy-

makers overreach themselves and turn principals into compliance officers and teachers into the passive transmitters of others' ideas.

If budget cuts prove economically necessary in today's economy, then accountability and innovation-oriented budget lines should be reduced in equal measure. Retaining rigorous accountability provisions while undermining the creativity and resourcefulness that is distributed throughout the province's thousands of schools is to build a road to nowhere. To do so is to weaken the paradox that is the province's ironic advantage as an educational high achiever. Cut back on innovation at the expense of accountability and you sacrifice long-term competitiveness for the unyielding and unappealing grip of short-term control.

This stellar document, from the Alberta Teachers' Association, reaffirms the timeless virtues of teaching while embracing and advancing the need to change the ways in which they are sometimes realized. Alberta's great strength as a global leader in educational achievement has been its ability to work with paradoxes and not be defeated or divided by them. *The Future of Teaching in Alberta* is an invaluable manuscript that should be read far and wide, not only in Alberta or only in Canada. It has global relevance, and we welcome its appearance, dissemination, reading and rereading by educators and publics around the world without reservation.
—Andy Hargreaves and Dennis Shirley, Boston College, March 2011

Preface

This publication attempts to analyze the forces and influences that will shape the future of teachers' work in Alberta over the next 20 years. Authorized by the 2009 Annual Representative Assembly, this study is especially timely given the release in 2010 of Alberta Education's *Inspiring Education: A Dialogue with Albertans*, which calls for the "informed transformation" of Alberta's education sector.

Because of its global scope and long-term perspective, this study will also serve to advance the profession's views on a host of factors affecting the future of teaching, including the emergence of new technologies and the intensification of teachers' work. A major portion of the study is devoted to analyzing the neoliberal agenda that is at the root of many of the developments that have affected education in Alberta and around the world during the last 20 years: the attempt to turn learning into a commodity by providing learners with "choices," the marketing of "technology-solutions" by corporations and the implementation of bureaucratic compliance policies such as those advanced by Michael Barber, the architect of "deliverology."

This study is a truly collaborative effort. J-C Couture, who coordinates the Association's research programs, developed the overall framework for the study and wrote the conclusion. The research team that conducted the focus groups consisted of Hans Smits and Jim Field, from the Faculty of Education at the University of Calgary, and Phil McRae, a member of the Association's executive staff. Hans Smits analyzed the data from the focus group interviews. Sharon Pelech (Macpherson), a graduate student at the University of Calgary, undertook the literature review and environmental scan of the global trends influencing education in Alberta. The Research Oversight Committee of Calgary Public Local No 38, along with the administrative support staff of the local, provided invaluable advice and logistical support in facilitating the focus groups.

Given the current struggles that Alberta teachers face, this study confirms the truism that the future is here; we just don't recognize it. As Andy Hargreaves and Dennis Shirley, authors of *The Fourth Way*, note in the foreword, this study enhances our understanding of the long-term trends and forces that will influence teachers' work over the next two decades and helps to identify those attributes of the teaching profession that will bring about the vibrant public education system that Albertans desire.

Gordon Thomas
Executive Secretary

Introduction

This study explores the following question: What are the key forces affecting teaching as a profession in Alberta, and how will these forces shape the identity of teachers during the next 20 years?

For the last several years, the Alberta Teachers' Association has attempted to engage Albertans in a dialogue about the societal changes that are affecting the province's public education system. A focal point for these discussions has been *Changing Landscapes*, a document that the Association revises annually to capture the various emerging trends that affect education in Alberta. The most recent version, *Changing Landscapes for Learning Our Way to the Next Alberta*, is available on the website www.learningourway.ca.

To complement this series of public dialogues, the Association embarked in 2009 on a study intended to identify the various external trends and forces that are changing the nature of teachers' work and to suggest how these forces might change the knowledge, skills and attributes that teachers will need in the future. To undertake this study, the Association assembled a research team composed of representatives from the Faculty of Education at the University of Calgary, Calgary Public Teachers Local No 38 and the provincial Association.

Scott (2005, 116) has pointed out that studies attempting to predict the future impact of current trends always run the risk of "closing down the opening to unknown futures" by imposing a narrow set of

assumptions on whatever topic is being investigated. To ensure that the study looked at the factors driving education change from as many perspectives as possible, the research team decided on a four-phase approach:

Phase 1—Mitigating Between Possible and Probable Futures: In May and June of 2010, teachers and administrators in Calgary Public Teachers Local No 38 were invited to a series of dinner focus groups in which they were asked to consider six questions about their experiences as beginning teachers and about how they believe education has changed. Participants were also provided with an environmental scan that included trends identified in *Changing Landscapes for Learning Our Way to the Next Alberta*.

Phase 2—Trends and Drivers Affecting Public Education: This phase, completed in June 2010, consisted of a review of the literature on the future of teaching. The views of leading future scanners and social philosophers were taken into account.

Phase 3—Casting Our Futures: Drawing upon Galtung's (1982) conceptual model for configuring the future (see Table 1), the researchers, in Phase 3, synthesized and reconciled the ideas generated by the focus groups participants.

Phase 4—Writing the Final Report: In Phase 4, the research team produced a draft report and submitted it to various stakeholders, including Calgary Public Teachers Local, for comment and feedback.

	Probable Futures	Possible Futures	Preferred Futures	Prospective Futures
Description	- Trend analysis - Global analysis	- Imaginative - Creative ideas - Flexibility	- Values position - Critical - Ideological	- Will to act - Self-reliance - Empowerment
Related Types of Future Studies	- Predictive - Quantitative - Trend is destiny (one future)	- Cultural - Interpretive - Utopian (many futures)	- Critical - Postmodernist - Ideological (an "other" future)	- Integral - Transformational - Empowering - Futuring
Underpinning Paradigms	- Positivist - Empirical - Analytical	- Constructivist - Interpretive - Hermeneutic	- Critical - Emancipatory	- Paradigm shift - Transformational - Activist
Research Methods	- Quantitative - Forecasting - Trend scenarios	- Qualitative - Dialogues - Creative visions	- Text analysis - Critique of media - Cultural artifacts - Visioning	- Integral visioning - Action planning - Action research
Goal	- Generalization - Extrapolation	Opening alternate possibilities	- Critical awareness - Deconstruction	- Empowerment - Change - Transformation

Table 1: Galtung's Model for Configuring the Future

Part 1: Migrating Between Possible and Probable Futures

We are always educating for a world that is or is becoming out of joint, for this is the basic human situation, in which the world is created by mortal hands to serve mortals for a limited time as home.

—Arendt 1969, 192–93

An education for the world cannot proceed as though the “world” has a hold on us, which is why educators must take seriously the phenomenon of world-alienation.

—Levinson 2010, 485

Analysis of Focus Groups with Principals and Teachers

The research team organized three focus groups with teachers and principals in Calgary. The focus groups took place on April 27, May 2 and May 11, 2010. Each group consisted of between 15 and 20 participants. Participants were asked to respond to six questions. A summary of their responses to each question follows.

Question 1: Thinking back to when you were a beginning teacher, were you prepared for what you faced in the classroom? Why or why not?

For years, researchers and practising teachers have observed that university preparation always seems to be out of step with what is required in practice. However, the responses of the participants suggest that the situation is actually more complex than just a gap between theory and practice. Although most of the participants, for example, admitted that they had not been adequately prepared, their admission had less to do with condemning the quality of their teacher preparation program than simply acknowledging that the life of the classroom and school was more complex than they had anticipated. Academic study, while important, did not give them a foretaste of what teaching would actually be like. As one participant put it, “I don’t think I was as prepared as I thought I was going to be.”

A major theme to emerge from the focus groups was that teaching is a complex task. Among the factors cited as contributing to that complexity were these:

- Students come from a diversity of cultural, socioeconomic, domestic and linguistic backgrounds and vary considerably in their ability to learn.
- Teaching involves many tasks, which need to be prioritized. Time management is essential.
- Teachers are sometimes given assignments outside their area of specialization.
- Managing a classroom and dealing with behavioural problems can be difficult.
- Dynamic, inquiry-based learning, to be effective, requires a great deal of preparation.
- Teachers are too often required to be social workers, a task for which they are not prepared.
- Teaching involves being prepared as a person, an attribute that is acquired more through experience than training. As one participant put it, “despite my feeling prepared for my beginning years, I didn’t feel much satisfaction at the type of work that was going on in my classroom (by the students and by me). However, I could not articulate this emptiness at the time, except to say that it was unfulfilling.”

In short, even though respondents reported that the actual experience of teaching was much more complex than they had anticipated, they did not believe that many of the skills and attributes required could have been fully developed in advance of practice.

Question 2: What did you find most difficult in those early years?

In general, the difficulties that participants cited fell into three broad categories. The first were the challenges associated with maintaining a balance between work and life and developing a sense of personal identity, agency and purpose as a teacher. Here’s how one teacher summed up the issue of work–life balance:

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Most difficult: the simple things I guess—balancing home/school, not being married to the job, not taking work home, deciding when to shut off the teacher, so to speak. Prioritize my many roles: paperwork, phone calls, IPP, communication with parent/guardian. Juggling expectations of self, peers, administration, parents, community.

This struggle concerning time and workload is a common lament in the literature about the experience of teaching. What is interesting, however, is the way in which participants linked their concerns about time to their sense of self-efficacy and identity as a teacher. What participants reported, in other words, is that the complex demands of teaching—whether mastering the course content, receiving “new teaching assignments every year” or “dealing with students who had bigger issues than [a teacher] can deal with”—made them feel less creative than they had hoped and gave them a sense that they weren’t growing professionally.

The second category of difficulties had to do with addressing the diversity of students’ needs. As in the case of work–life balance, the challenges that participants faced with respect to meeting the diverse needs of students caused them to question their self-identities and the adequacy of their preparation. Although preservice programs appear to give beginning teachers some sense of having mastered the curriculum, they are not, according to participants, of much practical value in helping teachers address the diverse needs of students. Several respondents, for example, commented that their preparation program had not helped them to find “a balance between curriculum and understanding students.”

The third category of difficulties had to do with fostering meaningful relationships with colleagues, students and parents. Several respondents observed that, when they began teaching, they “did not have anyone to discuss things with and they felt isolated.” Several participants mentioned that the structure of the school community can itself be an impediment to relationships. High schools, for example, can be highly departmentalized, and administrators may have little direct contact with classroom teachers. Other participants noted that teachers often lack access to, and time for, professional development

activities that might help them establish relationships with other teachers. Participants also discussed the challenges associated with communicating with students and parents.

Question 3: Have things changed in the classroom or school since you began teaching? Are different qualities required of you now than when you began teaching?

Participants identified four major areas of change. The first major change was a much greater emphasis on computers and technology. Virtually all participants noted that technology, if properly implemented, can be an asset to student learning. However, many of them expressed concern about the inadequacy of the support they received for implementing technology. Many participants noted, for example, that they did not understand how to integrate technology into an already overcrowded curriculum in a way that resulted in meaningful learning outcomes. Here’s how some of the participants explained the problem:

- We seem concerned with limiting rather than leveraging technology.
- A change in the dominant language and adapting to the latest trend is increasingly difficult.
- A focus on literacy and fundamental skills has been replaced with a focus on ICT or inquiry or 21st-century skills (we see brilliance where there is only hyperactivity).
- Learning for teachers needs to have specific applications in order to build on the foundations—kids are learning in the moment so I need to teach in the moment.

A second major change was a significant increase in the cultural diversity of the student population. As one participant remarked, “kids are coming in from all parts of the world.” A third change that participants identified was a greater emphasis on certain kinds of accountability, especially standardized tests. Finally, participants mentioned a shift toward a more managerial style of administration. As one participant remarked, “administrators have become managers and are less connected to practice.” Others noted how such initiatives as AISI, intended to encourage participation, are sometimes implemented in a top-down fashion.

What is encouraging is the way in which participants appear to view these changes less as impediments than as opportunities to develop new capabilities. Some participants, for example, mentioned that change had challenged them to develop a deeper understanding of complex learning approaches. Others noted that they had been motivated to improve their organizational abilities and their capacity to work collaboratively.

In the words of participants, today's teachers, in contrast to teachers of an earlier generation, need to

- be more conscious of the teaching process, more knowledgeable about the teaching [and learning] process and less template driven;
- have greater flexibility with respect to being a teacher and to understanding kids in more complex ways; and
- be reflective and able to consider the myriad pedagogical choices available to maximize student engagement/interaction with the content and to deal with inclusion issues.

Question 4: What aspects of good teaching have endured over time?

The preponderance of responses to this question centred on caring for children and ensuring that they are engaged in meaningful learning. Underlying all the comments was one central theme: "A good teacher believes that education makes a difference." Following is a sampling of responses to Question 4:

- Caring for students and doing the best to help them achieve their potential and having to deal with the demands of the system.
- The need for students to be part of a group (community), need for recognition, need for strong foundations in communication and literacy.
- Building relationships, lifelong learning, passionate about working with kids.
- Still not just a job. Teachers care and want their students to do their best, but the culture is getting bigger and more complex.
- Good teaching practices, relationship with kids,

excitement in the classroom, room for creativity and incentive, value of collaboration, school gives structure to students' lives, sense of community as children need to feel that someone cares and that they are safe.

Question 5: What do you think will be required of teachers and principals 20 years from now?

In general, the attributes that participants believe will be required of teachers in the future relate to the difficulties that they mentioned with respect to their own experiences as beginning teachers and to the changes that they believe have occurred since they began teaching: Here are some of the attributes that participants believe teachers will need in the future:

- An increased awareness of what students bring to the classroom (and not just technology)
- An understanding of the relationship between kids, knowledge and learning
- The interpersonal skills required to connect with students, parents and the community
- An understanding of cultural diversity
- A knowledge of life skills
- An ability to adapt and be flexible
- The ability to diagnose student differences and learning challenges
- An ability to deal with students from different family structures and different economic classes

Given the new challenges, participants believe that both teachers and administrators will need to change their practices. As one participant observed, "principals will need to be more empathetic, less top-down and more collaborative. They will need to connect with teachers, believe in them and be more effective in the classroom. Teachers will need to be lifelong learners and adapt to new ways of teaching."

Participants also noted that teachers in the future will need to possess not only pedagogical skills and a knowledge of the subject matter but also a constellation of qualities that some experts refer to as capabilities.¹ (It is, of course, important to remember that school reform is not just about

1. For a discussion of *capabilities* in reference to teaching practice, see Deneulin, Nebel and Sagovsky (2006). In the opening essay in this book, Paul Ricoeur explains that social arrangements and institutions play a role in determining how people are regarded as persons: "The idea is that individuals may be held to be 'great' or 'small' according to the evaluations ruling specific categories of social activities" (p 25). Social and institutional activities, in other words, help to shape how human activities and practices are evaluated. Capabilities refer to a broader and deeper sense of practice, to those qualities that enable people to see themselves as active agents who can tell, speak and act. Fortunately, capabilities for good practice exist not only in the domain of the individual but also in the context of institutions.

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improving the effectiveness of teachers but also about addressing such other systemic factors as the chronic underfunding of education and the failure of society to ensure that students are ready to learn when they get to school.²⁾

Question 6: What kinds of learning experiences do you think will best prepare beginning teachers?

The nature of teacher preparation is a subject of considerable debate among teacher education institutions, teacher associations, school boards and teachers themselves. Focus group participants suggested that teacher preparation should place more emphasis on relationships and on inquiry-based learning. Participants also pointed out that teaching as a practice requires the development of good judgment, the ability to adapt to change and a willingness to continue learning. Here is a sample of the qualities that participants believe beginning teachers will require in the future:

- The ability to lead more and deliver less by placing greater weight on the child's verbal articulation of his or her understanding
- Learning to sustain relationships over time
- Not abandoning the children
- More life experiences in the community and the world
- Learning to ask for help
- The ability to separate practice from the person and a willingness to change practices or strategies if the current ones appear unsuccessful

- The ability to collaborate with other team members openly and honestly
- Understanding the importance of knowing the individual student when deciding on pedagogical approaches
- A willingness to accept that a teacher cannot know everything and that each year of practice leads to the development of new skills that can be applied to aid students in learning and understanding

In short, participants appear to believe that teacher preparation should focus on the development of enduring capabilities and what some philosophers call practical judgement.³

Possible, Probable and Preferred Trends in Teaching

The moral content of our educational system is simply a reflection of the moral content of our society, [and] the task of the educator is to stand against a current which will in fact probably overwhelm him; This was written forty years ago, and later [MacIntyre] wrote that "teachers are the forlorn hope of the culture of western modernity...the mission with which they are entrusted is both essential and impossible.

—MacIntyre and Dunne 2002, 1

The possible future of teaching can be gleaned from participants' comments about working with children and the curriculum and about coming to

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2. See Hirsch (2010) for an interesting discussion about how two major tenets of the "neoliberal" agenda—a narrow-minded focus on testing and quantitative measures and a fixation with providing choice—have hampered the growth of teacher professionalism. The article is a review of a recent book by Diane Ravitch entitled *The Death and Life of the Great American School System: How Testing and Choice are Undermining Education*. According to Hirsch, Ravitch "does not doubt that good teachers are supremely important but argues that reformers are guilty of an oversimplification when they isolate this variable [teacher effectiveness] from the many factors that have made schools ineffective" (p 17). Ravitch's new book is somewhat ironic, given her previous support for movements like accountability and competition in education. However, it does echo what many teachers said in the focus groups; namely, that certain forms of organization limit the broader and deeper aims of education.
 3. Dunne (1993, 36), for example, notes that "the crucial thing about phronesis [practical judgment] ... is its attunement of the universal knowledge and the techniques to the particular occasion, so that they are deployed in relation to the 'right person, to the right extent, at the right time, with the right aim, and in the right way.'" Dunne goes on to say that "with the help of a range of Aristotelian concepts, one can formulate the capacity for appropriate responses to particular situations which is essential to good performance in any practice" (p 378). In a published dialogue, MacIntyre and Dunne (2002) discuss whether teaching can be understood as a "practice" or whether it is better understood as a constellation of practices. This is an important distinction that has not been fully considered in teacher education. In other words, is the purpose of teacher education merely to impart a set of skills, or is it pass on a practice that also includes ethical and pedagogic aims? Judging by their comments, participants in the focus groups appear to believe that teacher preparation should include ethical and pedagogic considerations.

terms with such issues as accountability, diversity and technology. The probable future is hinted at in participants' comments about the enduring qualities of being a teacher. In constructing a preferred future, perhaps we should focus not on changing teachers but on changing the conditions that make teaching possible.

Philosopher Paul Ricoeur (1991, 323) suggests that the interplay between ideology (a given with which we must cope) and utopia (a consideration of desirable ends and outcomes) opens up space to consider the possible:

This interplay of ideology and utopia appears as the interplay of the two fundamental directions of the social imagination. The first tends towards integration, repetition, and a mirroring of the given order. The second tends to disintegration because it is eccentric. But the one cannot work without the other.

Imagining a preferred future involves considering both what exists and what is possible. Constructing a preferred future for teacher preparation, therefore, involves taking a historical perspective and asking what we are preparing teachers to do. If we are always educating for “a world out of joint,” then simply preparing for the world “as it is” would be to abdicate our responsibility for changing that world.

Teachers should not be prepared merely to adapt to new technological demands. Setting the world “right anew,” as Arendt (1969) says, involves creating opportunities for teachers and learners that transcend existing structures and forms of practice and that take into account both what is needed and what is possible.

Although schools may not always be the way that we would like them to be, they are places where teachers and children dwell together, suffer together and—despite all odds—learn together. We are often in a hurry to introduce new methods and programs and to undertake more research. But we should, as Badiou (2008) reminds us, also be focusing on “the conditions of existence rather than just improving its methods” (p 20). Badiou’s counsel is utopian because it asks us to think about what it means to live in a way that is ethically and socially responsible. But utopian thinking also needs to take into account practice and to build our capacity for deeper understanding. Creating a preferred future involves imagining “a future goodness that transcends our current ability to understand what it is” (Lear 2006, 103). Our preferred future, then, should not only address the joys and possibilities of creating knowledge but also articulate our understanding of what it means to live well together in the world. Glimmerings of these aspirations can be heard in the voices of the focus group participants.

Part II: Trends and Drivers Affecting Public Education

Changing Landscapes for Learning Our Way to the Next Alberta (ATA 2010) explores the impact that education will have on the Alberta landscape and, conversely, what impact economic, societal and political changes will have on education. Imagining what education will look like in the Alberta of tomorrow is a complex undertaking.

In this section, we attempt to determine which trends will have the greatest impact on education and which ones will likely fade away. Being aware of these trends can empower teachers to actively participate in creating the future of education, a topic that will be explored in Part III.

Flower (2010, 39) argues that if the new “education vehicle” is to be successful, teachers must design it themselves and use it to produce “creative, engaging and demanding student learning.” The literature, although filled with alluring images of the “21st-century learner” and discussions about how the future needs to look very different from the past, nevertheless betrays an unspoken apprehension about the future. The ecological crisis; technological changes; new approaches to teaching and learning; and an analysis of political, social and economic trends have combined to generate a sense of urgency about the future. This focus on the future sometimes causes people to forget what has happened in the past. The tension between the allure of the future and the pressure of the past produces what Arendt (1993) calls

the odd in-between period which sometimes inserts itself into historical time when not only the later historians but the actors and witnesses, the living themselves, become aware of an interval in time which is altogether determined by things that are no longer and by things that are not yet. (p 9)

Arendt goes on to argue that it is precisely in these in-between times that the moment of truth emerges. The literature contains considerable

discourse involving arguments from the past. One example is the debate in the United States between the importance of teaching skills for the 21st-century learner and the need to focus on the core curriculum. These arguments echo the debates of early-20th-century educators such as John Dewey. Other arguments focus on the future, on how teaching and learning will dramatically change in response to new technologies that we cannot yet imagine.

Historically, decision makers have tended to treat emerging technologies as sources of innovation in education. The current focus on 21st-century skills and personalized learning clearly fits this pattern.⁴ Murgatroyd and Couture (2010), however, have recently questioned curriculum-reform initiatives, such as those implemented by Alberta Education over the last two decades, that are driven by technology boosters. According to the authors, the Government of Alberta, school districts and schools have together invested more than \$1.5 billion in information and communications technology since the early 1980s. Most of this funding has been used to acquire hardware and software and to keep it up to date. Investment in professional development and collaborative inquiry to help educators take advantage of these technologies has been paltry by comparison, and little effort has been spent on making the kind of cultural changes at the jurisdictional and school levels that are necessary to implement technology in a way that truly enhances student learning. Aside from sponsoring small-scale projects that have been used as showcases, the government has done little to ensure that students are ready to learn when they come to school, to address systemic issues of child poverty and to rethink Alberta’s overcrowded programs of study. The Grade 7 curriculum, for example, currently contains 1,350 distinct learner outcomes, which presents challenges for teachers wishing to adapt their pedagogy to capitalize on emerging technologies.

The notion that technology and competition between schools can, in and of themselves, bring

4. For a discussion of the historical antecedents of the term *personalized learning*, see McRae (2010).

about educational reform is expounded in a new book by Barnett Berry (2011). In *The Teachers of 2030: What We Must Do for Our Students and Our Public Schools—Now and in the Future*, Berry, like many reformers, appears to take for granted that capitalizing on digital connectivity and offering incentive pay to teachers will usher in a renaissance of learning in American schools. This book and other literature on this topic will be reviewed in the trend analysis that follows.

General Trends Affecting Teaching in the 21st Century

The Canadian Council on Social Development (CCSD 1999) and the Centre for Educational Research and Innovation (CERI 2001) have both concluded that a significant trend that will affect Canada and other OECD countries in the near future is the greying of the population. As the population ages, the number of school-aged children will gradually decline over the next 20 years. In Canada, the number of school-aged children is predicted to shrink from 21 per cent of the population in 1996 to 16 per cent by 2020. All other OECD countries (except Mexico and Turkey) are experiencing similar declines. At the same time, the number of seniors will increase until there are as many people over the age of 65 as there are people under the age of 15. As the population ages, governments may allocate less money to education and spend correspondingly more on health care and income security. The CERI (2001) also predicts that the aging of the population will bring about a reversal in the current trend that sees adolescents staying in school longer and not joining the workforce as early as did their counterparts in earlier generations.

Some experts are predicting that there will be a shortage of teachers and that the gender imbalance between female and male teachers will increase. The UNESCO Institute for Statistics (UIS 2006) observes that impending teacher shortages have been predicted for decades. The difficulty is that the factors that create these shortages tend to be specific to the countries involved. As a result, finding a universal global solution is difficult. The shortages are not simply the result of an insufficient supply of teachers for the number of students in the country. Shortages can also result, for example, if a country changes what it deems to be universal

education from, say, no coverage to primary school only, or from primary school to secondary school. A move to secondary education increases the demand for qualified teachers, especially those with specializations. Another factor that can precipitate a teacher shortage is a change in policy with respect to the number of students who will be attending school. Emergencies, conflicts and epidemics often mean that poorer countries do not have the funds to pay for schools. Conversely, when governments cancel school fees or make other policy changes that encourage more children to attend schools, they may neglect to provide resources to handle the resulting influx of new students. According to the OECD (2005), the large group of teachers in developed countries such as Canada, the USA and Europe that started teaching during the 1960s and 1970s (a period of high recruitment) are now retiring, creating a “major challenge and an unprecedented opportunity in most countries” (p 18). The scramble to replace these retiring teachers, according to the OECD, may change schooling and the way in which teaching is carried out. The OECD also observes that replacing older teachers who are at the top of the salary grid with younger, less expensive teachers can help relieve budgetary pressures.

According to the UIS (2006), 550,000 teachers in the USA, or approximately 16 per cent of the total teaching force in that country, left teaching in 1999/2000. Both the OECD (2005) and the UIS (2006) report that among the sources of dissatisfaction were lack of time to plan, heavy workload, dealing with poorly behaved students and lack of influence over school policy. Different countries deal with teacher attrition in different ways. Some solutions create new concerns, such as the deprofessionalization of teaching.

The OECD (2005) reports that the teaching population is becoming increasingly female, a trend that affects the curriculum, pedagogic styles and interpersonal relationships. This gender imbalance affects rich and poor countries differently. As the CERI (2001) notes, the relative paucity of male teachers means that there are fewer male role models to help socialize the increasing number of children who are growing up in single-mother families. The CERI suggests that the absence of opportunities for young students (especially underachieving boys) to work with male teachers can be detrimental to the

socialization process. The UIS (2006), on the other hand, points out that the presence of many female teachers may encourage young girls, by example, to pursue further education. The UIS argues that, when the number of female teachers is 20 per cent or less, only seven or eight girls for every ten boys will enter primary education. Promoting a more balanced gender distribution in the teaching profession would help to alleviate both of these concerns.

Trend 1: Continued Dependence on Primary Resources

Alberta's economy is still highly dependent on primary resources and commodities (ATA 2010). As Flower (2010) notes, the provincial government has promised several times in the past to diminish its reliance on the primary resource sector with its boom-and-bust economic cycle but has still not done so. Such a fluctuating source of revenue affects teaching and learning. Whenever revenues fall, the government cuts funding to school boards, which, in turn, are forced to lay off teachers. Alberta's reliance on primary resources to run its economy has created what might be called a "poverty-of-plenty paradox" (ATA 2010). Here are some examples of that paradox:

Will we have cities without communities?

- Alberta's population is expected to grow from 3.2 million today to 3.8 million in 2015 to 4.4 million in 2030. Most of this growth will take place in urban centres. Red Deer, for example, which has a population of 78,000 today, is expected to grow to 94,000 by 2015.⁵ Meanwhile, Alberta's farm population has declined from 40 per cent of the total population in 1955 to less than 7 per cent of the total population today. Fewer than one in five Albertans now lives in rural areas, a trend that will continue to 2015.
- Alberta's growth will be characterized by unsustainable urban sprawl in concentrated

pockets, especially in areas adjacent to large cities. Increasingly, Albertans will live in clusters of city-suburban complexes rather than in stand-alone cities. As the population of metro-adjacent areas increases, the capacity of municipal governments and school boards to influence *communities* will decline. Calgary and Edmonton, for example, have among the lowest population densities of cities in Canada, a situation that challenges the capacity of local governments, including school boards, to meet infrastructure requirements.

Who will be Alberta's students?

- Currently, Alberta, at 15 per cent, trails only Ontario and British Columbia in having the highest portion of foreign-born residents. Between 22.1 per cent and 26.4 per cent of Calgary's population in 2017 will have a mother tongue that is neither French nor English.⁶ Alberta's fertility rate will remain well below the replacement level of 2.1 births per woman. As a result, net migration will be the source of population growth in the province. Projections for net migrations over the next 10 years range from a low of 10,000 per year to 30,000. Alberta schools will become increasingly diverse as immigrants constitute a larger and larger portion of the student population.⁷
- The number of Aboriginal students will continue to increase. Alberta currently has 52,000 school-aged Aboriginal children. By 2016, Alberta will vie with Ontario in having the largest Aboriginal population in Canada.⁸
- Although Alberta's overall population will grow, the number of school-aged children will remain relatively constant. Meanwhile, the number of seniors will increase as the median age of the population moves from 34 in 2005 to 37 in 2015 to 40 in 2030. By 2024, the number of people 15 years of age and younger in Alberta will equal the number of people over the age of 65.⁹
- Increasingly, Alberta's students will be drawn from the urban-adjacent centres. In the last few years,

5. Population Projections for Alberta: 2000–2030. See www.eslaction.com/index.php?page=demographics.

6. See www.eslaction.com/index.php?page=demographics.

7. The population of Calgary is growing by about 23,709 each year and is expected to reach 1,184,000 by 2014. See www.cbe.ab.ca/AboutUs/documents/TenYearFacilitiesPlan.pdf.

8. See www.education.gov.ab.ca/nativeed/nativepolicy/AppendixB.asp.

9. Population Projections for Alberta: 2000–2030 www.health.gov.ab.ca/resources/publications/pdf/PopProject00_30.pdf.

Alberta's three largest urban centres—Calgary, Edmonton and Lethbridge—have accounted for more than 80 per cent of the total enrolment growth in Alberta's postsecondary system, even though these cities represent only 70 per cent of the general population.

How inclusive will the next Alberta be?

- From 1961 to 1999, Alberta's GDP increased by 400 per cent, but the wealth has not been distributed equitably. The Genuine Progress Indicator, which is a composite of 12 economic indicators developed by the Parkland Institute, has remained virtually stagnant during this period.
- In all, 13.3 per cent of Alberta's 98,000 school-aged children live in poverty. One measure of a society is the extent to which it is willing to tolerate child poverty. The Edmonton Social Planning Council defines social and economic inclusion as a situation in which "all people are included and can participate meaningfully in [a] society's social and economic life."¹⁰
- A popular misconception is that poor children come primarily from families dependent on social assistance. The reality is that 57.9 per cent of poor children in Alberta live in families in which at least one parent works all year. In other words, 56,700 children in Alberta are living in poverty even though they come from working families.
- Despite the tremendous economic growth in the Calgary–Edmonton corridor, large disparities in economic well-being exist in the province. In Wetaskiwin Regional Public Schools, for example, approximately 24 per cent of the student population has special needs, an unusually high proportion, and family income in the region is 20 per cent lower than the provincial average.¹¹

Despite these paradoxes associated with an overreliance on primary resources and the concomitant failure to engage in long-term planning, Alberta can change its future. The province could, for example, move to a more knowledge-based economy, which, according to the CERI (2001, 25), is the most rapidly growing employment sector in OECD countries. Doing so would raise the quality

of education and make access to it more equitable. The CERI (2001) observes that during the 20th century, the world made significant progress in reducing poverty and increasing life expectancies. It also reports that the number of young adults who are completing tertiary education has increased in most OECD countries, including Canada (where 39 per cent of the population has completed tertiary education), Finland (31 per cent) and the United States (35 per cent). It would seem that most countries, including Canada, are ready to move toward a more knowledge-based economy. Yet not all countries are prepared to do so. Even in affluent countries, not all individuals are ready to embrace a knowledge-based economy.

Globally, the inequalities between the rich and the poor have grown quickly and dramatically, especially since 1960. Citing World Bank data, the CERI (2001) reports that 2.8 billion of the world's population of 6 billion live on less than \$2 a day, and that 1.2 billion live on less than \$1 a day. Illiteracy is directly related to poverty, marginalization and disadvantage (Burnet 2008). Approximately 35 million people in Latin America and Caribbean countries, for example, lack basic literacy skills and, of these, 55 per cent are women. Literacy rates are lowest in rural and indigenous communities (Burnet 2008).

Social disadvantage and student alienation are major concerns not only in poorer countries but in affluent countries as well (CERI 2001; Ogilvy 2006; OECD 2005). In 14 out of 20 OECD countries, 15 per cent of adults have only basic literacy levels. As these countries become more knowledge-based, people having only marginal literacy skills will find themselves at a disadvantage when it comes to finding gainful employment. In most OECD countries, single-parent households (most of them headed by women) have not fared well with respect to income equality. After the *Civil Rights Act* of 1964, many white, middle-class families in the United States moved to the suburbs to avoid integrated schools. The inner-city children left behind, most of them of colour, remained educationally segregated and tended to achieve at a significantly lower level than their more affluent suburban peers (Ogilvy 2006,

10. Recognizing the need for a comprehensive approach to building inclusive communities, the City of Edmonton opened a Diversity and Inclusion Office within its Corporate Services Branch in January 2005.

11. WRPS Annual Education Results Report 2003–2004, page 6.

26). In Canada, although the economy as a whole has improved, the wealth has not been distributed equally. Some sectors of the economy have been downsized, and part-time jobs have replaced full-time jobs. Even when new jobs are created, they are often low-paying, nonstandard jobs (CCSD 1999). Between 1997 and 1989, the total number of children in Canada increased by 6 per cent but, during the same period, the number of children living in poverty increased by more than 37 per cent. Again, the hardest hit were lone-parent families, which were five times more likely to be in a low-income situation. To earn just enough for the family to survive, most parents had to work more hours. Many families continue to struggle even when the parents are working as many hours as is physically possible (CCSD 1999).

As countries move from the industrial-based to the knowledge-based era, they need to find ways of ensuring that wealth is distributed more equitably. Equity also needs to be taken into account in planning schooling. Ogilvy (2006, 33) argues that achieving equity involves a consideration of “differences that make a difference, not just a uniform spread of the same standardized inputs.” Unless countries make a deliberate effort to change, the number of poorly educated people will continue to grow. In a knowledge-based economy, this underclass, in turn, will have more and more difficulty finding worthwhile employment.

Sahlberg and Oldroyd (2010) argue that one way of counteracting this trend is to increase the amount and quality of education that all students receive. The United Nations launched a literacy initiative in 2005 designed to improve adult literacy rates by 50 per cent by 2015 (Burnet 2008). On a more practical level, the CCSD (1999) suggests that educational opportunities could be improved by developing more school–work transition programs, offering better career counselling and forging more school–business partnerships. Becta (2008a) contends that schools will be challenged, in a knowledge-based economy, to keep up with the accelerated rate of change without, at the same time, “sacrificing core educational values” (p 19). Becta predicts that, rather than undergoing a complete revolution, curricula and pedagogy will likely evolve slowly as the education system itself evolves.

In the past, school reforms have generally been driven by society’s desire for continued economic

growth (Smaller et al 2005). In the case of the transition to a knowledge-based economy, however, Smaller et al argue that there is no valid empirical data linking this movement to education, employment opportunities and success in the global economy. Instead, the authors suggest that the knowledge-based economy is the product of a political movement of “globalizing, neo-liberal economic trends, including tighter control over, but less funding for, public sector social institutions” (p 3).

Trend 2: A Growing Environmental Crisis

In 1958, Hannah Arendt predicted that during the next 100 years, human beings would become entirely alienated from their world. She added that “education is ... where we decide whether we love the world enough to assume responsibility for it and, by the same token, save it from that ruin which ... would be inevitable” (Arendt 1993, 196). She was not the only one to sound the alarm in the 1950s. For years, the United Nations and other multinational organizations have been urging nations to adopt more long-term, sustainable policies (Sahlberg and Oldroyd 2010). Bowers (1995) argues that the environmental crisis is a manifestation of the cultural values and assumptions that guide human decisions. He points out that our economy, with its emphasis on ever-increasing profits and continual progress, is unsustainable. Calling our current outlook—the insistence that we are not part of 3 billion years of evolution—a state of insanity, he notes that we are so alienated from the web of life that we do not recognize what is being communicated to us through the ecosystem.

By 2050, the population of the world is expected to reach 9 billion. Many experts have argued that our collective failure to address the looming ecological crises will lead to a global economic collapse (Sahlberg and Oldroyd 2010). Delegates to the Earth Summit in Rio de Janeiro in 1992 agreed that the then-current consumption and production practices were unsustainable (CERI 2001). The Environment/CERI Workshop on Education, Learning and Sustainable Consumption organized by the OECD in 1998 reported that the level of human consumption had “risen dramatically and unequally over [the 20th] century,” growing from \$1.5 trillion in 1900, to \$4 trillion in 1950, to \$12 trillion in 1975, to \$24 trillion in 1998 (CERI 2001, 39). Such an

exponential growth in consumption has not only had a devastating impact on the environment but has also negatively affected our civic and cultural values and dissolved the social glue that is essential for future individual, social and economic development (CERI 2001).

Orr (2004, 6) contends that education, far from opposing this process, has actually equipped people to become more “effective vandals of the earth” because it champions the supremacy of the individual and the notion that progress is inevitable. Orr goes on to point out that we are educating students as if there were no planetary emergency and as if all our environmental problems could be solved by technology. A number of organizations have begun to call attention to the role that education can play in changing our relationship to the environment. In 2005, for example, the United Nations declared a Decade of Education for Sustainable Development, an initiative designed to call attention to the global environmental crisis and to reinforce the notion that “education and learning lie at the heart of approaches to sustainable development” (UNESCO 2005, 26). In 2000, the European Council in Lisbon set out a strategy to make the European Union, by 2010, the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth. That strategy, renewed in 2010, also recognizes education as one of the “keys for raising the level of understanding of the fragility of the global ecological situation” (Sahlberg and Oldroyd 2010, 280). Although the media are increasingly focusing on issues of environmental sustainability, schools have been slower to incorporate this kind of awareness into the mainstream curriculum.

Many students are aware of “glaring inequalities and the environmental issues with which they are intertwined” (CERI 2001, 40). Although many students are extremely concerned about the environment, they also have very high material expectations. Part of the legacy of the industrial age and its penchant for exploiting the environment is the “factory model” of schooling. With its emphasis on standardization and accountability, this model gives short shrift to creativity and collaboration, two approaches that could help to create a more sustainable society (Sahlberg and Oldroyd 2010). Capra (1996) argues that the major world crises of

our time are interconnected and interdependent and that studying them in isolation is folly.

Many people assume that teaching new programs that focus on the environment and sustainability will help move society toward a more sustainable ecology. Too often, however, these programs are simply added on to an already overcrowded curriculum. In the same way, many environmental-awareness campaigns fail to change people’s consumption habits or deeper-held values. The CERI (2001, 41) contends that schools need to focus on “critical thinking, self-reflection, media analysis, personal and group decision-making and problem solving.” Bottery argues that schools should teach students about “environmental sustainability, ... global fragility, ecological interdependence, global cooperation and a concept of a public good” (cited in Sahlberg and Oldroyd 2010, 288). Unfortunately, these recommendations will likely have little impact as long as schools continue to be based on the industrial model.

Davis, Sumara and Luce-Kapler (2000) argue that we should be teaching not *about* the world but about our interconnectedness *with* the world. In other words, we need to shift from an anthropocentric view of the world to a holistic view in which human beings are seen as part of the web of life. Adopting this approach will prevent us from separating ourselves from the world and pretending that we can control or manage what we “do” to the world. Once we realize that all life is interdependent, we will abandon the notion that continual growth is sustainable and that the ecological crisis can be solved as a set of isolated problems (Capra 1996). Such a paradigm shift will necessitate a change in how schools are organized and how learning and knowledge are understood.

Developed initially by scientists and implicit in such models as chaos theory, quantum theory, deep ecological theory and systems theory, this more interconnected view of reality is now starting to affect education. These emerging theories should cause us to question such industrial-era assumptions as the desirability of continual economic growth and the notion that the purpose of education is to create strong, autonomous individuals who can operate outside the web of life. Levinson (2010) points out that Arendt believed that students should be taught about the world as it is, with all its potential and all its challenges. Given this knowledge, students

would then be in a better position to reconfigure and improve the world (cited in Edgoose 2010, 392). Orr (2004, 8) concurs, arguing that “it makes far better sense to reshape ourselves to fit a finite planet than to attempt to reshape the planet to fit our infinite wants.”

Trend 3: Globalization

Globalization is rooted in the neoliberal political ideologies espoused by Ronald Reagan and Margaret Thatcher in the 1980s (Smith 2003). It is premised on a “commitment to big markets and small states” and the development of human capital to secure competitive economic advantage (Stevenson 2007, 2). Proponents of globalization argue that opening national barriers and sharing “knowledge, trade and culture” benefits all humankind (CERI 2001). Opponents charge that globalization amounts to nothing more than an opportunity for international corporations to exploit poor countries, thereby increasing the gap between the rich and the poor. Opponents also argue that globalization leads to cultural and political hegemony and to the acceleration of what Davis (2003) calls “ethnocide,” the destruction of native languages and cultures throughout the world.

Globalization has a number of implications for public education. Because globalization tends to reduce cultural and linguistic diversity (English is rapidly becoming the dominant language), children are learning about “music, their environment, sports, race and ethnicity” from an increasingly narrow framework (CERI 2001, 47). After all, in an unregulated marketplace, making a profit is regarded as more important than preserving social and cultural relationships.

A major focus of globalization is to create a workforce to feed the global economy. Becta (2008b, 18) observes that “a globally competitive economy that requires a more highly skilled workforce is a primary driver for government policy towards education and training at all levels.” Several recent curriculum reforms, including Britain’s *Harnessing Technology* and the USA’s *Partnership for 21st Century Skills*, have been undertaken in an effort to provide students with the essential skills for success in today’s world. Reforming education so that it focuses on developing skills (thereby satisfying the needs of employers) represents a significant departure from the traditional view that universities should

focus on the liberal arts (Common Core 2010). Although such skills as critical thinking, creativity and problem solving have been identified as essential for 21st-century learners (Toppo 2009; Sahlberg and Oldroyd 2010; *Partnership for 21st Century Skills* 2010), these skills have been considered an essential part of the curriculum for at least a century, beginning with John Dewey and other proponents of progressive education in the first half of the 20th century and continuing in the 1970s, 1980s and 1990s with the emphasis on scientific literacy (DeBoer 1991). What has changed is the notion that these skills serve no other purpose than to help build a strong global economy. The assumption that building a global economy is the best or the only future remains unexamined.

Educators have a responsibility to prepare students to deal with the complexity of a globalized world. Smith (2003) argues that globalization has three phases. Globalization 1 is characterized by the kind of neoliberal ideology, described earlier, that emerged in the 1980s and in which globalization took root. During Globalization 2, people respond to Globalization 1, either by accommodating the trends triggered by globalization or resisting them. During Globalization 3, people begin to focus on understanding the world in terms of sustainability. Smith suggests that exposing students to aesthetics, spirituality, altruism and other ways of knowing can help them appreciate the planet’s ethnodiversity. Davis (2003) suggests that exploring and understanding the “polychromatic world of diversity” rather than settling for a “monochromatic world of monotony” can help students understand how globalization affects the planet and human knowledge.

Globalization has affected education in a number of ways. Many developed countries, for example, have begun reforming their education systems to ensure that the country can compete more successfully in the global economy (Stevenson 2007). Although countries have taken different approaches, these reforms are all designed to effect a “transformation of the welfarist model of public education” (Tomlinson, cited in Stevenson 2007, 7). According to Stevenson, these efforts at school reform share two characteristics. The first is an emphasis on making schools more productive by reducing labour costs and by increasing output (that is, higher student test scores). A second characteristic

is the introduction of new forms of measurement and accountability to ensure that the expectations with respect to productivity are being met. One result of these reforms for teachers has been pressure to work harder. A second result has been a loss of control over the process of teaching itself. Instead of being allowed to use their knowledge of educational pedagogy to make professional judgments, teachers are faced with “centralized curriculum reform and inspection,” the ultimate result of which has been an “impoverished utilitarian curriculum and an obsession with testing” (Stevenson 2007, 7). Teachers who raise concerns are often dismissed as self-serving (Flower 2010). As a result, many teachers simply leave the profession.

Following the failure of several efforts at school reform that did not take into account the views of teachers, Britain has recently begun including teachers in discussions about how learning can be improved. According to Hargreaves and Shirley (2009), school reform tends to be most successful when all stakeholders, including teachers, become part of the process. The authors describe such an approach, with its emphasis on professional responsibility and community engagement, as the “fourth way” (as opposed to the “third way,” which is characterized by standardization and compliance). With reference to the Alberta context, Murgatroyd (2010a, 28) has described this imagined future shift from the third to the fourth way as “informed transformation—an inspired change in our system that refocuses the work of schools, teachers, parents and students and reengages communities, business and others in the work of learning.”

Clearly, teachers need to be aware of the forces driving globalization and be willing to voice their concerns if they see globalization negatively affecting the quality of student learning.

Trend 4: Broadening Learning Opportunities

The introduction of compulsory schooling in the late 19th and early 20th centuries gave young people hope for a better future and laid the groundwork for the factory model of education that, without question, helped countries to industrialize during the early part of the 20th century (Sahlberg and Oldroyd 2010; Edgoose 2010; Ogilvy 2006; CERI 2001). Today’s shift toward a “highly integrated global knowledge economy” (Edgoose 2010; CERI 2001)

represents another major crossroads in the evolution of education.

Although some aspects of education have changed over the last few decades, the structure of schooling itself has remained relatively fixed, and most education systems continue to be based on this factory model. The developers of Europe 2010 (the Lisbon Strategy) observe that schools are still organized in a framework that includes “short lessons, subject-based curriculum, studying with age-groups and a common timetable for all” (Sahlberg and Oldroyd 2010). Becta (2008a, 2008b, 2008c) notes that although students between the ages of 11 and 19 prefer to learn by participating in groups, in most schools they still spend most of their class time listening to their teacher talk and copying notes from the board. Because schools are set up to teach the masses, they are expected to achieve certain standards and averages, a situation that has left teachers feeling trapped between “the demands of teaching for testable results and providing their students with an education that is relevant for an unpredictably changing and complex world” (Sahlberg and Oldroyd 2010). Standardization and the pressure to compete in international education rankings have caused education systems to adopt more homogeneous curricula and to focus on “harmonized frameworks and key competences” (p 284). Such a standardized approach limits opportunities for creativity and innovation and gives short shrift to the arts. Most experts believe that today’s teaching methods are not designed “with tomorrow’s cyber producer/consumer in mind” (CERI 2001). Ogilvy (2006) concludes that while we are in the midst of an information revolution, the school system is stuck in the era of the industrial revolution. To move forward, schools need to shift their goals, role, structure and methods (CERI 2001).

Projects such as the New Zealand Secondary Futures Project, the Netherlands Initiative, the Ontario Future of Teaching as a Profession, the Lisbon Strategy for Education and Training in Europe by 2010, the OECD’s (2005) *Teachers Matter*, the 21st Century Skills Movement in the United States and the CERI in the United Kingdom all present a vision of how schooling should look in the 21st century. One feature that all these visions have in common is an emphasis on individualizing learning for each student. As the developers of the

New Zealand Secondary Futures Project point out, the “one-size-fits-all model” of education is no longer viable; learning needs to be tailored to the needs of the individual student. An OECD study in 2008 concluded that the most effective learning environments “will be characterized by customized learning for each child” (cited in Sahlberg and Oldroyd 2010, 293). Students in such a customized environment will learn not only from books and websites but also by linking electronically to experts throughout the world, working collaboratively in groups both locally and in other parts of the world, undertaking inquiry projects and participating in assessments designed to evaluate deeper kinds of learning (Sahlberg and Oldroyd 2010).

Smith (2003) observes that the younger generation is often more adept at using technology than the older generation. As a result, rather than being driven by adults, pedagogy will be characterized by “a mutual maturity” such that young people will be genuinely heard and deeply engaged in conversations about the complexities of life. As Smith points out, this arrangement does not mean that the older generation has to relinquish its responsibility for serving as elders. Instead, it opens up space for young people to articulate their understanding of the world. Ogilvy (2006) observes that skilled teachers have always known that every child is unique and that learning needs to be individualized and contextualized. However, for the most part, these teachers have been working in a system that does not allow individual learning to flourish. Skilled teachers have been “fighting uphill against overcrowded, factory-like classrooms and assembly-line lesson plans” (p 32). Ogilvy argues that school systems can use technology and the massive amount of information they have gathered to help teachers create authentic, individualized learning opportunities for students.

A second feature of projects that articulate a vision for 21st-century learning is the recognition that new forms of assessment are required to evaluate the efficacy of personalized learning. Spending time and effort adapting the curriculum to meet the individual needs of learners seems pointless in the absence of authentic ways of assessing such learning (CERI 2001; Rotherham and Willingham 2009). Standardized, multiple-choice tests are incapable of assessing the kind of deep learning that needs to take place in the classrooms of the future. What is

needed is assessment *for* learning and assessment *as* learning—approaches that will help teachers to better understand how students learn (Fullan 2006). If critical thinking, creativity and innovation are the skills that 21st-century learners will need, educators must find ways of assessing these skills. The summative forms of assessment currently in use do not meet these needs (CERI 2001; Ogilvy 2006; Sahlberg and Oldroyd 2010).

Burnet (2008) and the CERI (2001) argue that schools should value not only the learning that takes place in class but also the informal learning that occurs outside the confines of the school. Burnet (2008) points out that schools tend to ignore the vast amount of learning that occurs outside the classroom, a situation that puts marginalized populations at a disadvantage. Finding new methods of validating what people know will create an incentive for them to participate in a learning economy and society.

Smith (2003, 49) points out that schools also need to equip students to become lifelong learners in a world that is constantly changing:

Commercial culture is built on a phenomenology of distraction, and children who are raised in it lose the capacity for sustained attention. The principle of lifelong learning that undergirds the new economy depends on keeping people off-balance, ready to move at a moment’s notice, ready to leave one job to take another, to reskill for this, then that.

Smith argues that creating a peaceful environment outside of this phenomenology of distraction provides students with an opportunity to “develop character, learn about living, and share relations with others deeply and complexly” (p 49). Giving students space to find themselves and to experience deep relationships with others helps them to find peace, stability and hope. This space exists in the tension “between completion and incompleteness, between knowing and what is yet to be revealed” (p 49). Arendt emphasizes the need for teachers to offer stability in the lives of students in such an uncertain and imbalanced world. By committing themselves to students’ lives, teachers become what Arendt calls “pillars of support” and “islands of certainty” (cited in Edgoose 2010, 401). Students sense this commitment, which helps them deal with uncertainty and makes them more amenable to learning and to

understanding that they can play a role in creating a better world.

A third feature of 21st-century learning is a recognition of the importance of viewing the world from the perspective of deep ecology and interrelatedness rather than from the perspective of the individual. Adopting the perspective of deep ecology compels us to redefine how we see knowledge, intelligence and the individual. In an anthropocentric society, intelligence and education are focused on “empowerment, optimal learning, self-realization, motivation and control” (Bowers 1995, 110). Davis, Sumara and Luce-Kapler (2000) argue that any complex system that can adapt itself to changing circumstances is a learning system. Viewed from this perspective, learning encompasses many more experiences and interactions than those that occur in the traditional classroom. St Julien (2000, 254) defines *intelligence* as the “basic capacity for competence” and *reasoning* as the “activity that generates competence.” Educational practices are generally based on the assumption that something must be “done” to students to help them acquire and apply knowledge. Educators also assume that if intelligence lies within the individual, they should be able to identify and measure it and then help students maximize their intellectual abilities.

Our entire system of schooling, our theories of psychological testing and even Gardner’s theory of multiple intelligences are based on the assumption that intelligence is an aspect of the individual. This view of intelligence, according to Estes, has prevailed since the time of Binet (cited in Bowers 1995). Increasingly, however, scientists are concluding that intelligence inheres in the interactions between organisms and their environment, interactions that result in structural changes geared to helping the organism survive (Capra 1996). Intelligence, in other words, has to do with meeting humankind’s basic needs and, at the same time, sustaining the ecosystem (Bowers 1995). Such a view is diametrically opposed to the notion that human beings, as intelligent creatures, can simply “construct” how to live in the world without taking into account the ecosystem. If the greatest challenge facing the human race is learning how to create sustainable communities—communities that satisfy human needs without destroying the earth or limiting the possibility of future generations—then surely our education

system should focus on preparing students to address this challenge. Bowers argues that unintelligent behaviour is any activity that decreases or threatens a sustainable life on the planet:

Being stupid means relying on patterns of thought and behavior that contribute to the destruction of natural systems upon which human life depends.... Schools and the ideology of educators are contributing to a form of intelligence that leads to stupid behavior in an ecological sense. (p 115)

Based on this new understanding of intelligence, schools should concentrate on teaching students that human beings are part of the ecosystem and that their survival depends on learning how to live in harmony with all members of that ecological community (Capra 1996).

Trend 5: Rethinking Citizenship and Civil Society

The advent of social media is changing our understanding of community, political involvement and the role of the citizen in a democratic society. Many traditional systems, including politics and education, have been caught off guard by this new phenomenon and are just beginning to assess its importance.

Social capital has to do with the “norms of trust and cooperation” that govern the connections between people and act as the “glue” that holds society together (CERI 2008). In the past, people tended to belong to “large, clearly defined groupings with fairly clear moral, political and behavioural codes” (CERI 2001, 152). Beginning in the 1950s, social capital has gradually declined as people have become more isolated. Several factors have contributed to this isolation: the population has become more urban, families have moved into the suburbs, large box stores have replaced local community stores and people no longer live in the same community in which they work (CERI 2001; Wesch 2008). The introduction of social media, whether in the form of YouTube, Twitter or Facebook, has started to reverse that trend. The Internet not only provides instant access to vast amounts of information but also creates virtual communities that transcend the traditional boundaries of regions, countries and cultures (Wesch

2008). According to Barry Wellman, the Internet, which allows users to both generate and filter content, has changed the nature of communities “from a place-to-place to a person-to-person connectivity” (cited in Wesch 2008). Many people, including students, are using the Internet to connect with real-world audiences and, in so doing, are redefining what it means to be a citizen (Partnership for 21st Century Skills 2010).

As the concept of citizenship changes, so too does the way in which people participate in the political process. Traditionally, citizens have participated in the government by joining political parties and voting in elections. However, participation rates in elections have steadily declined. At the same time, other forms of political participation (such as petitions, demonstrations and boycotts) have increased (CERI 2008). The advent of the Internet and social media has been largely responsible for this increase in alternative forms of participation. Given the evolving concept of citizenship, what role should schools play in fostering civic literacy and in helping students to get their voices heard (CERI 2008)? Schools need to keep abreast of the challenges and opportunities that global social connectivity presents (Robertson 2009). Ironically, schools have been so preoccupied dealing with the pressures of centralization and accountability that they have largely ignored the changes that are occurring in the way citizens participate in society.

The governments of Canada, the United States and the United Kingdom have all attempted to centralize the way in which education is delivered. The result has been a greater emphasis on accountability, calls for education to be privatized, a focus on outcome-based education and efforts to deprofessionalize teachers. Rooted in neoliberal ideology, these changes constitute an attempt to impose practices of the corporate world onto the education system (Taubman 2010) and to perpetuate the view that education is in crisis and in desperate need of reform. The proposed solution is more standardization, accountability and privatization.

Throughout history, schools have often been used to “solve” social or economic ills. Whatever the problem (alcoholism, teen pregnancy, poor drivers, drug abuse), offering students a course on the topic would, so the thinking went, help resolve the issue (Edgoose 2010). Today, ironically, schools

are increasingly seen not as the solution to societal problems but as the source. Arne Duncan, the United States secretary of education under President Obama, for example, recently declared that “our schools are perpetuating poverty and are perpetuating social failure. ... Reform ... is all about jobs. We have to educate our way to a better economy” (cited in Taubman 2010). Comments of this kind are music to the ears of educational reformers who believe that education should be privatized. In the United States, according to Taubman, privatization is being fuelled by two factors. First, education is viewed, to quote Milton Friedman, as “an island of socialism in a free market sea” (cited in Taubman 2010). Second is the realization that privatizing and marketing schools (including the creation of curriculum and exam packages) has the potential to create billions of dollars in revenue for private industry.

The media, politicians (such as President Obama) and mainstream educational organizations are all buying into the view that education is in crisis, a theme that was also explored in the popular film *Waiting for “Superman.”* The solution to the crisis, according to reformers, is to increase productivity by downsizing and/or privatizing the education system, increasing surveillance and developing a generic curriculum. The source of the crisis, according to the reformers, is poor teaching, poor administration, low standards and a lack of accountability. As President Obama put it, “preparing our children to compete in the global economy is one of the most urgent challenges we face. We need to ... start holding communities, administrators, teachers, parents and students accountable” (cited in Taubman 2010).

Public education in Canada is also under attack as politicians call for more central control and accountability. Private schools are also becoming more popular, a trend that could lead to a two-tiered system of education (CCSD 1999). The trend toward privatization is being driven, in large measure, by affluent groups who no longer value public education as a way of providing equal opportunities to all citizens. The increasingly consumer-oriented approach to education—the notion that more choice is needed—is resulting in more private schools and charter alternatives, and an increased focus on learner outcomes and performance indicators. Alberta, with its emphasis on accountability, now has the largest testing and reporting bureaucracy in Canada

(Lessard and Brassard 2005). Murgatroyd (2010b, 274) observes that the focus on high-stakes testing is “corrupting learning ... [so that] results rather than ‘real learning’ become the focus for the work of the system.” The emphasis on using performance indicators to track achievement is evident in the Pan-Canadian Education Indicators Program and similar initiatives throughout the country (CSSD 1999). As provincial governments have assumed more control over education governance and taxation, the powers of school boards have declined.

In the United Kingdom, the education system has been in a state of continual reorganization since the passage of the *Education Reform Act* in 1988. Key themes of the reorganization have been “market discipline, parental choice and new forms of accountability” (Stevenson, Carter and Passy 2007, 1). Recently, the Labour Party has been touting the concept of “new professionalism,” which involves remodelling the school workforce by ensuring that nonteaching tasks are assigned to support staff, thereby enabling teachers to concentrate on the important task of teaching and learning. Unfortunately, the way in which the government has gone about this initiative is to deregulate the credentials required to qualify as a teacher (Stevenson 2007). As a result, unqualified, lower-paid teachers are now in charge of classrooms (Stevenson, Carter and Passy 2007). The United States, through initiatives such as Teach for America, is also being pressed to create alternative routes for teacher certification (Taubman 2010).

Teachers in many countries are feeling themselves “squeezed between the increasing globalization of the concerns driving educational policies and the tendency ... to devolve blame for the ‘failures’ of public education to the local level—they have less control but are held more accountable” (Edgoose 2010, 387). Smaller et al (2005) argue that, in the past, teachers worked collectively to improve teaching and learning conditions. In the United States and the United Kingdom, the emphasis has now shifted to holding individual teachers accountable for how students perform on standardized tests. In some cases, teachers’ salaries, promotion, financial incentives and job safety are being tied directly to student results on standardized tests (Smaller et al 2005; Stevenson, Carter and Passy 2007; Taubman 2010). Some jurisdictions have also attempted to

incorporate professional development practices into this individual accountability framework. In the United Kingdom, Central Professional Development (CPD), for example, requires teachers to undertake professional development specifically focused on raising standards. Such initiatives are based on the premise that teaching is not nearly as complex as teachers maintain and that professional development, as a result, should focus on the technical aspects of delivering content (Stevenson, Carter and Passy 2007). The Government of Ontario abandoned an attempt to introduce compulsory professional development after teachers began boycotting sanctioned events (Smaller et al 2005).

What is ironic about these efforts to centralize education is that they are out of step with the worldwide movement toward a more knowledge-based society that recognizes the complexity of the world and the need for individual learning. As Ogilvy (2006, 33) puts it, the emphasis on imposing standards is “out of step with the information revolution.” Focusing on achieving standards impairs the ability of school districts and schools to meet the needs of individual students. The very supports and system structures that teachers need to prepare students for an information society are “withdrawn from them, hobbling them in their efforts to make great leaps forward in their effectiveness and professionalism” (Hargreaves and Lo 2000, 173). The Netherlands Initiative (OECD 2005) has demonstrated that schools should be focusing on such tasks as helping students acquire languages, appreciate different cultures, relate what they have learned to their local community and acquire the capacity to become lifelong learners. According to the literature, the most effective type of professional development occurs when teachers share innovative practices with one another, an approach that is the polar opposite of the kind of technical, government-controlled professional development advocated by the CPD (Becta 2008a; Hargreaves et al 2009). By being proactive, teachers in Ontario and British Columbia have successfully resisted external attempts to affect their working conditions and reduce their professionalism and autonomy. Stevenson (2007) points out that in addition to resisting attempts to deprofessionalize them, teachers need to articulate a new vision of their profession that centres on learning (Stevenson 2007). Hargreaves and Lo (2000) concur, arguing that teaching is

ultimately about caring for students, a goal that is best achieved in a culture of collaboration.

Trend 6: Fluid Personal Identity

One major factor that affects personal identity is the diversity of the population. The CERI (2001) and the CCSD (1999) predict that, during the 21st century, the population of most OECD countries will become more ethnically and racially diverse. Although the number of immigrant children in Canadian schools is still small in relation to the total population, many schools, particularly in urban areas, are experiencing an influx of students from other countries. Most immigrants are now coming from Southeast Asian and African countries, and two-thirds of immigrant children entering the school system speak neither English nor French. As a result, more and more schools are having to offer specialized programs, including English as an additional language (CCSD 1999).

After acclimatizing to Canada, most immigrant children perform at a level comparable to non-immigrant children. The exception is Afro-Canadian children, who generally have more difficulty adapting to the education system and, as a result, have higher dropout rates. Aboriginal children in Canada also tend to drop out of school at a higher rate than other students, although the situation has improved somewhat in recent years. Cultural groups that experience high dropout rates tend to face social exclusion and fare less well economically. How does the educational system need to change to ensure that these populations attain the same level of education as other groups?

Personal identity is also affected by the changing role of women. As their status in OECD countries has risen, women have played an increasingly important role in the economy (CERI 2001). One factor that has allowed women to become more active is that the average age at which they give birth to their first child has increased from 24.2 in 1970 to 26.6 in 1995. (In Australia, Germany, the Netherlands, New Zealand and Switzerland, the average age is 28.) Another factor that has contributed to the rising status of women in developing countries is that they are better educated, a development that, in turn, has improved the health of their families. According to a report on the Millennium Development Goals, children born to mothers who are better educated

and who are in a better socioeconomic situation are less likely to suffer from malnutrition. Promoting learning and literacy among adults can only improve children's health.

A third major factor affecting personal identity is the profound way in which the family structure has changed during the last few decades. The CERI (2001, 26) defines family structure as "the immediate environments in which young people are raised." The structure of the family has been affected by such factors as a lower fertility rate, a higher overall standard of living (many families are now "work rich but time poor") and an increasing acceptance of divorce. More and more children come from single-parent families, single-child families or blended families. These new family structures have put unprecedented pressure on the school system.

The CCSD (1999) reports that 46 per cent of children under the age of 12 have only one sibling. Rising divorce rates mean that young children are being subjected to major changes in the family structure. As parents remarry or find new partners, children may have to develop relationships with new siblings. Such demographic changes have pressured schools to play a larger role in socializing students and creating a sense of community for children whose home life may be unstable. Forming friendships and having opportunities to play are essential for children. The CERI (2001) argues that schools need to develop a more comprehensive view of educational outcomes, a view that takes into account not only cognitive development but also social development.

These changes in societal and family structures also affect how children establish their personal identity. During the 20th century, children usually belonged to a clearly defined nationality, social class and religion, and their identity was the passively formed product of "national allegiance, common culture and obedience to hierarchical discipline" (CERI 2001, 153). Children in the 21st century, by contrast, will belong to a much more diverse and less rigidly defined set of communities, many of which they will choose for themselves.

Students in the 21st century will have more opportunities to "express choice, exercise autonomy and work at their individual self-realization" (CERI 2001, 16). In helping them to socialize, teachers will need to find ways of "honor[ing] differences while

holding every difference accountable to its influence in the broader public realm” (Smith 2003, 47). Smith argues that honouring differences will help provide students with a foundation for “ethical relation and a theory of justice” that emphasizes the interrelatedness of all humankind.

Trend 7: Blurring Boundaries Between Nature, Culture and Technology

New technologies have clearly presented society and educators with an explosion of opportunities (CCSD 1999; Becta 2008a, 2008b, 2008c; CERI 2001; CERI 2008; Partnership for 21st Century Skills 2010). The ability to use a computer has become as much a prerequisite for student success as the ability to read and write (CCSD 1999).

The fast-paced technological revolution of the last few decades challenges our ability to predict what the world will look like in 20 years. What is clear, however, is that to succeed, individuals, regions and countries will need to acquire new ideas and skills rather than rely on a static set of knowledge (CERI 2001).

In 2008, Becta initiated a research project called *Harnessing Technology Strategy*. According to initial reports from this three-year project, curriculum and pedagogy will need to adapt to the following trends in the use of technology:

- A growing use of Web 2.0 technologies by young people
- The development of mobile, ubiquitous and contextual computing
- The implementation of widespread capital building programs
- An increased demand for technological skills in the workplace
- The transformation of education and training in response to economic, social and technological pressures
- Challenges to the way in which professional development is delivered to the teaching workforce

Clearly, 21st-century learners will use many different technologies at once, depend on mobile technologies for social networking, start using computers in the home from a very early age and watch TV on demand.

Technology offers educators an opportunity to personalize learning, thereby enabling students to learn at a deeper level. Technology, for example, may provide more opportunities for parents to become involved in their child’s learning and for programs to address the

special needs of individual students (Becta 2008b). Web 2.0 tools will not only enable teachers to offer activities that match students’ personal preferences and needs but also allow students themselves to create their own resources. Web 2.0 tools will also provide opportunities for students to participate in online communities involving students not only in their own school but also around the world. Such opportunities will engage students in deeper learning and will help to motivate hard-to-reach learners who often don’t succeed in traditional schools. The CCSD (1999) suggests that, once students start using technology for independent learning, schools may become only one of many venues in which students study. In other words, the importance of the school as a core physical presence may diminish. Should this occur, how will students be socialized and develop a sense of community?

Although social networks and the ability to access information in multiple ways are rapidly changing how students live their personal lives, these technological advances have not yet transformed the structure of schools and the way in which teaching and learning occur in the classroom (Murgatroyd 2010b). Murgatroyd notes that some teachers regard the use of social networking to facilitate learning as a threat to their traditional role. Yet today’s students are digital learners who take in the world through a range of devices, including cellular phones, TV and gaming consoles, PDAs and laptops. People no longer just surf the Web but also make their own contributions using YouTube, Flickr, Wikipedia and personal blogs. Given this reality, should schools focus on providing facts or on teaching students the skills they will need to digest and interpret the information with which they are constantly being bombarded? CERI (2008, 59) suggests that schools will need to help students to “separate the important and the trivial, the good and the bad.”

Much of what people currently do using the Internet and mobile devices tends to be entertainment and, as a result, does not foster media literacy. The Partnership for 21st Century Skills (2010) argues that as the line between education and entertainment blurs, schools need to find ways of embracing technology. Robertson (2009, 289) suggests that teachers can use digital technology to co-construct the curriculum, personalize education and build communities of practice. Instead of preventing students from using social technologies in the classroom, Richardson (2008) argues, teachers should encourage students to use participatory tools to

make their voices heard in society. Richardson suggests, for example, that participating in TakingITGlobal, a social network that focuses on environmental issues, will help students to become “effective citizens in the emerging era of networked publics”(p 56).

Exactly how emerging technologies will affect teachers is difficult to predict. One prediction that has virtually disappeared, however, is the prediction that technology will ultimately replace teachers, thereby rendering education “teacher proof” (CERI 2001). Most futurists are now focusing on how teachers can adapt the new technologies to facilitate learning. Most OECD countries recognize that they will need to spend significant money on technology. In 1999, OECD countries spent a combined \$16 billion (USD) on information and communications technology. Most of this money was used to purchase hardware and software rather than to train teachers. Increasingly, however, these countries are recognizing that teachers need support in learning how to use technology to develop and deliver the curriculum. Becta (2008a, 2008b, 2008c) and the CSSD (1999) have also recognized that teachers need time and support to become “confident pedagogical innovators with new technology” (Becta 2008b, 21). Experts agree that good teaching is just as important as it ever was.

Although technology opens up many new possibilities, it also raises concerns. CERI (2008), Becta (2008a, 2008b, 2008c), the CSSD (1999) and the CERI (2001) note that access to technology is not evenly distributed among the population: children from poorer families do not have the same access as their more affluent peers. This digital divide, the authors note, will exacerbate the disparities that disadvantaged groups already face in terms of accessing education and becoming active members of a knowledge-based society. The CERI (2008) reports a correlation between social class and the access that school-aged children have to the Internet at home. Although 97 per cent of students in more affluent families had access to the Internet at home, only 69 per cent of children in lower socioeconomic families had such access. Families whose main language was not English and lone-parent households also tended to have less access to the Internet.

The CERI (2001) observes that while the Nintendo Generation seems to have a highly developed

competence in using technology, this competence does not necessarily translate into better performance at school. The CERI (2001, 19) concludes that students have become quite skilled at “zapping and surfing rather than [searching] ... for knowledge.” It also points out that citizens of a knowledge economy will require skills other than just those related to technology. Schools, therefore, need to focus on helping students acquire a range of skills, not just knowledge-based skills.

Conclusion

Attempts to predict the future invariably produce a gap between expectation and reality. As an old sage put it, “climate is what you expect, weather is what you get.” Stated in more academic terms, “postmodernism wants what has been lacking. ... [I]t is about desiring. ... [It is] not about being ‘nowhere’ ... but [about being] ‘elsewhere’” (Seibers 1994, 23).

Stevenson (2007) raises some fundamental questions: What is education? Who is it for? Who decides? Depending on who is answering the question, education can be considered as a preparation for work, an exercise in personal development, a way of transmitting culture from one generation to the next, and an opportunity to understand the complexities of the ecosystem and the place of human beings in it. The future will undoubtedly bring about changes not only in the mechanics of teaching but also in the way that teachers relate to their students and to the curriculum. In her essay “The Crisis in Education,” Arendt (1993) explores how teachers can find hope even when they feel overwhelmed by external forces. Hope, Arendt argues, is a belief in the possibility of a better future. Edgoose (2010, 403) sums up Arendt’s argument as follows:

[As educators, we experience hope when] ... we are honest about the challenges we face and open to the unexpectedness of life. What can give us hope, then, are the concrete relationships with our students, our willingness to be there for them and to not be defined by the accountability culture that now saturates schools.

However much teaching may change in response to the seven trends just outlined, the focus, as Arendt reminds us, must remain on fostering positive relationships with students.

Part III: Casting Our Futures

So much of educational reform efforts represent strategies that go straight to the periphery of the issues facing the future of schools.

—Campbell 2010

In this section, we will examine the future of teaching in Alberta over the next 20 years in terms of what is possible, what is probable and what is preferred. In doing so, we will take into account the data collected in the focus groups, the seven trends described in Part II and an analysis of the challenges facing efforts at school reform in North America. The result of this analysis is summarized in Table 2.

Hargreaves and Shirley (2009) observe that efforts at education reform tend to be hampered by three “paths of distraction”: (1) the path of autocracy (governance through forced compliance); (2) the path of technocracy (excessive surveillance through growing bureaucracies and standardization); and (3) the path of effervescence (an obsession with achieving narrow, short-term and unsustainable targets). In their view, high-performing educational systems and jurisdictions in the future will exhibit two features: (1) a culture of responsibility and trust that encourages the local community to become involved and (2) an environment in which teachers and principals are encouraged to use their professional judgment in helping students learn and reporting on their progress.

The number-one priority in a high-performing school should be supporting students who are at risk. Yet, many school reforms go “straight to the periphery” by focusing on such initiatives as merit pay for teachers and better methods of measuring school performance and teacher effectiveness. To avoid such distractions, teachers need to develop strong collegial and community relationships. Being part of a learning community, in turn, will give teachers a greater sense of efficacy and an ability to manage the many opportunities and challenges that the future will present.

Although efforts at educational reform are prone to distraction, there are, nevertheless, developments in a range of disciplines that open up exciting opportunities for the future of teaching and learning in the next decade. Here are three of them.

Advances in the Neurosciences

The explosion of research into how the brain functions has demonstrated that thoughts, feelings and actions are connected. One practical result of this research is to affirm the importance of the arts in a child’s education. After languishing on the edges of the curriculum for years, the arts, including music, are finally finding their way back into the classroom. Reignited by the work of researchers such as James Catterall, Alberta schools are starting to place more emphasis not only on the arts but also on what Matthew Crawford (2009) has called “manual competencies.” Catterall and his associates have shown that music students are far more likely than non-music students to exhibit proficiency in mathematics. In his view, future research will demonstrate that disadvantaged students can benefit from arts programs and problem-based learning that engages their hearts, hands and minds.

Recently appointed to the department of neuroscience at UCLA, Catterall has championed the need to study the neural development of children and youth using diagnostic tools such as MRIs and CAT scans. His team will, for example, examine how children’s brains change as they engage in activities designed to enhance spatial reasoning. Neuroscientists may also study whether digital technologies have a physiological effect on children’s brain development (Anderson 2007). Although the arts have been given short shrift in Alberta’s schools, they thrive in local communities throughout the province. As a result, Alberta could become a lighthouse for research into how exposure to the arts affects brain development.

Distributed Leadership in Uncertain Times

As school communities become more complex and student populations more diverse, teachers will increasingly find themselves leading efforts at school reform. Although administrators and central office staff will continue to play a critical role, teachers will increasingly find themselves researching ways of ensuring that schools remain places of knowledge

creation and ingenuity. As a result, schools will become less hierarchical and bureaucratic.

Because so many variables are involved, a more systematic approach to nurturing and sustaining teacher leaders will be needed if schools are to take advantage of the opportunities ahead. In Alberta, between 1,500 and 2,000 new teachers have entered the profession in each of the last three years. By 2015, as many as 10,000 candidates will be applying to undertake graduate studies in education in Alberta. This potential cohort of future teacher leaders bodes well for the future of education in the province.

Sustaining Communities of Practice

According to the literature on organizational improvement, the most successful school reforms are those in which educators learn as a community.

David Peat, a world-renowned expert on chaos theory and the author of more than 20 books (including *Blackfoot Physics: A Journey into the Native American Universe*), has observed that small but disruptive “gentle actions” can have significant, beneficial effects on complex organic systems like modern society. Peat observes that, in an age in which experts are increasingly seen as fallible, engaged citizens can play an important role in reaffirming the values and ethics of society. Peat (2008) suggests that many small, community-generated interventions (“gentle actions”) can, taken together, have a much greater impact than implementing dramatic, large-scale programs backed by influential stakeholders. One such large-scale program is a concerted effort by private and corporate interests to privatize education, which they see less as a public good than as a lucrative market.

Table 2: The Future of Teaching in Alberta

Trends	Possible Futures	Probable Futures	Preferred Futures
1. Continued dependence on primary resources	- Albertans remain tethered to primary resources as the driving force for their economy and as the source of funding for public services. - Boom–bust cycles continue, making long-term, meaningful changes in education difficult. - School systems continue to be overly bureaucratic and to have little local control over funding options. - Children from poorer families continue to have limited access to educational opportunities.	- As high-performing countries move toward a knowledge-based economy, access to education in some progressive jurisdictions becomes more equitable and the education is of a higher quality. - Albertans struggle to reconcile two competing views: one, driven by fear, sees education as a matter of survival of the fittest; another, driven by hope, upholds public education as a way to create a vibrant future for Alberta. - Schools face increasing pressure to privatize services such as student assessment and the development of learning resources.	- Schools maintain sustained partnerships with communities, enterprises and tertiary education. - Albertans create cultures of ingenuity in schools. - Schools focus on living rather than on preparing for life. - Students become their best selves by relating to others.
2. A growing environmental crisis	- Globalization continues and economic goals remain focused on maintaining continual material progress and achieving profits. - Environmental education continues to be seen as an add-on to already content-heavy courses. - Schools continue to run on the factory model and to downplay the environmental crisis. - The curriculum remains fragmented into externally mandated learner outcomes.	- Advocates for sustainable communities slow the pace of urban sprawl. - Governments realize that economic competitiveness and global sustainability are not mutually exclusive. - The curriculum begins to focus on critical thinking, self-reflection and personal/group decision-making. - Schools focus on teaching students about the world as it is and about how it can change in the future.	- Schools focus on problem-based learning to teach students how human beings are connected to the earth. - Studies in deep ecology and chaos, systems and complexity theories broaden the concept of learning. - Social capital is measured in terms of overall well-being rather than in terms of material growth as measured by the Gross Domestic Product.

Trends	Possible Futures	Probable Futures	Preferred Futures
3. Globalization	- Power increasingly resides in the hands of transnational corporations (which advance an industrial model of schooling) rather than in the hands of governments (which can use schools to promote democratic values and build community). - The gap between the rich and the poor continues to grow. - Schools are pressured to address the needs of employers and, as a result, focus on preparing students for the workforce. - Standardized testing increases in an effort to force schools to demonstrate that they are meeting performance targets imposed by external agencies.	- Schools take a more holistic approach to learning by focusing on the arts and crafts rather than on just the narrow set of skills needed to compete in a globalized economy. - Stakeholders (including teachers, parents and students) struggle to collaborate in the work of learning and building vibrant democratic communities. - Cultures of compliance and bureaucratic accountability (the third way) increasingly clash with cultures fostering creativity and social responsibility (the fourth way).	- Schools in Alberta critique globalization and explore more sustainable approaches to economic development. - Schools honour previously neglected ways of knowing including the wisdom of indigenous cultures, aesthetics, spirituality and altruism. - The social imagination of Albertans is driven by a shared vision that their diversity is an asset.
4. Broadening learning opportunities	- Teachers struggle to provide students with so-called wrap-around services while government ministries continue to work in bureaucratic silos. - Schools continue to operate on the factory model while striving to promote inquiry and introduce multiple forms of assessment. - Schools are knowledge factories overseen by digital learning-management systems and focused on performing well on tests marketed by technology vendors. - Technology is viewed as the best way of creating communities.	- Corporations and technology vendors advance the view that learning should be personalized to meet the needs of the student as customer. - School-based assessment strategies that assess different kinds of learning increasingly come into conflict with the government's efforts to impose standardized competency-based indicators of achievement. - Albertans become increasingly dissatisfied with the view that students, as judged by their performance on standardized tests, are either winners or losers.	- The government ensures that every Alberta student has access to a good school. - Schools focus on teaching students how to live in harmony with the ecosystem. - Schools are vibrant centres of learning. - The curriculum is viewed as an encounter between students and teachers and between the school and the community. - School systems abandon the accountability mentality and focus on professional responsibility.
5. Rethinking citizenship and civil society	- Schools continue to perpetuate the notion that the individual is sovereign and that students are entitled to learn anywhere, at any pace and at any time. - Governments, using digital-learning management systems, enhance accountability frameworks that focus on standardized outcomes. - Driven by cuts to public education, education is increasingly privatized. - Teachers are deprofessionalized, while lower-paid, noncertificated personnel are hired to take charge of students. - Young bloggers use social media to express their views while educators scramble to meet them on "their own turf."	- The importance of public education in fostering citizenship is overshadowed by an insistence that education should be customized to address the needs of the learner. - Teachers want to establish lateral networks whereby they can share innovative practices with one another. - Governments increasingly attempt to tie teachers' financial compensation to the performance of their students on standardized tests. - Professional development for teachers is increasingly geared to boosting student performance on large-scale assessments. - Technology vendors and others with a vested interest in undermining public education continue to charge that education is in crisis and that ineffective teachers are to blame.	- Communities understand that the so-called crisis in education is a product of neoliberal ideology and reject the proposed solutions (downsizing, increased surveillance, privatization). - The concept of learning is broadened to include the personal, social, spatial and spiritual. - Learning is seen as critical to the survival of the human race.

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Trends	Possible Futures	Probable Futures	Preferred Futures
6. Fluid personal identity	- As Alberta's student population becomes more diverse, schools are under growing pressure to offer English as an Additional Language programs. - Family units become increasingly complex and schools are pressured to address students' social needs.	- The educational system develops ways of addressing the needs of marginalized students, while governments continue to underfund public education. - Schools begin to teach students not only about how the world is but about how they can help to change it. - The market-driven approach to personalizing learning begins to clash with the recognition that real learning is built on human relationships.	- School communities not only address students' learning needs but advance policies ensuring that students are ready to learn. - Schools place a priority on teaching students about ethical relationships and justice. - Teachers exercise mindfulness as they participate in holistic communities of practice.
7. Blurring boundaries between nature, culture and technology	- Students attend fortress schools that prepare them for life in an increasingly competitive and frightening world. - The potential of technology to transform learning is thwarted by bureaucratic thinking and an emphasis on large-scale testing programs. - Although schools increasingly use personal, digital technologies, the curriculum continues to be fragmented into discrete subject areas and grade levels. - Students use a wide range of technologies, including social networking. - Funding for technology in schools continues to focus on hardware and software rather than on supporting collaborative professional learning. - Children from poor families continue to have less access to technology than their more affluent peers. - School systems are slow in making changes that would enable schools and teachers to capitalize on new technologies to improve learning.	- Pilot schools allow students to have flexible access to learning based on their own timetable and needs. - Learning increasingly occurs as an encounter between teachers and students. - Teachers and students have opportunities to connect with learners from all over the world. - Teachers and schools attempt to incorporate emerging technologies but are thwarted by school systems that maintain the traditional framework whereby knowledge is fragmented into discrete subjects.	- Students learn different ways of knowing and enhance their appreciation of other cultures by connecting with learners all over the globe. - Schools not only teach students how to use digital technology but also help them to develop manual skills and an appreciation of the crafts. - Learning is less about acquiring facts than about developing multiple literacies. - Schools no longer exist under the shadow of technocracy, standardization and other remnants of the industrial age.

Designing Our Prospective Futures: Alberta Teachers Living in the “Adjacent Possible”

Hope can be what sustains life in the face of despair; and yet it is simply not the desire for things to come, or the betterment of life. It is the driver and energy that embeds us in the world—in the ecology of life, ethics and politics.

—Zournazi 2002, 15

The philosopher and biologist Stuart Kauffman believed that there is a point of complexity at which life is sustainable; below and above that point, life becomes untenable.¹² Kauffman also notes that biospheres, on average, keep expanding into what he calls the “the adjacent possible,” thereby increasing the diversity of what can happen next. In the same way, teachers’ work will become increasingly complex as social and technological changes continue to intensify.

If Alberta’s teaching profession and its organization are to thrive in the future, they will have to navigate what Bussey (2008, 163) calls the “politics of fear and hope” that permeates most discussions about the future of education. The main task for Alberta teachers, as members of a collective professional association, will be to refute the view that schools are “fortresses” and that the purpose of education is to prepare students to do “battle through life” (Bussey 2008, 164). Such a fear-based model of education will not help Albertans create a vibrant civil society and a robust sustainable economy.

In his groundbreaking look at the forces shaping civilizations to the year 2050, Smith (2010, 261) argues that we must set aside both the apocalyptic and the Pollyanna vision of the future. He contends that humankind, far from being at the mercy of such forces as climate change, resource depletion, population growth and environmental degradation, has the capacity to create the kind of future that it wants.

The future of teaching must be built on hope rather than fear. To this end, teachers must critique the neoliberal assumptions that have driven so many of the ill-advised education initiatives that governments have attempted to implement during the last 20 years.

In her book *The Shock Doctrine: The Rise of Disaster Capitalism*, Klein (2008) analyzes the sociopolitical dynamic that has fuelled calls to make schools more competitive and more accountable. Klein argues that right-wing pundits and policymakers deliberately created “a useful crisis” in public education to shock the public into believing that education would be better handled by the private sector. The global downturn of 2008 served to fuel the belief that education is failing.

It is ironic that Alberta, with its abundance of natural resources, should buy into the idea that public education is failing and that schools should be preparing students to do battle with “the other.” Alberta is blessed with \$1.5 trillion in proven oil reserves. Indeed, if the oil were distributed evenly, each Albertan would own 52,000 barrels. At the same time, 1 out of 12 Alberta children lives in poverty (Alberta Teachers’ Association 2010). The economic crisis of the past two years has alerted Albertans to the vulnerability that comes with global interdependence. For every ten-cent drop in the price of natural gas, Alberta stands to lose \$126 million in tax revenue. Amid this volatility and uncertainty, people struggle for meaning and connection. Some turn to technology for answers. Indeed, there are now 3 billion cell phones in the world, and the number of text messages sent and received each day exceeds the population of the entire planet. Alberta teens, like their counterparts across Canada, now spend 7.5 hours a day in front of a screen during the weekend and 6 hours on weekdays.

These economic and societal realities remind us that resources and technologies, however abundant or advanced, can never substitute for human relationships and human ingenuity. Indeed the data from the focus groups and the results of the literature review suggest that creativity and leadership will be our most precious resources and technologies in the future.

Unfortunately, much of the past decade in Alberta—and, indeed, in North America—has been characterized, in Klein’s view, by a climate of fear, uncertainty and roller-coaster investments in public infrastructure that leaves public opinion “unmoored” and citizens “malleable and uprooted.” During this time, the public sector has been portrayed as inefficient and wasteful. The solution often proposed is to dismantle public education and to introduce

12. See, for example, www.edge.org/3rd_culture/kauffman03/kauffman_index.html.

competition, school vouchers and performance pay.

In its analysis of the future forces that promise to transform teaching, the TeacherSolutions 2030 Team proposes a number of breathtaking strategies to “reengineer teaching” (Berry 2011, 167–203). These solutions are all based on the premise that the future will be profoundly different from what we see in schools and communities today. By 2030, according to Berry, the world will have entered an era of “post-literacy” in which “20th-century schools” will be a distant memory (Berry 2011, 92–94):

Public education is cluttered with the detritus of past traditions that are outmoded or—at worst—were not very good ideas to start with. We have in the past adapted much and let go of little or nothing. ... There should be no sacred cows. All aspects of brick-and-mortar schools should be on the block (93).

In a sweeping follow-up, Berry points to the promise of “new technologies [that] are offering us an unprecedented opportunity to reimagine School. We have to rethink the commodity of time, resources and learning for both teachers and students” (Berry 2011, 93). Despite his enthusiasm, Berry concludes that education in the future will be a blend of face-to-face and online education. Always at the core, however, will be “the students and their connection to good teachers” (Berry 2011, 93).

The notion that education is in crisis and that schools should be preparing students to confront the “other” seems to be at the root of the so-called deliverology movement inspired by Sir Michael Barber (2011). Barber is currently the head of McKinsey’s Global Education Practice and a former education advisor to the government of Tony Blair. Barber helped shape educational reforms in the United Kingdom that focused on imposing

performance benchmarks and on raising test scores in literacy and numeracy. Interestingly, a review of New Labour’s track record from 1997 to 2007 in terms of achieving its own social-policy objectives with respect to child poverty, education, social justice and health reveals that it achieved “absolutely nothing.”¹³

Despite the unproven track record of deliverology, Barber’s influence continues to grow not only in the United Kingdom but also in North America and Australia. John Seddon (2008), one of Barber’s major critics, calls deliverology a “Mickey Mouse” idea. He points out that setting “narrow, rigid targets” and buttressing those targets with strong punishments and rewards actually makes services worse.¹⁴ Seddon warns that any command-and-control approach to reform, which fails to engage citizens and communities in developing and implementing policy, is bound to fail.

Unless teachers begin to view themselves as imagineers¹⁵ who have a central role to play in redesigning teaching and learning, Alberta schools will continue under the sway of test-based accountability systems monitored by bureaucrats and policy makers far removed from the classroom.

Forward-thinking system thinkers such as John Seddon, Ray Ison¹⁶ and Giles Paquet¹⁷ argue that transforming complex public services such as health and education cannot happen without rethinking governance in a radical way. Their ideas have implications for the future of teachers and teaching in Alberta.

Canadian teachers can respond to the challenges of globalization and technology by (1) advocating for and determining optimal standards and conditions of professional practice and (2) designing curriculum that engages students in “wicked problems” that pique their curiosity and passion for lifelong learning (Murgatroyd 2010b; Murgatroyd and Couture 2010).

13. See www.youtube.com/watch?v=AHcfNy1_zqA&feature=related.

14. <http://morethanluck.cpd.org.au/more-than-luck/governance-that-works>.

15. Stephen Murgatroyd created this term to describe forward-thinking people in Alberta’s education sector. Murgatroyd’s “Education Charter” provides a framework for how Alberta’s education sector could be transformed. <http://themurgatroydblog.blogspot.com/2009/12/reboot-alberta-education-charter.html>.

16. Ray Ison, “Governance That Works” at <http://morethanluck.cpd.org.au/more-than-luck/governance-that-works>.

17. In *Scheming Virtuously: The Road to Collaborative Governance*, Paquet illustrates how most reformers, faced with short timelines, tend to tweak bureaucratic structures and tinker with formal role descriptions rather than implement meaningful changes. They also fail to address the need to transform how information (including “bad news”) flows in the system (Paquet 2009, xix).

In an upcoming book on educational innovation and development, Pasi Sahlberg identifies two forces that prevent teachers from being more innovative. The first is what he calls the global educational reform movement or GERM (Sahlberg 2011). The influence of GERM in Alberta can be seen in the adoption of a narrow curriculum that focuses on basic knowledge and skills in so-called core subjects, the implementation of common standards for teaching practice and school leaders, and the fixation on accountability measures. GERM also fuels competition among schools and discourages them from networking with one another. The second impediment to innovation—all too familiar in Alberta—is the expectation that schools should help the economy grow and to make citizens more competitive. Alberta, in other words, is caught in a global race to achieve the highest growth in GDP, a race that not only causes Albertans to fear their global competitors (the “other”) but also pressures students to focus too early and, at times, too obsessively on their career pathway. To prepare students for the world of work, schools, in turn, are pressured to concentrate on teaching basic literacy and numeracy skills. In such a climate, courses in the creative arts and crafts are often neglected, and risk-taking and innovation are discouraged.

According to Sahlberg (2011), high-performing jurisdictions share three characteristics:

1. They have internal conditions of practice that respect the professional intuition of teachers, allowing them to build knowledge and skills to craft the best learning environments for their students.
2. They exist in a social context that encourages students to learn.
3. They encourage teachers to undertake research that contributes to the public’s knowledge about how learning best takes place.

Building on the strength of its already-strong teaching force, Alberta can foster school cultures of creativity and ingenuity by supporting school-based research and innovation, experimenting with new teaching practices and redesigning the curriculum. The Alberta Initiative for School Improvement has already shown great promise in this regard.¹⁸

Inayatullah (2008, 37) observes that “futures thinking does not wish to condemn us to hope alone.” Creating a new future is more than an analytic exercise. In considering the future, the teaching profession in Alberta and its Association must answer two fundamental questions: (1) In advancing public education, what kind of teachers do we want to become? and (2) What kind of Association do we need to be to support this work? To answer these two questions, the Association, over the past few years, has organized a series of community-based dialogues. Based, in part, on those conversations, the Association has published *Changing Landscapes for Learning Our Way to the Next Alberta*, a publication that describes the various trends that will affect teaching and learning in Alberta in the next few years. Participants in the community dialogues are encouraged to consider three questions:

1. What is the Alberta that the world needs to see?
2. What kind of Albertans do we need to become to get there?
3. How will leadership in learning help us become our best selves?

In helping to create the kind of Alberta that participants in these dialogues said they wanted to see, teachers and their Association will focus on four areas:

1. *Individuals, relationships and community*: The Association will attempt to take up the challenge issued by Arendt (1993), who wrote that “education is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, not to strike from their hands their chance of undertaking something new, something unforeseen by us, but to prepare them in advance for the task of renewing a common world” (p 180).
2. *Work and the economy*: The goal is to create and sustain a culture of ingenuity that recognizes that the purpose of schooling is not to prepare students for a career but to equip them with the skills to engage in lifelong learning. Such learning will require the development of new partnerships and institutions in both the private and public sectors.

18. For a full account of the impact of AISI, see *The Learning Mosaic: A Multiple Perspectives Review of the Alberta Initiative for School Improvement (AISI)*. www.education.alberta.ca/media/1133263/the%20learning%20mosaic.pdf.

3. *Governance, government and politics*: Good leadership is perhaps the scarcest technology for teachers. To sustain creative leadership, the education community needs to move beyond the current politics of division.
4. *Emerging technologies*: Our technologies, though in some ways sophisticated, are not sufficient to address environmental challenges. The ecosystem, like our social and financial institutions, is brittle. As a result, we need to build connections to ensure that we are resilient in times of dramatic social and political change.

In its Preferred Futures, the Association identifies 10 attributes of the organization that it wants to become in the future. Three of these attributes concern the Association's role in cocreating, with

Albertans, a culture of learning and innovation that will enhance student learning:

- The Alberta Teachers' Association has legislated jurisdiction in key areas of professional practice.
- Alberta teachers and their professional association are widely respected and valued for their commitment to enhancing learning opportunities for children.
- The Alberta Teachers' Association is a respected authority in educational policy development, research and practice.

As John Scharr (Alberta Teachers' Association 2010) observes, "the future is not some place we are going to, but one we are creating. The paths are not to be found, but made, and the activity of making them changes both the maker and the destinations."

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