

# **Sustainable Development and Living through Changing Teacher Education and Teaching in Manitoba**

## **Research Report**

*written by*

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*presented to*

**Manitoba Education  
and  
Canadian Council on Learning**

**October 2010**

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## ACKNOWLEDGEMENTS

This project was made possible through the vision of Heather Hunter from Manitoba Education, who gave us the room for conceptualizing and enacting this research project and who helped securing the financial support for it. We are also indebted to the two funders of the research study, Manitoba Education ([www.edu.gov.mb.ca](http://www.edu.gov.mb.ca)) and the Canadian Council on Learning ([www.ccl-cca.ca](http://www.ccl-cca.ca)). Without their financial support, this study would not have happened. We also like to thank the Canadian Council on Learning for its permission to reproduce Figure II-1 (Métis Holistic Lifelong Learning Model) in this report.

We also like to express our appreciation to the many participants in the research study, who generously gave us some of their precious time to be interviewed. Likewise, we do want to thank our colleagues from the field and the academy who were part of this research as leaders of the seven projects that were part of this larger research study. Their reports are part of this Research Report. (For a list of the project leaders see their reports in Part III.) The discussions with them in our Larger Group meetings, their reports of their projects, and their understanding of and insights into education for sustainability have helped us greatly in shaping of our own views and perspectives.

We also want to recognize the contributions to this project by Anne MacDiarmid and Carolee Buckler. Anne is the Sustainable Development Consultant and Carolee is the Sustainable Development Coordinator with Manitoba Education. Both have contributed to this report and have shared their expertise with us and the other project teams in our project meetings.

We also want to acknowledge the help that we received with transcribing, managing the finances, and web searching by Daniela Smith-Fernandez, Sylvia Lapointe, and Jennifer Watt.

Last but not least, we want to thank our research collaborators and report co-writers: Frank Deer, Sheila Giesbrecht, and Sabena Singh. Their contributions to this project and this report are very much appreciated.

October 2010

Gary and Thomas



# INSTEAD OF AN EXECUTIVE SUMMARY: A GUIDE THROUGH THE REPORT

Executive Summaries are common in research reports. For this report, however, we have decided to forgo an Executive Summary in favour of a guide through this Report. Such a Guide, we hope, will help the reader orient herself in this rather lengthy Report without sacrificing the depth of the arguments made, the foundations for the findings presented, and the range of the findings described in this Report.

The Research consists of **three major parts**:

- Report of the Baseline Study (Part II);
- Reports of seven individual research projects (Part III);
- Recommendations based on the findings of the eight reports (Part IV).

We recommend that the reader goes to the short introductions of the respective Part first before proceeding further within the Part.

## **Baseline Study (Part II):**

*Sections II-3 and II-4<sup>1</sup>:*

present conceptual and empirical research literature on sustainability and systems theory, Aboriginal perspectives on sustainable living, education for sustainable living, educational change, pre-service teacher education, professional development, holistic education, integrated curriculum, and inquiry-based teaching and learning;

*Section II-5.1:*

summarizes and discusses findings of a scan of professional learning opportunities focused on sustainable living within Manitoba;

*Sections II-5.2 and II-5.3:*

present the findings from data collected on the current state of education for sustainability in Manitoba school divisions;

*Section II-5.4:*

presents the findings from data collected on the current state of education for sustainability in Manitoba faculties of education.

## **Seven Individual Research Projects (Part III):**

Each section in this Part reports on one of the seven individual research projects with different research teams that each inquired into a particular aspect of the education for sustainability. (See the Introduction to Part III for further details.)

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<sup>1</sup> “Section II-3” refers to section 3 in part II; and “section III-2.3.1” refer to section 2.3.1 in Part III.

**Recommendations (Part IV):**

The findings from the Baseline Study and the seven individual research projects gave rise to a number of recommendations for how to move education for sustainability further ahead in the school system of Manitoba in particular and, by extrapolation, other Canadian provinces. For each recommendation we provide a rationale that draws on the research findings of the Baseline Study and the seven individual research projects.

The recommendations in Part IV are divided according to whom they are addressed:

- Recommendations to the government (Manitoba Education) (section IV-2);
- Recommendations to school divisions (section IV-3);
- Recommendations to school-based educators (section IV-4);
- Recommendations to faculties of education (section IV-5).

# PART I

## DESCRIPTION OF THE RESEARCH PROJECT

*The following is the slightly adapted description of the research project as it was conceptualized in 2008.* The research project was developed in response to bilateral discussions between Manitoba Education and the Canadian Council on Learning (CCL) with respect to the strategic advancement of partner education research activity. The project was coordinated through the Manitoba Education Research Network (MERN) with Gary Babiuk and Thomas Falkenberg from the Faculty of Education, University of Manitoba as the two co- principal investigators working with a number of research teams.

In Canada, school education is one of the central and probably most promising ways of influencing human attitude, action and commitment toward a sustainable way of living that takes into consideration human health and well-being not just of the current but also of future generations.

This research project builds on these understandings and involved a systematic inquiry into and development of possible action to impact education for sustainability in Manitoba schools with implications for the national and international context. Supporting education for sustainability has to involve supporting the teaching in schools and, thus, teachers, who are the ones designing meaningful student engagement with issues that matter. Thus, the focus of the research project will be on the preparation of teachers (pre-service teacher education and professional development) and on teaching practices in schools in Manitoba.

Poverty and inequitable access to quality education contribute to unsustainable living as much as environmental pollution and the exploitation of resources without giving appropriate consideration to future life on earth. In the Canadian context, such a wider sense of sustainable living will include the concern for rural and northern living and the lives of Aboriginal people.

In Canada, school education is one of the central and probably most promising ways of influencing human attitude, action and commitment toward a sustainable way of living that takes into consideration human health and well-being not just of the current but also of future generations.

Since educational change is framed and often driven by policy changes, the research project inquired also into policy frameworks at the school, divisional and ministry level that might support education for sustainability.

Although the research focused on the Manitoba context to support action, practice and policy decisions in Manitoba, the project built on research done in the area of sustainability (in the wider sense used here) in other national and international contexts, and insights and understandings gained through the research project for the Manitoba education and policy context will be applicable to other contexts as well. In particular the fact that teacher education programs as well as schooling have similar, although not identical practices and policy frameworks across Canada will make findings from the research project relevant to other jurisdictions across Canada, for instance impacting provincial policies on curriculum, assessment and instruction with respect to education for sustainability.

The purpose of the research project was:

- to identify the attitudes, competencies and understandings that are required for teachers to prepare students in Manitoba schools for sustainable living (understood in the wider sense explicated above);
- to identify possibilities in existing teacher education programs and professional development opportunities to support the development of those attitudes, competencies and understandings in teacher candidates and teachers in Manitoba;
- to identify structural and pedagogical changes that would need to be made to existing teacher education programs and professional development opportunities to support the development of those attitudes, competencies and understandings in teacher candidates and teachers in Manitoba;
- to assess the impact of developed teaching material and practiced teaching strategies in teacher education programs on student teachers' development of those attitudes, competencies and understandings;
- to assess the impact of developed teaching material and practiced teaching strategies on student engagement and learning for sustainable living in schools in Manitoba;
- to identify policy requirements at the school, divisional and ministry level to support education for sustainable development and model sustainability in school operations.

The research project was structured as a collaboration of a number of research teams that are committed to the research purpose of the project and that each would inquire into particular aspects of the problem of education of sustainability in Manitoba. For that purpose, a call was sent out for research proposals. Seven submissions by research teams for research studies were selected. As a consequence, the research project consisted of:

- a baseline study, undertaken by the two PIs of the research project, that inquired into the current state of education for sustainability in Manitoba's pre-service teacher education programs and in school divisions in Manitoba;
- seven separate research projects with different research teams that each inquired into a particular aspect of education for sustainability.

# PART II

## BASELINE STUDY

### 1 Introduction to Part II

As described in Part I, the Baseline Study inquired into the current state of education for sustainability in Manitoba's pre-service teacher education programs and school divisions and gave particular consideration to the preparation of teachers (pre-service teacher education and in-service teacher professional development).

The study drew its data from three main sources (for more details, see the following section II-2 on the methodology of the study):

- conceptual and empirical research literature on sustainability and systems theory, Aboriginal perspectives on sustainable living, education for sustainable living, educational change, pre-service teacher education, professional development, holistic education, integrated curriculum, and inquiry-based teaching and learning;
- information on the current state of education for sustainability in Manitoba from different publications, like websites and print sources; and
- interviews with Manitoba educators, like superintendents, principals, teachers, members of faculties of education.

The Baseline Study Report (Part II of this Research Report) consists of five major sections:

*Section II-1:* this introduction;

*Section II-2:* the methodology section for the study;

*Section II-3:* a section on the fundamental ideas relevant to the purpose of the Baseline Study: fundamental ideas around sustainability and systems theory, Aboriginal perspectives on sustainable living, and education for sustainability;

*Section II-4:* a section on conceptual and empirical research literature on teaching and teacher development that we considered relevant to the purpose of the Baseline Study; and

*Section II-5:* a section on our analysis of the data collected on the current state of education for sustainability in Manitoba's pre-service teacher education programs and in school divisions.

As part of our inquiry into the current state of education for sustainability in Manitoba's pre-service teacher education programs and school divisions we have also inquired into the state and understanding of teacher professional development in Manitoba, because if a province, a school division, or a school wants to move toward implementing approaches toward education for sustainability, teacher professional development will be a key component of any change process connected with such a move. The same is true for teacher education faculties. The Baseline Study Report reflects this view of the importance of the role of teacher professional development in any change process.

The traditional term used for what the Research Project in general and this Baseline Study in particular inquired into is “Education for Sustainable Development (ESD)” (see section II-3.1.2). However, in our judgement, the phrase “sustainable development” is problematic in the context of the state of affairs in *developed* countries, because the connotation of the phrase links it for us to the kind of economic and social development that we see as being in conflict with core principles of living sustainably (see the discussion in section II-3.4).<sup>2</sup> In this light, a term like “sustainable re-development” or even “sustainable un-development” might be more appropriate for *developed* countries, since even current economic and social living practices in developed countries cannot be sustained considering (a) the current over-size ecological footprint of developed countries and (b) the moral imperative of sharing wealth with our fellow humans in developing countries. However, in the context of *developing* countries, the phrase “sustainable development” and, thus, “education for sustainable development”, seems to us appropriate, because those countries do need to develop further and their economic and social development needs to be *sustainable* development.

Because our language use generally shapes how we think about matters, and for the reasons just outlined, we have decided to use the term “education for sustainability” rather than “education for sustainable development”. Readers who prefer the latter, may substitute the latter whenever they read the former. Nevertheless, in some cases in section II-5 we have used the terms “education for sustainable development” and “ESD”, because those terms were more familiar to interviewees through their use by Manitoba Education.

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<sup>2</sup> Two of the interviewees from faculties of education, without having been prompted to do so, have expressed the same view about the term “Education for Sustainable Development”.

## 2 Methodology

This section describes participants, the types of data collected, and the analysis process of the data for the Baseline Study. We have structured this section by the type of data we have collected and analysed.

### 2.1 Research Literature

We consulted conceptual and empirical research literature on sustainability and systems theory, Aboriginal perspectives on sustainable living, education for sustainable living, educational change, pre-service teacher education, professional development, holistic education, integrated curriculum, and inquiry-based teaching and learning. By necessity, the consulted literature had to be quite limited relative to the vast amount of literature available for this range of areas. The selection of the conceptual and empirical research literature was guided by the purpose of building a larger context for the idea of education for sustainability. Especially since the Research Report was to include recommendations to the different educational institutions involved with education and schooling in Manitoba and, by extension, Canada, those recommendations could not be based solely on data provided by a still relative small sample of educators on the issue of education for sustainability. Hence, the consideration of conceptual and empirical research literature formed a central building block of the data collection for the Baseline Study. The main ideas and finds of the selected research literature were summarized for this Study and linked to the findings from the other data collected, to provide a more solid rationale for the recommendations in this Study (see Part V).

### 2.2 Individual Interviews

#### *Recruitment*

Letters were sent out by e-mail to the superintendents of all school divisions in Manitoba outlining the Study and requesting their participation in a one-on-one interview. Where we interviewed a superintendent or assistant superintendent, we followed up with another letter by e-mail requesting to forward an e-mail to school-based educators in the respective division whom the superintendent or assistant superintendent felt could contribute to the Study. That letter requested the school-based educators to participate in a one-on-one interview.

In addition to those school-based educators contacted through their superintendent or assistant superintendent, we invited to a one-on-one interview also school-based educators we heard about or had contact with and who we felt could contribute to the Study.

We also invited to participate in the Study through one-on-one interviews representatives of four province-wide education associations that play a major role in teaching and schooling in Manitoba: the Manitoba Teachers' Society (MTS), the Council of School Leaders of the

Manitoba Teachers' Society (COSL, representing school principals and vice-principals in Manitoba), the Manitoba Association of School Superintendents (MASS), and the Manitoba School Boards Association (MSBA).

For the part of the Study that inquired into the state of education for sustainability at faculties of education in Manitoba, we invited an administrative faculty member as well as another, non-administrative faculty member who we knew is interested in education for sustainability to participate in the Study.<sup>3</sup>

All recruitment procedures were in accordance with the approved research protocol outlined in our application for a Certificate of Approval by the Research Ethics Board of the University of Manitoba.

### *Participants*

For the Study we interviewed:

- 15 school superintendents or assistant school superintendents from 15 different school divisions in Manitoba;
- 6 school-based administrators or consultants;
- 4 representatives of province-wide education associations: one from MTS, one from COSL, one from MASS, and one from MSBA;
- 9 members of faculties of education; an administrative faculty member from each of Manitoba's five faculties of education, and one non-administrative faculty member from four of the five institutions.

### *Interviews*

The one-on-one interviews were designed as semi-structured interviews, which were guided by a set of prepared questions, but which allowed for follow-up questions to interviewees' responses. Although the actual guiding interview questions varied, depend on the type of education institution an interviewee worked at (school, school division, faculty of education, educational association), the interviews were guided by the following general topics

- understanding of what education for sustainability is;
- role of and / or experience with education for sustainability within or from the perspective of the educational institution the interviewee is working at;
- challenges of implementing education for sustainability in generally and in Manitoba specifically;
- possibilities of implementing education for sustainability in generally and in Manitoba specifically;
- conditions required for implementing education for sustainability in generally and in Manitoba specifically;
- view of effective teacher professional development;

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<sup>3</sup> There are five faculties of education with teacher education programs in Manitoba: at the University of Manitoba, at the University of Winnipeg, at the Collège de Saint Boniface, at Brandon University, and at the University College of the North. Red River College in Winnipeg provides programs to become a business, technology, industrial arts, or technical vocational teacher, however, these programs are joint programs with the pre-service teacher education program of the University of Winnipeg.

- role of and / or experience with teacher professional development within or from the perspective of the education institution the interviewee is working at.

The interview procedures we employed were in accordance with the approved research protocol outlined in our application for a Certificate of Approval by the Research Ethics Board of the University of Manitoba.

#### *Data Analysis*

All interview data (in transcribed form) were grouped according to the educational institution the interviewee worked at. The data within each group were analysed in terms of common issues (themes) that were raised by the different interviewees in response to the different topics addressed in the interview.

### **2.3 Focus Group Discussions**

#### *Recruitment*

Four of the seven other research studies undertaken as part of this Research Project were linked to professional development projects in schools, in school divisions, or across school divisions (see sections III-5 through III-8). Through the project leaders, participants of those field-based projects were invited to participate in focus group discussions for the purpose of collecting data for the Baseline Study.

All recruitment procedures were in accordance with the approved research protocol outlined in our application for a Certificate of Approval by the Research Ethics Board of the University of Manitoba.

#### *Participants*

Members of all four professional development projects (for the projects see the reports in sections III-5 through III-8) participated in a number of different focus group discussions. One focus group interview / discussion per project was documented.

#### *Interviews*

Some of the focus group interviews were semi-structured with the use of a set of prepared interview questions. Other focus group interviews were more a discussion among the group participants about issues related to their project that were raised by the participants themselves.

The focus group interview procedures we employed were in accordance with the approved research protocol outlined in our application for a Certificate of Approval by the Research Ethics Board of the University of Manitoba.

#### *Data Analysis*

All interview data (in transcribed form) were analysed in terms of the issues (themes) that were raised in the interviews / discussions in light of the guiding questions for the individual interviews (see section II-2.2).

## **2.4 Research Team Meetings**

As part of the research plan the two principal investigators (PIs) of the Research Project conducted group meetings with all seven research group members. In total five such large group research meetings were held: 13<sup>th</sup> May 2009, 9:00-15:00; 7<sup>th</sup> October 2009, 13:00-16:00; 2<sup>nd</sup> December 2009, 13:00-15:30; 3<sup>rd</sup> Feb 2010, 13:00-16:00; and 13<sup>th</sup> April 2010, 12:00-16:00. These meetings included both an administrative agenda as well as structured focus group discussions that were facilitated by the two PIs. Those focus group discussions were audio-recorded and later analysed in terms of the issues (themes) that were raised in the discussions in light of the guiding questions for the individual interviews (see section II-2.2).

The recruitment and focus group interview procedures we employed were in accordance with the approved research protocol outlined in our application for a Certificate of Approval by the Research Ethics Board of the University of Manitoba.

## **2.5 Documents and Websites**

Policy and planning documents and websites of Manitoba Education, Manitoba School Divisions, Manitoba Universities and Manitoba educational organizations and associations were reviewed for pertinent information on education for sustainability, pre-service teacher education, and professional development.

## 3 Foundational Ideas

### 3.1 The Concept of Sustainability

#### 3.1.1 Sustainability: A Human Problem

Sustainability is *not* a problem of and for the planet Earth. Whatever humans do, the Earth will still function as a planet in some way, as it has functioned as a planet over billions of years in some way, at some time uninhabitable to life, later inhabitable to life, at some time providing challenging conditions for human living (ice age), at other times providing more conducive conditions for human living. *The problem of sustainability is a human values problem*, because sustainability is about sustaining something, and what that ‘something’ is is (at least in its major part) a matter of human choice based on values. When Lester Brown introduced the concept of sustainability (see section II-3.1.2), he used the phrase “sustainable society” and defined a sustainable society as one that is able to satisfy *its needs* without diminishing the chances of future generations to satisfy its needs. What a society’s needs are – maybe with the exception of basic survival needs – is a matter of societal values. The problem of sustainability, then, is *the problem of creating and sustaining the conditions for a particular way of human living for the current generation and future generations*. Thus, *the problem of sustainability is a human, value, and responsibility problem* (responsibility toward future generations).

Often the problem of sustainability is seen as the problem of sustaining an inhabitable natural environment – and the terms “ecology” and “ecological” have primarily been used with reference to the natural environment for the last few decades. However, what we said in the previous paragraph shifts our primary *ecological* concern from the protection of the natural environment (the earth) to the concern for the creation and protection of a valuable *human ecology*, i.e. the living conditions in all its aspects for the current generation and future generations of humans – although, of course, as many other domains of human living, the natural environment can, and many argue should, have an intrinsic value to humans. It is because of this concern for the creation and protection of a valuable human ecology that we should be concerned for the natural environment, because the state of the natural environment at a given time impacts the quality of life of the generation at that time, since humans are an integral, dependent part of that natural environment.

Conceptualizing the problem of sustainability as a human, value and responsibility problem leads to the central question of *what* kind of human ecology is to be sustained – for the current generation and for future generations. From the historical beginning of the development of the concept of “sustainable development” the response to the question of what it is that needs to and should be sustained was seen as having to be a multi-strand response that considered the different domains of human living, like the natural, the socio-cultural, the physical (health), and the socio-economical domains of human living (see section II-3.1.2). The notion of “human well-being” (see section II-3.1.3) has emerged as an attempt to comprehensively capture the multiplicity of human needs that would need to be considered in response to the question of what kind of human ecology is to be developed and sustained.

That leads to the important, second question of *how* that kind of human ecology is to be developed and sustained. The idea of sustaining a particular ecology of human living suggest as a

promising first-part response to this question to conceptualize human ecology as a *complex system* of the different aspects that make up that ecology and to conceptualize the problem of sustaining this complex system as the problem of making this system *resilient*. Section II-3.2 discusses briefly the idea of sustaining the ecology of human living as the resilience of a complex system. The second part of the response to the how-question draws on the conceptualization of the problem of sustainability as a value and responsibility problem. Value and responsibility issues lead to *education* as a central focus, and in the context of sustainability to *education for sustainability*. Section II-3.4 discusses some of the ideas presented in the literature on education as a response to the problem of sustainability.

Traditional Aboriginal perspectives on human living have conceptualized what we now call the problem of sustainability as a problem of responsibility toward future generations and as a value problem, the latter of which was responded to by emphasizing humans being an integral part of the natural environment. Section II-3.3 discusses this traditional Aboriginal perspective and its great value for the problem of sustainability and the educational response to this problem.

### 3.1.2 Sustainable Development: A Historical and Systematic Perspective

Capra (2002) notes on the origin of the concept of sustainability:

The concept of sustainability was introduced in the early 1980s by Lester Brown, founder of the Worldwatch Institute, who defined a sustainable society as one that is able to satisfy its needs without diminishing the chances of future generations. Several years later, the report of the World Commission on Environment and Development (the ‘Brundtland Report’) used the same definition to present the notion of sustainable development: ‘Humankind has the ability to achieve sustainable development – to meet the needs of the present without compromising the ability of future generations to meet their own needs.’ (p. 229)<sup>4</sup>

In another place of its report the World Commission on Environment and Development (WECD, 1987) writes: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p. 43). The WECD received its mandate from the Secretary General of the United Nations in 1983 (WECD, 1987, p. ix), and its definition of “sustainability” has since been used as a reference in the work by the UNESCO Section for Education for Sustainable Development (McKeown, 2006, p. 10) and by the Manitoba provincial government (Manitoba Education and Training, 2000, p. 5).

In its report the WECD is quite explicit about “sustainable development” coming with a responsibility toward all countries and people: “Thus the goals of economic and social development must be defined in terms of sustainability in all countries – developed or developing, market-oriented or centrally planned” (1987, p. 43). Furthermore, the WECD makes clear that its notion of “sustainable development” is not limited to a concern for the sustainability of the “physical” ecology of human living, but that essential needs of all people will need to be met in a sustainable way:

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<sup>4</sup> See Brown (1981) and World Commission on Environment and Development (1987).

Development involves a progressive transformation of economy and society. A development path that is sustainable in a physical sense could theoretically be pursued even in a rigid social and political setting. But physical sustainability cannot be secured unless development policies pay attention to such considerations as changes in access to resources and in the distribution of costs and benefits. Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation. . . . The satisfaction of human needs and aspirations is the major objective of development. The essential needs of vast numbers of people in developing countries – for food, clothing, shelter, jobs – are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life. Living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long-term sustainability. (WECD, 1987, pp. 43-44)

It is clear from this quote that for the WECD the concept of sustainability (sustainable development) is a *multi-strand* concept that considers different aspects of the ecology of human living like the natural environment, the economy (including equitable access to and distribution of resources), the social context, and aspects linked to other basic human needs. However, what those aspects of the ecology of human living specifically are varies among those who promote sustainability, even if they make reference to the same general definition of sustainability by the WECD. For instance, publications by the Section for Education for Sustainable Development of the UNESCO (see, for instance, McKeown, 2006; Hopkins & McKeown, 2005) use the following conceptualization:

Sustainable development has three components: environment, society, and economy. If you consider the three to be overlapping circles of the same size, the area of overlap in the center is human well-being. As the environment, society, and economy become more aligned, the area of overlap increases, and so does human well-being. (McKeown, 2006, p. 11)

On the other hand, publications by Manitoba Education (the ministry of education in Manitoba) promote the notion that when considering sustainable development the impact on the following three domains of human living need to be considered: human health and well-being, environment, and economy; and all three domains come together as determining the quality of life (Manitoba Education and Training, 2000, p. 6). Issues of social and economic equity are considered in this model as well (Manitoba Education and Training, 2000, p. 7).

Andres Edwards (2005) discusses what calls “the Sustainability Revolution”, which, he suggests “evolved as a reaction to the Industrial Revolution’s degradation of the environment and our well-being” (p. 6). With the expansion of the concern for sustainability beyond concern for the natural environment in the way just described, Edwards identifies a widespread concern for sustainability and a shift in the way human living is conceptualized and lived to the degree that Edwards speak of a paradigm shift. This widespread concern and paradigm shift has impacted all aspects of human living, for instance, how we work together as a community, how we undertake commerce, how we treat natural resources, how we design buildings, and how we consider the biosphere. In the main part of his book Edwards uses the new thinking and the new initiatives in

these five domains of human living to analyses what characterizes the paradigm shift, the Sustainability Revolution. He comes to the conclusion that there are seven common themes across these five domains of human living to characterize the paradigm shift: stewardship, respect for limits, interdependence, economic restructuring, fair distribution, intergenerational perspective, and nature as a model and teacher.

*Stewardship* emphasizes the importance of establishing an ecological ethic for managing and preserving the biological integrity of ecosystems. . . .

*Respect for limits* calls for living within nature's means y preventing waste, pollution and sustainable resource depletion. . . .

*Interdependence* covers not only the ecological relationships between species and nature but also economic and cultural ties at the local, regional and international levels. . . .

*Economic restructuring* appears in many principles as a need for expanding employment opportunities while safeguarding ecosystems. . . .

*Fair distribution* speaks to the importance of social justice and equity in areas such as employment, education and healthcare. . . .

*Intergenerational perspective* emphasizes the need for a long-term rather than a short-term view to guide the critical choices facing society. . . .

*Nature as a model and teacher* acknowledges the 3.5 billion years of evolution of living systems and nature's significance as a reservoir of 'expertise'.

(Edwards, 2005, p. 128-129)

Compared to the general definitions of sustainability (sustainable development) discussed before, these characteristics of the paradigm shift in these different domains of human living provide a more concrete framework for the educational imperative that comes with such a paradigmatic shift: as the Industrial Revolution required a particular education system to support and sustain that revolution, the Sustainability Revolution as characterized in these seven themes requires an education system (formal, non-formal, as well as informal) that support the new revolution by helping children and adults to develop the necessary knowledge, attitudes, and skills.

Talberth (2008) discusses how the Sustainability Revolution that Edwards identifies has led to the development of indicators that can be and are used to assess progress toward sustainable living as it is characterized by the seven themes.

### 3.1.3 Human Well-Being

The notion of "human well-being" has emerged in some approaches to sustainability (sustainable development), as in the UNESCO publications referenced section II-3.1.2, as an attempt to comprehensively capture the multiplicity of human needs that would need to be considered in response to the question of what kind of human ecology is to be developed and sustained. Another, recent initiative by the Secretary-General of the United Nation lead to the *Millennium Ecosystem Assessment* ([www.maweb.org](http://www.maweb.org)):

The Millennium Ecosystem Assessment (MA) was called for by the United Nations Secretary-General Kofi Annan in 2000. Initiated in 2001, the objective of the MA was to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems

and their contribution to human well-being. The MA has involved the work of more than 1,360 experts worldwide. Their findings, contained in five technical volumes and six synthesis reports, provide a state-of-the-art scientific appraisal of the condition and trends in the world's ecosystems and the services they provide (such as clean water, food, forest products, flood control, and natural resources) and the options to restore, conserve or enhance the sustainable use of ecosystems. (<http://www.maweb.org/en/About.aspx>)

The Millennium Ecosystem Assessment identifies five aspects of human well-being:

- *security*: personal safety, secure resource access
- *basic material for good life*: adequate livelihoods, sufficient nutritious food, shelter, access to goods
- *health*: strength, feeling well, access to clean air and water
- *good social relations*: social cohesion, mutual respect, ability to help others
- *freedom of choice and action*: opportunity to be able to achieve what an individual values doing and being

(see Hassan, Scholes, & Ash, 2005, p. 28)

Similar characterizations have resulted from attempts to identify human well-being as the central notion for assessing quality of life and as a central measure for public policy to replace the more traditional focus on solely economic measures like the Gross Domestic Product (GDP). One such attempt within the Canadian context has led to the development of the CIW, the *Canadian Index of Wellbeing* ([www.ciw.ca](http://www.ciw.ca)). The CIW

begins with the belief that our cornerstone value as Canadians is the principle of “shared destiny”: that our society is often best shaped through collective action; that there is a limit to how much can be achieved by individuals acting alone; that the sum of a good society and what it can achieve is greater than the remarkably diverse parts which constitute it.

From this cornerstone principle of shared destiny and collective action, and from extensive public consultations with Canadians, a number of core consensus values informed the development of the CIW: fairness, diversity, equity, inclusion, health, safety, economic security, democracy, and sustainability.

([www.ciw.ca/en/AboutTheCIWNetwork/ReflectingCanadianValues.aspx](http://www.ciw.ca/en/AboutTheCIWNetwork/ReflectingCanadianValues.aspx))

Based on these core values, the CIW consists of eight interconnected categories of well-being:

- living standard
- healthy populations
- community vitality
- democratic engagement
- education
- leisure & culture
- time use
- environment

For each of these categories of well-being the CIW identifies a number of indicators that serve as a measure for the degree of well-being among Canadians with respect to the respective category. So far six domain reports about the state of well being of Canadians in those six domain categories have been published on the CIW website ([www.ciw.ca](http://www.ciw.ca)).

Aside from the Canadian Index of Wellbeing a number of other measures have been developed to address the limitations of purely economic measures of well-being, like the Gross Domestic Product (GDP). Some examples of these alternative measures are the Happy Planet Index developed by the New Economics Foundation and Friends of the Earth, and the Gross National Happiness used by the Government of Bhutan.<sup>5</sup>

However, economic development within a more and more globalized market economy seems often as the primary concern for public policy makers, and economic development is generally measured by a country's GDP.

The measure of production for the economy as a whole is *gross domestic product (GDP)*. GDP is the sum, for a particular period, of the *gross value added* of all resident producers, where gross value added is equal to output less intermediate consumption (both of which are defined below). . . . *Output* consists of the value of goods and services produced within a producing unit and available for use outside the unit. (Trevin, 2000, p. 20)

However,

GDP is a measure of production and not a measure of economic welfare. The level of production is important because it largely determines how much a country can afford to consume, and it also affects the level of employment. The consumption of goods and services, both individually and collectively, is one of the most important factors influencing the welfare of a community, but it is only one of several factors. (Trevin, 2000, p. 30)

Similarly, Talberth (2008) suggests that while GDP “is the best-recognized measure of overall economic performance”, it only measures “the economic value of consumption” (pp. 18, 19). As such, measuring societal progress in terms of the economic value of consumption can be counterproductive if it is the human activities of resources consumption that are unsustainable. In addition, GDP does not (a) distinguish between desirable and undesirable economic activities, and (b) does not measure other – and some have argued far more important – human activity that contributes to sustainable living. These limitations of GDP as a measure of societal progress have been pointed out in different places.<sup>6</sup> For instance Talberth (2008) writes that

GDP gives no indication of sustainability because it fails to account for depletion of either human or natural capital. . . . And it fails to register costs of pollution and the non-market benefits associate with volunteer work, parenting, and ecosystem series

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<sup>5</sup> See Talberth (2008) for a brief discussion of these alternative macroeconomic indicators for sustainable development of societies. For a wiki on measuring progress with respect to a particular set of indicators of human well-being around the world, see [www.wikiprogress.org](http://www.wikiprogress.org)

<sup>6</sup> For a discussion document dealing with the challenge of measuring a variety of non-economic aspects of human well-being, see, Hoegen (n.d.), a document created on behalf of the Federal Ministry for Economic Cooperation and Development in Germany.

provided by nature. GDP is also flawed because it counts war spending as improving welfare. (p. 19)

Illustrating how GDP fails to account for humanitarian and natural disasters, which very directly and immediately affect the development toward or the sustaining of human well-being, Talberth (2008) writes:

In Sudan, for example, the per capita GDP has risen 23 percent in this decade, yet 600,000 people acutely at risk of famine from a prolonged drought in 2001. And more than 400,000 people were killed there and some 2.5 million displaced by alleged genocide in Darfur between 2003 and 2007. (p. 20)

In recognition of these limitations of GDP as a measure of positive societal development, alternative measures have been suggested, and the indices developed to measure human well-being that were discussed above are examples of such suggestions. Any such suggestion, however, implies a value judgment about what is worth measuring, and any such value judgment implies a view of human well-being. This point links directly to our claim in section II-3.1.1 that the problem of sustainability is a value problem.

### **3.1.4 The Socio-Economic Aspect of Sustainability**

In this section we draw on the discussion in two areas of the socio-economic aspect of sustainability that we think are particularly relevant to school education: consumer society and poverty.

#### ***Consumer Society***

In section II-3.2 we discuss the interdependencies between the different aspects that characterize the multi-strand notion of sustainability outlined so far. Here we focus on what could be judged to be a paradoxical relationship between the way in which the current socio-economic system is structured and the natural environment. Smith (1992) has poignantly characterized this paradoxical relationship:

Our way of life depends upon consumption. Without it, the engines of industry and profitability cannot be maintained. When these are slowed, the results are unemployment and social disorder. And yet with consumption come the relentless exhaustion of resources and environmental damage that will eventually render the economic practices of the modern world obsolete. (p. 8)

Assadourian (2010) provides an illustration of how *enculturated* the view of citizens as consumers already is: “[the word] ‘consumer’ is now often used interchangeably with person in the 10 most commonly used languages of the world, and most likely in many more” (p. 8). While humans need to consume food and some other products for their physical survival, the *degree* of consumption, as Assadourian (2010, p. 8) points out, is guided by principals of the culture people are born into, and people’s expressed need to consume to the degree common in developed countries is culturally conditioned. This conditioning links now the expressed need to consume to fundamental human needs for well-being: “Consumerism is a cultural pattern that leads people to find meaning, contentment, and acceptance, primarily through the consumption of goods and

services” (p. 8). He points to (a) traditions like Christmas that have been commercialized, (b) the widespread identification of “good life” with the ability to consume, and (c) how people’s ways of spending their leisure time is build around consuming goods and services as exemplifications of how this conditioning has now linked practices for human well-being with consumption. Linn (2010) argues that the commercialization of children’s lives has contributed to the “erosion of creative play, which is central to healthy development” (p. 62), so that the expansion of a consumer society has not just a direct, negative impact on the natural environment, but also on other important aspects of human well-being. High levels of consumption (of goods) do not improve well-being (Assadourin, 2010, p. 9).

The current economic system in developed countries is based on resource consumption. Through this economic system citizens of these countries are enculturated into ways of living citizens of these countries (making it a socio-economic system), and these ways of living have been perpetuating the need to consume resources and, thus, have put the current economic system in conflict with the limits of the natural environment, and, thus, the prospects of future generations. However, it is not just that the consumer culture perpetuates an economic system based on consumption, but such an economic system fosters and sustains the consumer culture. It is because of this bidirectional relationship that any changes toward sustainability would require addressing both, the economic system and the consumer culture at the same time. Schooling can contribute greatly to addressing the sustainability issues linked to the consumer culture, but it cannot address the socio-cultural system as a whole by itself; rather, a systems approach is required (see section II-3.2). A possible educational response to need to live sustainably is discussed in section II-3.4.

### **Poverty**

The socio-economic status of a student’s family “continues to be the strongest predictor of educational outcomes, as it has been since it came into prominence as a research issue more than 30 years. (Levin & Riffel, 2000, p. 184). Levin and Riffel (2000) wonder why educational reform in Canada that aims to improve learning outcomes is still characterized by “a lack of attention to the most important single determinant of educational outcomes – socio-economic status (SES) of families” (p. 184). But the negative impact of family poverty on children’s education is not just felt by the child and its family, but often also by subsequent generations and the society’s social network and support system; family poverty impacts the whole of society not just morally but also financially:

If one took the list of negative consequences above, it is evident that poverty creates significant additional costs in regard to health care, education, criminal justice, unemployment, and social assistance, as well as reduced productivity. . . . Poverty is to some degree intergenerational, so that costs continue not only for those who are now poor, but for their children as well. (Levin & Riffel, 2000, p. 184)

In their article, Levin and Riffel (2000) report on a study they undertook that inquired into the understanding of and responses to poverty in five school divisions in a province of Canada, most likely Manitoba. In terms of interviewees’ understanding of poverty in their respective school division, the authors note that

in none of the districts in the study did poverty per se appear as an agenda item for school boards or administrator groups, [although] it is clear from the interviews that many

respondents are highly aware of the importance of poverty as an issue in their school district. (Levin & Riffel, 2000, p. 186)

This discrepancy between awareness and action goes together with another observation by the authors, namely that the interviewees' source of understanding of poverty in their respective school divisions was primarily personal encounters (the more rural school divisions) or staff reports (urban school divisions) rather than a data system on the poverty level in the respective school division (Levin & Riffel, 2000, p. 187). The authors suggest that "district perspectives may also be affected by the fact that there are no pressure groups advocating with the school boards the importance of poverty as an issue" (p. 187). The authors also note varied views on the mandate of schools with respect to poverty and other major social issues, which might also contribute to the discrepancy between awareness and action:

One set of those we interviewed feel that the social mandate of schools is inappropriate, and 50 percent of our survey respondents either agreed or were neutral on the suggestion that school should not be responsible for dealing with problems of poverty. (Levin & Riffel, 2000, p. 189)

Levin and Riffel (2000, p. 189) found that school divisions' responses to poverty were overall characterized in three ways. First, the interviewees from the different school divisions see poverty as a problem of the individual student or the family and the student's inability to meet the school's educational objectives. Second, the study suggested that none of the five districts had an overall plan or strategy (although the inner-city division had different programs in place) to address the impact of poverty on students. Third, school divisions generally responded to the impact of family poverty on students as a resource problem of individual schools; however, when resources were provided to schools, the implementation of programs or initiatives still depended on "the orientation, energy, and commitment of principals and teachers [of the respective school]" (p. 189).

Based on their study and other research literature, Levin and Riffel (2000) suggest three strategic actions for school divisions to take to address the impact of family poverty on students' educational achievements:

- "Change the way that high poverty schools approach instruction, so as to ensure that disadvantaged students receive as challenging a level of instruction as other students" (p. 193).
- Schools in a community with a high level of family poverty need to see themselves as part of the community and need to contribute "to the overall economic and social welfare of the community. It is clear that poverty is not just an individual issue" (p. 194).<sup>7</sup>
- Early childhood education should be expanded, since a large body of evidence "indicate[s] that working with students and families as early as possible has positive effects on long-term outcomes" (p. 194).

Levin and Riffel (2000) stress that these strategic actions need to be supported (a) through seeing poverty as an educational issue that "requires sustained and careful attention" (p. 194) that

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<sup>7</sup> For a report on how a community school in the inner-city of Winnipeg has not just seen itself as part of the community but has also contributed to the economy and social welfare of the community, see Hunter (2000).

go beyond short-term programs that rely heavily on the commitment of individuals and (b) through the provision of additional resources since “effective action will depend on resources being available” (p. 194).

Child poverty, with its implications not just of the educational outcomes for those children but also for society in general, is a serious issue in Manitoba. Using Statistics Canada data and their measure of Low-Income Cut-Off (Before Taxes) as a measure of poverty, the Social Planning Council of Winnipeg (2009, p. 2) identified that almost 19 percent of children under the age of 18 live in poverty in Manitoba, which is, jointly with Alberta, the highest child poverty rate in Canada by province. Thus, child poverty, affects on average four to six children in each classroom in Manitoba; but, of course, child poverty is quite differently distributed across different school divisions, and even within school divisions.

## 3.2 A Systems Approach to Sustainability

### 3.2.1 Systems Thinking

One of the frequently referenced concepts around sustainability is the idea of systems thinking. Senge, Smith, Cruschwitz, Laur, and Schley (2008) defines systems thinking as seeing the whole picture: “It simply means stepping back and seeing patterns that are, when seen clearly, intuitive and easy to grasp” (p. 230). Clark (2001) suggests that, “this perspective [systems thinking] reinforces the intuitive insight that no single, discrete entity can be fully understood apart from the complex whole of which it is an integral part. . . . Systems thinking is contextual thinking because it recognizes that without a context, meaning is truncated and incomplete” (p. 24).

Clarke (2003) outlines several characteristics of systems thinking:

- (1) Systems thinking incorporates a “both / and” logic rather than an “either / or” logic.
 

“While the systemic perspective recognizes the value of the scientific method and the benefits that have been derived from its technological accomplishments, it simultaneously honors the age-old wisdom and values that shaped human communities from the beginning” (p. 24).
- (2) Systems thinking assumes a living universe. Best metaphor for system thinking is not machine but organism.
- (3) Systems thinking is ecological thinking. The Earth’s ecological system is authentic and practical and this provides a more comprehensive and functional understanding of how systems work.
- (4) Systems thinking recognizes that we live in a participatory universe.
 

The observer is always and unavoidably an influential part of every experiment. This, of course, disproves the notion that science is, or can be, objective. This means that rather than being discoverers of objective knowledge, we are creators of knowledge that always reflects the subjective perspectives of those who create it. (p. 25)
- (5) Systems thinking is both global and, at the same time local.

- (6) Systems thinking honors the long-range view. First Nations practice of making decisions in the context of “the seventh generation” (p. 26).

Clark concludes that systems thinking has power, value and relevance because it provides us with insights into the “big picture” but its limitation is that it does not provide the detail that is often required to “fix” something. It becomes clear that both analytical thinking and systems thinking are complementary capacities.

### 3.2.2 The Interconnectedness of the Different Strands of Sustainability

The approaches to sustainability and human well-being presented in section II-3.1 have suggested a multi-strand approach to the notion of sustainability. Although there is no complete agreement on the specifics of the different prongs (aspects of sustainability) or their labeling, for the purpose of this section it suffices to characterize the multi-strand notion of sustainability as having the following four aspects:

- natural environment aspect
- physical and mental health aspect
- socio-economic aspect (including issues of equitable access to resources)
- socio-cultural aspect (including issues of community living, education, etc.)

The conditions of the world with respect to each of these four aspects would be considered for establishing the level of the sustainability of or the sustainable development toward human well-being for all humans on Earth.

The approaches to the notion of sustainability and well-being presented in section II-3.1 conceptualize these aspects as being interconnected and interdependent. For instance, Edwards (2005) in his analysis of approaches to sustainability in different domains of human living identified interdependence of these different aspects as one of the seven features of the paradigm shift that underlies what he identified as the Sustainability Revolution (see section II-3.1.2). The report by the World Commission on Environment and Development (WECD, 1987) – also referred to in section II-3.1.2 – discusses interdependences between the different aspects of sustainability. For instance, in chapter 11, the report discusses how “environmental stress [is] a source of conflict” (p. 292). The report states:

Environmental stress is seldom the only cause of major conflicts within or among nations. Nevertheless, they can arise from the marginalization of sectors of the population and from ensuing violence. This occurs when political processes are unable to handle the effects of environmental stress resulting, for example, from erosion and desertification. Environmental stress can thus be an important part of the web of causality associated with any conflict and can in some cases be catalytic. Poverty, injustice, environmental degradation, and conflict interact in complex and potent ways. (WECD, 1987, p. 291)

Here the report interlinks at least three aspects of sustainability listed above: natural environment (environmental degradation), physical and mental health (conflicts), and socio-economic aspect (poverty and injustice).

The Millennium Ecosystem Assessment report, discussed in section II-3.1.3, interlinks what the report calls the different ecosystem services provided by the biosphere and its

ecosystems – like the provision of food fresh water, or the regulation of the Earth’s climate or flood system – with the different aspects of human well-being, which were identified in section II-3.1.3 (see Hassan, Scholes, & Ash, 2005, p. 28). For instance, according to the report, the regulating services provided by the biosphere and its ecosystems are linked strongly to the following aspects of human well-being: security, basic material for good life, and health.

In addition there is empirical evidence from other writings that are not directly linked by their authors to the concept of sustainability that link directly different of the four aspects of sustainability identified above. For instance, Wilkinson and Pickett (2009) linked the degree of income *distribution* within each of the 23 developed countries they studied with a series of indicators linked to human well-being within a society, like social relations, mental health and drug use, physical health and obesity, violence, concern for living sustainably. They consistently found a positive correlation between higher levels of equality of income with higher levels of positive development within these different indicators of well-being. In other words, they found that the more equal the income is distributed in a society (socio-economic aspect of sustainability), the better a society does with respect to the different indicators of human well-being (natural environment, physical and mental health, and socio-cultural aspect of sustainability). Wilkinson and Pickett provide also arguments that this statistical correlation reflects as well a causal relationship. Other research links poverty, particular childhood poverty (socio-economic aspect), with aspects of human well-being like long-term income, educational attainment, health, and so on (Levin & Riffel, 2000, p. 184).

### 3.2.3 Concretizing the Interconnectedness: Complex Adaptive Systems

Based on the work by the Santa Fe Institute in complex systems ([www.santafe.edu](http://www.santafe.edu)), the work by the Resilience Alliance (see [www.resalliance.org](http://www.resalliance.org)), which explores the dynamics of complex adaptive systems, and Simon Levin’s work on complex adaptive systems in ecology and resource management (Levin, 1998, 1999), the articles in Norberg and Cumming (2008) discuss the notions of resilience and sustainability in complex adaptive systems. Seeing human living from a systems perspective, the notion of a complex adaptive system (CAS) that the book discusses makes some relevant observations about such systems that seem directly relevant to this Baseline Study (see Anderies & Norberg, 2008, p. 155):

- CASs are characterized by constant change; there is no long-run optimal configuration toward which the system must be driven.
- Diversity of components within the system is important for its functioning.
- Particular important processes are those that drive self-organization.

The authors emphasize a systems approach to governmental functioning. However, as the following example from the UK illustrates, governmental functioning is often characterized by a departmentalized, non-systemic approach to complex issues:

On Wednesday, the secretary of state for communities launched a bold plan to make new homes more energy-efficient. She claims it will save 7 million tonnes of carbon. On Thursday, Douglas Alexander, the British transport secretary, announced that he would allow airports to keep growing: by 2030 the number of passengers will increase from 228 million to 465 million. As a result, according to a report commissioned by the

environment department, carbon emissions will rise by between 22 and 36 million tonnes. (Monbiot, 2008, p. 36)

Complexity theory has been used to understand organizations (Capra, 2002, chapter 4) and in education and educational research (Davis & Sumara, 2006). Viewing human living from a systems perspective has direct implications for education and for the resiliency aspect of living sustainably: According to Folke and colleagues (Folke, Colding, and Berkes, 2003 and Folek et al., 2005 as referenced in Anderies & Norberg, 2008, p. 155), a CAS perspective requires societies to 1. learn to live with change and uncertainty, 2. combine different types of knowledge throughout the learning process, 3. create opportunities for self-organization toward social-ecological resilience, and 4. nurture the development of capacity for renewal and reorganization.

### 3.3 Aboriginal Perspectives on Sustainable Living

The infusion of Aboriginal perspectives into curricula has been a developing phenomenon in Canadian education (Friesen & Friesen, 2002). The recognition of Aboriginal perspectives as a recognized aspect of public education may be regarded as a logical progression following socio-political events that have occurred since the 1970s (Schissel & Wotherspoon, 2003); an example of such an event is report of the Royal Commission on Aboriginal Peoples (White, Maxim, & Spence, 2002). Some provincial jurisdictions have developed resources to assist in the integration of Aboriginal perspectives into mainstream curricula (White, Spence, & Maxim, 2006). In at least one provincial jurisdiction in Canada, the Minister responsible for education has created a requirement that teacher candidates should complete at least one university course in Aboriginal education. Although Aboriginal education may be popularly perceived as a prospective or constituent part of the post-colonial, anti-racist, and decolonization discourses of general native studies and educational foundations programmes (Minnis, 2008), the importance of curriculum and teaching issues in Aboriginal education is becoming progressively more ubiquitous (Armstrong, Corenblum, & Gfellner, 2008; Redwing Saunders & Hill, 2007). The focus on curriculum and learning, especially in the area of pedagogy, may be regarded as a response to a concern for the lack of authentic Aboriginal education – a concern that is becoming more prevalent (Redwing Saunders & Hill, 2007).

It has been argued that there is an essential relationship between students' culture and the way in which they acquire knowledge, manage and articulate information, and synthesize ideas (Barnhardt, 1999; Bell, 2004; Kanu, 2005). An implication of this argument may be that schools, which are regarded as oppressive institutions that facilitate social reproduction (Giroux, 1997; Steinberg, 2007), should be environments where teachers engage their students in a manner that allows them to explore and affirm aspects of their own identity whilst facilitating academic success. Since primary and secondary education in Canada operates with curricular imperatives that give privilege to what is regarded by many as essential curriculum, contemporary scholars and teaching professionals posit that Aboriginal perspectives should be *integrated* with existing curricular imperatives. The type of integration called for by many may be regarded as the use of supplementary resources, curricular material, or knowledge to amend or augment an existing programme of study, which allows classroom teachers to enrich mandatory areas of study with relevant, localized content. The word *perspectives* is the preferred terminology for this sort of

integration because it emphasizes the importance of exploring the histories, experiences, values, and knowledge associated with an aspect of Aboriginal culture. In an effort to avoid treating such subject matter in a tokenistic manner – where aspects of Aboriginal culture are explored in a superficial, trivial way that doesn't explore why such aspects exist and the people they represent – teachers in many jurisdictions are now encouraged to share and explore with their students the respective social contexts associated with a given cultural issue or theme. The exploration of Aboriginal perspectives provides a more complete picture of their culture and the peoples and histories that they represent.

The section, an exploration of the contemporary scholarly work associated with Canadian Aboriginal peoples and the ESD movement, is organized in the following parts: general environmental awareness, education and best practice, spiritual and historical issues, and the technical manifestations of ESD and Aboriginal peoples.

### 3.3.1 General Environmental Awareness

And so it is Sonkwaiatison, our Creator, that as we prepare to begin this new day, we take a few moments to centre ourselves, to reflect on who we are, on our place within the Circle of Life, and on our responsibilities to all of Creation. We begin by turning our thoughts to you, Ietinistenhen Ohontsa, our sacred Mother the Earth. We know that you are sick and you are dying at this time because of the way we, the two-legged, show you disrespect and abuse of your gifts. And yet despite this, your love for your children is such that you continue to provide all we need to survive on a daily basis. You continue to fulfil your responsibilities and carry out your duties in accordance with the instructions given to you in the beginning of time. For this we are grateful. And so it is, we turn our minds to you, we acknowledge you and we give thanks. So be it in our minds.

Kanatiio, Kanesatakeronnon

(Royal Commission on Aboriginal Peoples, 1996)

The Royal Commission on Aboriginal Peoples (RCAP) represents perhaps the most comprehensive government investigation into the historical and contemporary conditions for Aboriginal peoples. Through an examination of numerous socio-economic issues, including primary, secondary, and post-secondary education, the RCAP recognized a number of essential aspects of traditional Aboriginal culture that merit consideration when attempting to develop social policy that is intended to improve their living conditions:

Culture we understand to be the whole way of life of a people. We focus particularly on the aspects of culture that have been under assault historically by non-Aboriginal institutions: Aboriginal languages, relationship with the land, spirituality, and the ethics or rules of behaviour by which Aboriginal peoples maintained order in their families, clans, communities, nations and confederacies. (Indian and Northern Affairs Canada, 1996, volume 1, section 15)

In order to appreciate the diversity that may be prevalent amongst Aboriginal peoples and their connection to the environment, a brief exploration of the people in question may be called for. Although the word *Aboriginal* is a legal term defined by the *Constitution Act, 1982* as referring to

the Indian, Métis, and Inuit peoples of Canada, it may be important to consider that these three groups represent a broad and divergent set of ethnic groups. For instance:

- There are currently more than 600 First Nations communities in Canada,
- Canada's Inuit population has grown to nearly 60000, most of whom occupy the principal regions of Canada's northern regions of Inuvialuit, Nunavut, Nunavik, and Nunatsiavut,
- Canada's Métis population represent a variety of regions in Canada, each with distinct histories and experiences,
- Collectively, Aboriginal people in Canada represent 11 different linguistic groups and 65 different languages.

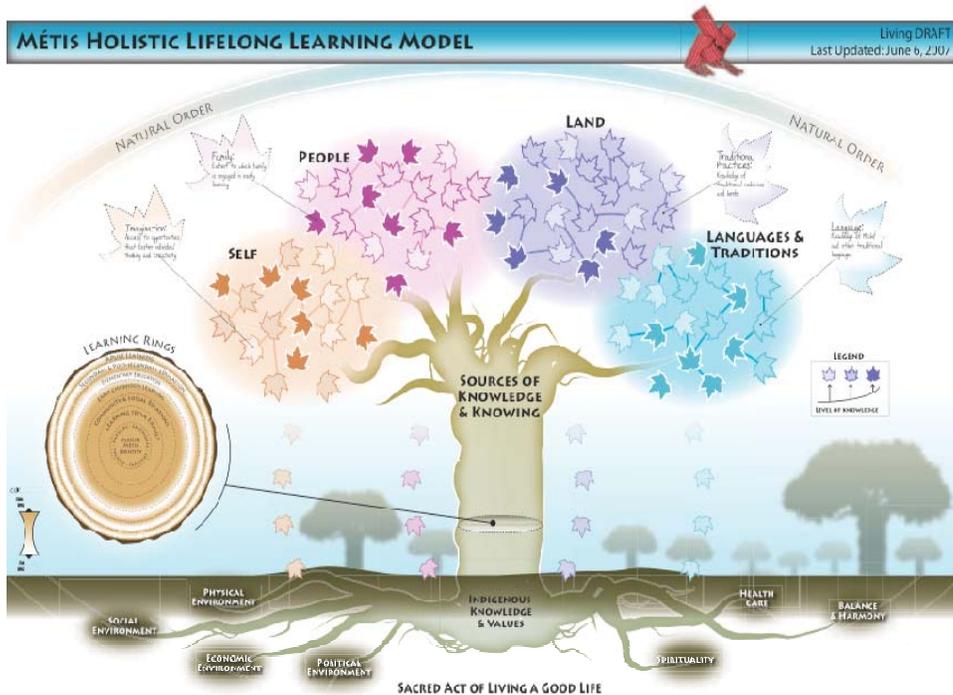
(Statistics Canada, n.d)

In spite of the debate associated with whether or not ancestors of Canada's Aboriginal peoples were truly indigenous to what is now regarded as North America, the notion that they are indigenous to these lands is an essential part of their ethno-cultural identity (Ray, 2005). Furthermore, that condition of indigeneity that is assumed by the Aboriginal peoples of Canada consists of a form of stewardship for those lands that is marked by the communal relation with the land that is almost familial in its substance (Audlin, 2005).

The spiritual and cultural connections to the environment that can be associated with the Aboriginal peoples of Canada comprise an integral part of a number of indigenous holistic worldviews. The Canadian Council on Learning ventured to survey the holistic worldviews of Aboriginal peoples across Canada in an effort to illustrate these worldviews in as broad a manner as possible. With an educational theme, the Canadian Council on Learning (2007) produced *Holistic Lifelong Learning Models* that are intended to illustrate the holistic worldviews, as they apply to learning, of the First Nations, Métis, and Inuit peoples of Canada. Figure II-1 (next page) illustrates the Métis Holistic Lifelong Learning Model – special attention may be given to the cultural metaphors that have informed model that have environmental significance:

The Métis learner, like the tree, is a complex, living entity that needs certain conditions for optimum growth. As conditions change throughout the natural cycle, so will the regenerative capacity of the tree. The health of the tree, or the Métis learner, impacts the future health of the root system and the “forest” of learners. Métis people view lifelong learning as part of a regenerative, living system – the “Natural Order” that governs the passage of seasons and encompasses a community (or forest) of learners. Within this organic system, relationships are interconnected, and balance and harmony are maintained. (Canadian Council on Learning, 2007)

In employing an Aboriginal worldview such as those illustrated by the Canadian Council on Learning, the possibilities for enhanced educational programming that adheres to the principal tenets of ESD are encouraging. One of the major challenges for making use of such worldviews as a means of facilitating peoples' acceptance of responsibility as stewards of the environment is the process of placing the values for environmental stewardship into the individual and collective consciousnesses of a community. Engraining these values to the point that they are not even spoken of in daily discourse has been a part of the dialogue associated with school culture (Firestone & Louis, 1999). Myers (2009) reported that the efforts of a school district in north-western Ontario to enhance their schools' environmental education programming has been enhanced by the efforts by school administrators to embed Aboriginal holistic worldviews into

Figure II-1: Métis Holistic Lifelong Learning Model<sup>8</sup>

their ESD programming in a way that had genuine meaning to their cultural beliefs and values. As the author report:

By working with Aboriginal elders and teachers in the community, many schools have enriched their courses in environmental geography and in outdoor and traditional technologies. Engaging the Aboriginal community in environmental programs has benefited all students, Aboriginal and non-Aboriginal alike, and provided a more holistic view of the world than they would otherwise have been exposed to. (Myers, 2009, p. 39)

Numerous teachers and school jurisdictions at the local and district level have attempted to employ Aboriginal perspectives to supplement educational programming for all students, whether they are Aboriginal or non-Aboriginal. Manitoba Education has ventured to develop curricula and support materials that explore these areas. The publication *Integrating Aboriginal Perspectives into Curricula* (Manitoba Education and Youth, 2003a) represents Manitoba's best example of Aboriginal perspectives that can be used in tandem with other content areas. By developing specific student outcomes for each principal subject area, which are further organized by stream

<sup>8</sup> This learning model has been developed by the Canadian Council on Learning (CCL) with the University of Saskatchewan's Aboriginal Education Research Centre and the First Nations Adult Higher Education Consortium (co-leads of CCL's Aboriginal Learning Knowledge Centre) in partnership with Aboriginal learning experts and the National Aboriginal Organizations in Canada, as identified at [www.ccl-cca.ca/CCL/Reports/RedefiningSuccessInAboriginalLearning/RedefiningSuccessPartners.htm](http://www.ccl-cca.ca/CCL/Reports/RedefiningSuccessInAboriginalLearning/RedefiningSuccessPartners.htm). The Model is here reproduced with permission.

(early, middle, and senior years), this document provides teachers and others with some introductory content (and possibly points of inquiry) on Aboriginal perspectives.

The development of the *Integrating Aboriginal Perspectives into Curricula* has been predicated, in part, by the notion that Aboriginal peoples in Canada have a history with others where marginalization, segregation, and other hegemonic activities on the part of various oppressors have negatively impacted upon their state of being. At a time when these histories have become an increasingly significant part of the public consciousness, the Aboriginal rights movement has taken hold in many socio-political forums in Canada. The Aboriginal rights movement has allowed the development of two principal imperatives for Aboriginal peoples: self-government and the settlement of land claims (Widdowson & Howard, 2008). Both of these imperatives, which are popularly understood as struggles for political power and financial gain, do have intimate connections with the lands in question and are the subject of many scholarly discussions.

Much of the literature that either examines or eludes to the connection between Aboriginal peoples and the environment places Aboriginal perspectives in contrast to modernistic, Eurocentric perspectives on societal growth, progress, and financial gain. Weenie (2009) illustrated this dichotomous relationship thusly:

We are faced with addressing the disruption to Aboriginal knowledge systems brought on by our colonial history. Our world is in an environmental crisis with concerns about global warming and the rapid depletion of natural resources. The basic Indigenous principles of living in harmony with nature are not recognized or valued. These are some of the continuing tensions, conflicts, and contradictions that impede the development of a collective vision toward building healthy and viable communities. Indigenous knowledge is still in that marginalized space. (p. 62)

The sentiments discussed by Weenie have been manifest in instances where Indigenous knowledge and its connection with the environment stand in clear contrast to scholarly discourse, social discussions, and activities that support such things as anthropological and archaeological research, resource extraction to sustain commerce, and social sentiments that support emergent and existing postcolonial and neoliberal attitudes of hegemonic domination on the part of a government, steeped in traditions of the Westminster style of parliamentary democracy, that has perpetuated a social hierarchy throughout its history. Olsen-Harper (2008) offered some insight into this sort of cultural tension by exploring how university archaeologists have conducted research in the traditional territories of the Trout Lake Anishinawbek in a manner that “seriously violated the dignity and rights of the Aboriginal people” of that territory (p. 43). At the heart of the problem identified by Olsen-Harper is the lack of fundamental understanding by researchers of the ways in which Aboriginal people view their connection to the environment and the sacred histories that are associated with those connections:

Archaeologists are not usually trained to recognize that the life histories of ancient Anishinawbe people belong to the Anishinawbek themselves. Archaeologists are also not usually trained to view the opportunity of listening to those community members who...are the offspring of those ancients, as a privilege. (2008, p. 43)

The contrasts between the values of Aboriginal and many non-Aboriginal peoples and institutions related to environmental stewardship is manifest in one of the more public debates that continues to take place in Canada – that of land claims.

Many geo-political events and developments have progressively resulted in the establishment of increased claim to the lands of Turtle Island by descendents of settlers and subsequent immigrant peoples. The nation of Canada, established through a number of different processes such as the establishment of treaties, is one for which Crown sovereignty has not been established in a number of regions. Rossiter and Wood (2005) discussed the land claims issues that have emerged in British Columbia, focusing on the social sentiment of the British Columbian public as a means for establishing the provincial governments neo-liberal agenda – an agenda that stands in contrast to the socio-cultural needs of the First Peoples of British Columbia. Such needs are rooted in the discourse of cultural affirmation and self-determination. Similar discourses in the area of land-claims have been conducted by Usher (2003) and Atkinson and Mulrennan (2009), who identified economic imperatives as one of the principal characteristics that set non-Aboriginal values for the environment in contrast with those of Aboriginal peoples. In discussing land-claims issues in Canada's far north, Coates (2004, p. 216) writes:

The imperatives of the industrial world, which needed energy, minerals, wood and pulp, regardless of political ideology or government structure, drove nations to move aggressively into remote regions. In very few instances...did the national governments take the concerns and needs of indigenous peoples very seriously.

Coates's discussion suggests that market driven ideologies, values that are at the heart of neo-liberal discourse, have had a disastrous impact upon Aboriginal peoples. These ideologies may be as important to consider as the paternalistic attitudes directed towards the First Peoples of Turtle Island.

### 3.3.2 Aboriginal Peoples and Evolving Identities

Any discussion regarding the Canadian Aboriginal experience is the issue of identity. One of the more important issues to be considered by and for Aboriginal peoples is the issue of socio-cultural evolution.

There are numerous theories regarding socio-cultural evolution in the fields of sociology and anthropology (Trigger, 1998). The central tenet concerning such forms of evolution is the notion that collective beliefs, values, traditions, societal needs, ethnicity, and social relationships are subject to transformation over long periods of time (Ferguson, 2005). Socio-cultural evolution, the process of continuous change and adaptation in a society or culture over time, may not be a passive process in some of its manifestations in modern Western society (Dennis, 1996). Rather, socio-cultural evolution can be the result of the deliberate or unintentional exercise of power and social manoeuvring (Ortner, 2006). The existence of hegemonic relationships, those where individuals of lower social standing are politically, economically, and socially dominated by the ruling class in ethnically diverse societies can be regarded as an essential precursor to such evolution. In citing Marxist ideals of societal progress, Cashmore (1996) stated:

The dominant ideas of any age are the ideas of the ruling class....What is accepted as common sense, the obviously correct way things are, is not a neutral perception of the world, but a particular way of grasping reality which fits in neatly with the existing social order. In other words, the bourgeoisie's leadership extends from the material world into people's minds. (pp. 156-157)

Canadian history of the last five centuries suggests that the hegemonic relationships described by Cashmore have existed and have had a profound impact on the socio-cultural evolution of, amongst others, Canada's Aboriginal peoples (Ray, 2005). It would be remiss to explore Aboriginal history and overlook the changes that many of Canada's Aboriginal peoples have endured from a state that can be characterized as traditional, to a condition of *Europeanization*, where Aboriginal customs and ways of life have come to resemble their colonizers (Adams, 2000). Elements of this Europeanization can be readily observed in the way many of Canada's Aboriginal peoples currently live their lives (Findlay, 2000). Europeanization has influenced the formation of an identity for Aboriginal people that reflect colonization where aspects of traditional knowledge, heritage and consciousness can be difficult to discern (Niezen, 2003), especially with mixed-blood and urban Aboriginals (Lawrence, 2004). As ever-present as socio-cultural evolution is for Aboriginal peoples in Canada currently, it is hardly welcomed by the First Peoples of Canada (Alfred, 1999).

Perhaps the most concerning phenomenon related to this form of evolution is the role of education; a concern is often articulated by asserting that contemporary education encourages the transmission of ideals, beliefs, and cultural mores to Aboriginal children (Schissel & Wotherspoon, 2003), thus shrouding pre-existing characteristics of identity. If one considers that schools are sites where children's personalities and virtues are helped to develop (Emberley & Newell, 1994) and are prepared for active citizenship (Cogan, 2000), then the importance of education as a tool for children's social development may be understood (Giroux, 1997). Education can have an important role in the socio-cultural evolutionary process, with Aboriginal Canadians' identity being adversely impacted as a result (Battiste & Semaganis, 2002). Yet, the development of Aboriginal scholarship in the social sciences, accompanied by evolving political activism amongst Canada's First Peoples, has spawned the emergence of an awareness of the neo-colonial climate in which Aboriginal peoples find themselves (Turner, 2006). Rediscovering and asserting an identity that is congruent with the values, beliefs, and ideals of Canada's Aboriginal peoples requires transcending from the identity that has been placed upon them (Waldram, 1997).

This discussion is intended to reflect the impact of Eurocentric culture upon Aboriginal identity in Canada and how these impacts are prevalent through Eurocentric educational practices – of which resource extraction and lack of respect for the environment is one aspect. In the parlance of identity, an individual's collective comprehension of themselves as a unique, separate entity, such identity can be regarded as an essential element of citizenship if one considers citizenship as membership in a united community (Manville, 1990). The educational implications of this notion are clear when one considers that Canadian citizenship development can take place in Canadian schools (Levin, 1998; Li, 2002). In asserting this point, it may be important to recognize and affirm the importance of Canada's multicultural mosaic of numerous, diverse cultural roots and its relevance to national social betterment. Essential to the issues of identity development and maintenance are the relationships between Aboriginals in non-Aboriginals in Canada.

As this sort of evolution in Canada continues, the connections between Aboriginal peoples and their respective manifestations of indigenous knowledge, heritage, and consciousness may become progressively weak. As environmental stewardship may be regarded as an essential aspect of the Aboriginal education movement, an equally essential aspect to this movement is the preservation and reaffirmation of indigenous knowledge because of its intimate relationship with environmental connections.

### 3.4 Education for Sustainability

#### 3.4.1 The Need for Reorienting School Education

Under the sub-header “Broadening Education”, the report by the World Commission on Environment and Development (WCED, 1987, pp. 111-114) recognizes that “sustainable development requires changes in values and attitudes towards environment and development” (p. 111) and that education plays a central role in achieving those changes in values and attitudes as well as the skills and responsibilities that go along with those changes.<sup>9</sup>

Others went further and suggest that the environmental and societal conditions for living sustainably require values, attitudes, and competencies that our current (Western) formal education system not just not focus on developing but that are in conflict with those values, attitudes and competencies it currently does focus on (Orr, 1994, p. 27; Smith, 1992, p. 15). For instance, Smith (1992) argues that for environmental sustainability four fundamental assumptions should shape a new “sustainable worldview (p. 75) that are in conflict with assumptions underlying the currently dominant worldview:

- “Humankind is embedded in a physical universe that functions more as an organism than a machine. . . . The aim of knowledge is to further identification with that universe, rather than to master it” (p. 75).
- “The basic units of society are not isolated and possessive individuals but the primary groups or small communities in which they are embedded. Security and social health are achieved when individuals contribute to one another’s well-being through cooperative support, rather than competition” (p. 75).
- Decentralization of political and economic institutions is a key to the restoration of cooperation (pp. 75, 84).
- Meaning in life should be drawn from who we are rather than what we have, which contrasts finding meaning in being part of the community our life is embedded in rather than in the accumulation of material goods (pp. 75, 88).

These assumptions of a sustainable worldview, Smith argues, have implication for school education. Schooling based on these assumptions would

draw children into the lived experience of interrelatedness and away from detached independence currently cultivated in contemporary classrooms. As the pursuit of self-interest is impeded by the limits of the planet, we will have to regenerate patterns of mutual support encountered in premodern societies and affirm ways of knowing that acknowledge our membership in the broad natural and social ecological systems of which we are a part. The cultivation of such support and the acknowledgement of this

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<sup>9</sup> Six years earlier, Lester Brown, who introduced the concept of sustainability, published his book *Building a sustainable society* (Brown, 1981). The book has two parts. The second part is about “the path to sustainability” in which three chapters are respectively entitled “The Means of Transition”, “The Institutional Challenge”, and “Changing Values and Shifting Priorities”. None of the chapters, judging by the section headers and the index consider (formal) education as part of building a sustainable society in any explicit way.

membership will require the creation of educational practices and structures that impart a new hidden curriculum, one that nurtures interdependence, achievement for the well-being of the group, affective and particularistic ties, and a deep sense of moral responsibility to the natural environment and to one another. Such an education would acknowledge the importance of ties to primary groups, build upon ways of knowing that balance interaction and identification with detached objectivity, encourage cooperation and collective responsibility, and foster forms of decision making and governance that support the welfare of the entire community, rather than its privileged sectors. (p. 93)

Smith's particular conceptualization of a sustainable worldview and its implications for school education serves here only illustrative purposes. We could have drawn as well on the sustainable worldviews presented in sections II-3.1.2 and II-3.1.3; the advantage of Smith's conceptualization compared to those others is that Smith also writes about the implications of the sustainable worldview on school education. Also it should be noted that what Smith called the sustainable worldview and which we briefly characterize here match *in substance* more or less the views about a sustainable society that were presented in sections II-3.1.2 and II-3.1.3. The crucial point of this section is that the required "paradigm shift" needed and conceptualized in the Sustainability Revolution (Edwards, 2005; see section II-3.1.2) is incompatible with the currently dominant worldview and that the paradigm shift has implications for school education that represent as well a paradigm shift (see sections II-3.4.2, II-4.4, and II-4.5). The following section discusses in more detail the notion of "ecological literacy" that has been developed to conceptualize this paradigm shift in education.

### 3.4.2 Ecological Literacy

Two approaches to ecological literacy (or eco-literacy) need to be distinguished, whereby the distinction is more by degree than by type. Drawing on the meaning of "ecology" as human's *natural* environment, a larger number of institutions, groups, organizations, and authors who talk about "ecological literacy" focus on literacy connected to the natural environment. For instance, in the Toronto District School Board ecological literacy is linked to its outdoor education schools and to be ecologically literate means

understanding three inter-related concepts:

1. how nature works,
2. how our society and economy ('human systems') depend on clean air water, and soil and other resources (product of 'natural systems'), and
3. how human interactions with the environment can have both positive and negative impacts on people and the natural world.

([http://toes.tdsb.on.ca/ecological\\_literacy\\_resources.asp](http://toes.tdsb.on.ca/ecological_literacy_resources.asp))

Similarly, the Faculty of Education at Lakehead University links the term ecological literacy to its Eco-Literacy Adventure Camp (<http://education.lakeheadu.ca/ecoliteracy/>). In this conceptualization the focus is— in the words of the Millennium Ecosystem Assessment (see section II-3.1.3) — on understanding and developing an appreciation for the services of the biosphere and its ecosystems on human well-being.

Other institutions, organizations, and authors link the notion of ecological literacy more generally to literacy with the new paradigm (section II-3.1.2) and sustainable worldview (section

II-3.4.1), as is the case for the Ecological Literacy Certificate of the Royal Roads University in Canada<sup>10</sup>, the Schumacher College in the UK<sup>11</sup>, and the Centre for Ecoliteracy in the USA. in Berkeley<sup>12</sup>. David Orr (1992) characterizes this approach to ecological literacy as follows<sup>13</sup>:

The ecologically literate person has the knowledge necessary to comprehend interrelatedness, and an attitude of care or stewardship. Such a person would also have the practical competence required to act on the basis of knowledge and feeling. . . . Ecological literacy, further, implies a broad understanding of how people and societies relate to each other and to natural systems, and how they might do so sustainably. It presumes both an awareness of the interrelatedness of life and knowledge of how the world works as a physical system. To ask, let alone answer, ‘What then?’ questions presumes an understanding of concepts such as carrying capacity, overshoot, Liebig’s Law of the minimum, thermodynamics, trophic levels, energetics, and succession. Ecological literacy presumes that we understand our place in the story of evolution. It is to know that our health, well-being, and ultimately our survival depend on working with, not against, natural forces. The basis for ecological literacy, then, is the comprehension of the interrelatedness of life grounded in the study of natural history, ecology, and thermodynamics. . . . A second stage in ecological literacy is to know something of the speed of the crisis that is upon us. . . . Ecological literacy requires a comprehension of the dynamics of the modern world. . . . Ecological literacy, then, requires a thorough understanding of the ways in which people and whole societies have become destructive. . . . Environmental literacy also requires a broad familiarity with the development of ecological consciousness. (pp. 92-94)

For Fritjof Capra, who promotes a similarly holistic concept of ecological literacy<sup>14</sup>, “being ecologically literate, or ‘ecoliterate,’ means understanding the principles of organization of ecological communities (ecosystems) and using those principles for creating sustainable human communities” (Capra, 1996, p. 297). Capra emphasizes the need of developing systems thinking as a necessary requirement for being ecologically literate. In section II-3.2 we discuss a systems approach to sustainability, and in sections II-4.4 and II-4.5 we discuss in more details the educational implications of systems thinking.

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<sup>10</sup> See <http://www.royalroads.ca/continuing-studies/certificate-programs/ecological-literacy-competency-framework.htm>

<sup>11</sup> See <http://www.schumachercollege.org.uk/about/our-mission-and-values>

<sup>12</sup> See <http://www.ecoliteracy.org/about-us/vision-and-mission>

<sup>13</sup> A similarly holistic concept of ecological literacy can be found in the writings of Fritjof Capra (1996, pp. 297-304; 2002, 229-233).

<sup>14</sup> See Capra (1996, pp. 297-304; 2002, 229-233).

## 4 Teaching and Teacher Development

### 4.1 Teacher Change: Professional Development

#### 4.1.1 A General View on Teacher Change

For their comprehensive review of the research literature on teacher change in the 4<sup>th</sup> edition of the Handbook of Research on Teaching by the American Educational Research Association (AERA), Richardson and Placier (2001) distinguish between two approaches to teacher change:

- (a) the empirical-rational approaches to change, which

[use] the development of models for change that is based on utopian goals and a rational approach to achieving them. In this approach, research and dissemination are treated as linear process: The research is conducted by academics or professional researchers, and change agents give the research results to those who, we would presume, will use the research. The system is approached as something to analyze and change, and the utopian vision is thought to be obtained through the diffusion of research on effectiveness. (p. 905)

- (b) the normative-reeducative approaches to change, which

focus on providing autonomy for and cultivating growth in the people who make up the system and on increasing the problem-solving capabilities of the system (p. 905),

and which suggest

that individuals act on the basis of socio-cultural norms to which they are committed. A necessary condition for change is that individuals alter their normative orientations and develop new ones (p. 917)

and which make

the assumption . . . that change is enhanced through deep reflection on beliefs and practices. Because the change process entails understanding one's beliefs and knowledge and determining whether or not to change them, dialogue has been used as a critical element of this process. (p. 906)

Richardson and Placier (2001) suggest that the dominant approaches to teacher change have been within the empirical-rational paradigm (pp. 905-906) but that more recently (in the late 1990s) the normative-reeducative approach to teacher change has been given greater acknowledgement in the literature as an important way for teacher change (p. 906). "This acknowledgement has been helped, in part, by the sense that the empirical-rational strategies have not been particularly successful in educational projects" (p. 906).

Illustrating the challenges that a large-scale attempt using the empirical-rational approach to teacher change faces, Richardson and Placier (2001) report that research that inquired into the

impact of developed curriculum packages that were distributed to school divisions and teachers, for instance those following “the Sputnik scare” (p. 907) found that only a small portion of the schools actually implemented those new curricula. The interesting point for our baseline study is the reason that Richardson and Placier provide for why those handed-down curriculum packages had so little impact on teacher change: “One problem, it appeared, related to a curriculum package, developed with amazingly little attention to the teachers and the realities of the classrooms, being imposed on schools and classrooms” (Richardson & Placier, 2001, p. 907). In light of what we said in reference to Richardson and Placier (2001) about the problems with the empirical-rational approaches to teacher change, these findings should not surprise.

While, according to Richardson and Placier (2001, pp. 907-908), most of the change projects described in the research literature employs a concept of change where others than the teachers are the determine the change process, like policymakers, administrators, researchers or staff developers, an alternative concept of change has recently (end of the 1990s) been employed, which the authors call the “naturalistic” change of teachers, probably because this kind of change come with the “nature” of a teachers work. About this type of naturalistic changes of teachers the authors write:

These changes may be prompted, promoted, or supported by discussions with other teachers, an evaluation by an administrator, a workshop, experience with an often-tried activity that no longer works, an article in a practitioner or research journal, a new grade level or population of students, etc. These changes take place over the career of the teacher and are voluntary. (p. 908)

The normative-reeducative approach to teacher professional development is a particularly strong foundation for teacher change projects if those projects “enhance the naturalistic change process [of teacher change]” and “are particularly useful with teachers for whom autonomy and professional expertise are important aspects of their identity” (p. 909). Thus, it should not surprise that the literature reviewed by Richardson and Placier (2001) suggests the importance of changing teachers’ beliefs in a way that is supportive of the desired practice change. For professional development that fits with the naturalistic change of teachers, Richardson and Placier (2001) write that “in the naturalistic change process, changes in beliefs appear often to precede changes in practices . . . or that the process of changing beliefs and practices is interactive or synergistic” (p. 920). They also report on a number of studies of professional development within the normative-reeducative paradigm that show sustained change of practice; those types of professional development were characterized by a collaborative community of teachers involved in inquiring into their beliefs and their practices and in which the teachers set the agenda of the process and focus (p. 920). Summarizing the research literature on the normative-educative approach to professional development they discussed, Richardson and Placier (2001) write:

A number of aspects of the normative-educative staff development process work together to enhance learning and change. Beginning with the individual, participants must begin to understand their own often tacit beliefs and understandings. This process is enhanced through dialogue, particularly dialogue with those who understand practice and particular context in which one is working. A strong trust level is important within the community since it is important for the participants, to discuss with others their practices that don’t seem to work, and to accept responsibility for their own practices. Thus, the development of a discourse community is productive in beginning this process of change. Also, helpful

in the next stage, participants may begin to question their beliefs and practices and consider change. During this stage, an outside person, other, or critical friend, who can provide a language for tacit understandings and bring into the conversation potentially alternative ways of thinking and acting can be helpful. (p. 921)

The review of the teacher change literature suggests to Richardson and Placier (2001) that particularly a teacher's view of teaching and of professional development influences the teacher's readiness for different types of professional development:

Different teachers will respond quite differently to the particular approaches taken in the staff development. Staff developers themselves should be aware whether their support of a particular approach to staff development – be it long-term, collaborative, conceptual and inquiry-oriented, or short-term – is, in part, a function of the staff developers' own orientations to change . . . . In the long run, combinations of approaches to teacher education and staff development may be the better way of approaching the change process. (p. 921)

Richardson and Placier (2001) have also reviewed the research literature that inquired into the impact of the *school context* on teacher change. The authors distinguish between three types of influences of the school context on teacher change. The first type of influence is characterized by the change happening by teachers simply working in a particular school context, i.e. the change that happens to teachers through work place socialization. For Richardson and Placier (2001) the research literature suggests that

the most important agents of socialization are students, because a teacher's greatest difficulty is coping with student complexity and diversity. . . . Colleagues are next in importance [for teachers' socialization]. . . . [Supervisors] influence teacher socialization, not through direct control but through control of the school context. (p. 924)

The reviewed research literature suggests two aspects of socialization into occupational and organizational norms (Richardson & Placier, 2001, p. 926): teacher socialization cuts across local contexts and socialization into local norms are highly variable. The former suggests that “the culture of teaching” can be a barrier to reform, which would call for a change of the occupation itself; the latter suggests that change efforts need to be responsive to the local context.

Summarizing the research literature on how teaching in schools shape teacher learning, Richardson & Placier (2001, p. 929) write: “Across the studies, learning opportunities, common goals, control, administrative support, and a shared, complex view of teaching reoccur as significant organizational conditions related to teacher learning, commitment, collaboration, and empowerment.”

The second type of influence of the school context on teacher change is the influence of the organizational context on *planned* efforts in change teachers (while the first type focused on the unplanned, “natural” change of teachers). Overall, Richardson and Placier (2001) find mixed results in studies addressing this second type of influence that suggest a complex interaction between the organizational context, the type of planned intervention for teacher change, and the characteristics of the teachers themselves:

No simple conclusions can be drawn from these studies, but they do suggest that school and district contexts mediate the effects of planned efforts to change teachers, with

positive or negative results. . . . A general problem with external incentives is that teachers tend to be intrinsically motivated; a specific problem is that different teachers are attracted to different intrinsic rewards . . . . The intentions of other policies were transformed as they moved to the school and teacher levels, resulting in unintended consequences. (pp. 933-934)

The third type of influence of the school context teacher change is the influence that planned school changes have on changing teachers. As Richardson and Placier (2001, p. 934) suggest, there is some evidence of “a turning away from narrowly defined teacher change or from staff development efforts towards school restructuring that have broader agenda, an agenda that Lieberman has called an agenda of “creating learner-centered schools with teacher involvement in schoolwide decision-making and program development” (Lieberman as cited in Richardson & Placier, 2001, p. 934). It is the influence of this kind of “school change” and its influence on changing the teachers in those schools that characterizes the third type of influence reviewed by Richardson and Placier. Because most of the studies they were reviewing were “qualitative accounts of restructuring in . . . local contexts” it made it impossible for the authors “to isolate school ‘variables’ that influence teacher change and difficult to draw generalizations” (p. 934).

However, the authors find that

a recurring issue in these studies is the relative importance of the process versus content of change. Darling-Hammond (1995) argues that people must know why they are engaged in change. Analyzing case studies of restructuring schools, she concluded that teachers who started with learners and learning and questioned their practices in relation to student benefits made more serious changes. (p. 934)

A very promising approach to school change with influence on teacher change that takes its starting point in improving student learning is the idea of a Professional Development School (PDS). We will discuss PDSs in more detail in section II-4.3.3. It suffices to say here that PDSs can provide the organizational context for professional development that has many of the features of what the literature identifies as forms of professional development that have a positive impact on teacher change.

Summarizing the two review areas of teacher change in general and the contextual influence on teacher change, Richardson and Placier (2001) write:

One assumption that pulls these two areas together is that major and sustainable changes in education probably require a normative-reeducative approach to change. Many of the reforms being called for today, for example, constructivist teaching and teaching for understanding, require deep changes in content and pedagogical knowledge and in understandings about schooling, teaching, and learning. These instructional changes require belief changes and, therefore, cultural change, a concept of interest in both the organizational and individual change literatures. (p. 938)

Further, we have moved away from the ‘one solution’ conception of change that accompanied the empirical-rational approach, and away from the use of top-down mandates that ignore local contexts and threaten educators’ sense of autonomy. Thus, current research in both literatures acknowledges that deep and lasting change requires consideration of a multitude of aspects and interests and should be viewed as an ongoing and local process. (p. 938)

### 4.1.2 Individualistic Versus Collaborative Teacher Cultures

Andy Hargreaves (1992) discusses the importance of teacher cultures for teacher change. He argues that teachers do not develop the way they teach on their own but rather under the direct and indirect influence of their relationships to their colleague teachers in the school and that

if we want to understand what the teacher does and why, we must therefore also understand the teaching community, the work culture of which that teacher is part of. (p. 217)

For that purpose he analyzes what he calls *the form of teacher cultures*, by which he means the ways in which teachers relate to each other in their professional work. He argues that certain forms of teacher cultures (in schools) are more conducive to bring about and sustain educational change than others. Such educational change is more connected with what Hargreaves calls *the content of teacher cultures*, by which he means what is shared in a teacher culture in terms of “the substantive attitudes, values, beliefs, habits, assumptions and ways of doing things” (1992, p. 219) – which are exactly the cultural qualities of teachers that are of interest in terms of educational change. Hargreaves now argues that changing the *form* of a teacher culture is a means to impacting the *content* of that teacher culture:

Securing change in the *content* of particular cultures and the beliefs and practices associated with them, I shall argue, depends very much on bringing about change in the *form* of those cultures. (p. 220)

Drawing on studies that he has undertaken, Hargreaves (1992) identifies four different forms of teacher cultures in schools: individualism, balkanization, collaborative culture, and contrived collegiality. The *individualistic teacher culture* in a school, which he identified as the most common in North American schools (p. 222), is characterized by teachers teaching “alone, behind closed doors in the insulated and isolated environment of their own classroom” (p. 220); teacher conversations are generally limited to talks in staffrooms, which are “places of relaxation and relief where social, humorous, morale-boosting behaviour relieves some of the stresses and eases some of the pains of the school day” (p. 221), and where professional conversations that raise substantial educational matters and personal views on teaching and education are generally avoided (p. 221). Hargreaves (1992, p. 220) cites Lortie’s (1975), who, in his influential study, identifies three orientations that teachers develop in a culture of individualism: presentism (teachers focus solely on their own classroom and the difference they can make there), conservatism (teachers do not discuss more fundamental issues which could lead to them changing their practice), and individualism (teachers shy away from collaboration with colleagues and fear judgment and criticism that might come with such collaboration).

The *balkanized teacher culture* is “made up of separate and sometimes competing groups, jockeying for positions and supremacy” (p. 223). A balkanized teacher culture can be found not just in high schools but also in elementary schools. Hargreaves suggests that at the high-school level such balkanization is often grounded in “the strong subject-departmental structures on which high schools are based” and that “the balkanization of high-school education also has its roots in deep-seated distinctions of status and priority” (p. 223). In elementary schools, where there are no strong subject-departmental structures, other characteristics of a teacher’s work lead to clustering of teachers around those characteristics, like being a French-language teacher versus

an English-language teacher in Canadian French immersion schools, or being a special education teacher versus a regular classroom teacher, or being a grade 5 teacher versus being a kindergarten teacher (pp. 224-225).

The *collaborative culture* in schools, which “existing research suggests . . . is a rarity” (Hargreaves, 1992, p. 227), is characterized by routine help, support, trust and openness between teachers, which operates “almost imperceptibly on a moment-by-moment, day-to-day basis”, and by being “constitutive of, absolutely central to, teachers’ daily work” (p. 226); a collaborative teacher culture is not formally organized or at work only for a specific project or event. Compared to the individualistic teacher culture, where reluctance or even anxiety to share one’s experiences with teaching and one’s deeper beliefs about teaching is prominent, in a school with a collaborative culture “failure and uncertainty are not protected and defended, but shared and discussed with a view to gaining help and support” (p. 226). In a school with a collaborative culture one can often also find shared leadership at the school-level, which plays down formal differences of status and demonstrates trust by the administration in teachers’ competencies (p. 226). Hargreaves argues that a collaborative culture can contribute to overcoming inhibition and unwillingness by teachers to change as is prominent in individualistic teacher cultures, and that the need for a collaborative culture of change has never been greater than at a time when “expectations for programme support for elementary students have risen remarkably”, when the integration of special education students and a growth in curriculum-coordination and in division-wide programming requires greater staff coordination, and when, overall, “elementary teachers’ work is considerably more skilled and complex than it was in the times when most parents and trustees were themselves students” (p. 227).

With reference to Judith Warren Little’s work, Hargreaves (1992) argues that a culture of collaboration “goes right against the grain of all the pressures and constraints that normally come with teachers’ work” (p. 227). He identifies two contextual aspects that particularly restrict the possibilities and the scope of collaboration, and, thus, the development of a collaborate teacher culture. The first aspect is that for elementary school teachers there is almost no time scheduled away from their classroom that allows them to systematically collaborate with their colleagues. But he also warns, with reference to his own study on teachers’ use of preparation time, that preparation time provides only *opportunities* for collaboration and the development of a collaborative teacher culture but *not a guarantee* that a collaborative culture develops: “Issues of administrative behaviour and political control are also important” (p. 228). The second constraint identified by Hargreaves concerns the mandated curriculum:

Where national, provincial and/or school board administrators produce highly detailed, heavily content-laden curriculum guidelines, teachers are left with little to collaborate about. When new programmes are introduced or teachers are moved from one grade to another, many teachers’ energies outside the classroom get diverted into mastering the details of the new programme, so that there is little time, energy or scope left to develop programmes with others. For these reasons, where collaboration does exist, it is often not particularly searching or wide-ranging. (p. 228)

The kind of collaboration he mentions in the last sentence – collaboration that “focuses on the immediate and the practical to the exclusion of longer-term planning concerns” (p. 229) – Hargreaves calls *bounded collaboration*. While bounded collaboration might address what Lortie called teachers’ orientation toward individualism, it does not address their orientations toward presentism and conservatism, which are obstacles toward building and sustaining a collaborative

teacher culture in a school. Based on what he said in the context of the second constraint, Hargreaves (1992) concludes:

If collaboration is to triumph not just over individualism but also over presentism and conservatism too, teacher development must be reconnected to curriculum development, so that there is something sufficiently broad and significant about which to collaborate. (p. 229)

The fourth teacher culture that Hargreaves (1992) has identified he labels *contrived collegiality*, by which he means collegiality that is characterized by “a set of formal, specific bureaucratic procedures to increase the attention being given to joint teacher planning and consultation” (p. 229), in other words, the collaboration is driven by fixed, externally established contexts and conditions, like “initiatives like peer coaching, mentor teaching, joint planning in specially provided rooms, formally scheduled meetings” (p. 229). While contrived collegiality, Hargreaves argues, is also meant to support the successful implementation of new approaches, the best it can accomplish, however, is to be “a useful preliminary phase in the move towards more enduring collaborative relationships between teachers” (p. 230). Compared to a culture of contrived collegiality, “collaborative cultures do not mandate collegiality and partnership: they foster and facilitate it” (p. 230).

Hargreaves (1992) argues that it is the forms of teacher cultures – the specific “patterns of relationship between teachers and their colleagues” (p. 232) – that contribute substantially to the success and failure of teacher development and teacher change. Summarizing his discussion of the teacher cultures of individualism and balkanization, he finds that

Individualism and balkanization, then, suit neither the advocates of locally generated, school-based curriculum development nor the supporters of top-down, bureaucratically imposed models of curriculum implementation. Both models of educational change – top-down and bottom up – are equally ill-served by these two prevailing cultures of teaching. (p. 232)

On the other hand,

collaborative cultures are most compatible with the interests of local curriculum development and the exercise of discretionary professional judgement. They foster and build upon qualities of openness, trust and support between teachers and their colleagues. (p. 233)

A collaborative culture, which fosters and builds openness and trust, is central to teacher change, because teaching is deeply embedded in a teacher’s identity, a point that will be discussed in more detail next, and a point that Hargreaves sees at the core of the argument for the effectiveness of the collaborative culture over the other three in terms of promoting, fostering, and sustaining teacher change:

Teachers’ work is deeply embedded in teachers’ lives, in their pasts, in their biographies, in the cultures of traditions of teaching to which they have become committed. Developing the teacher, therefore, also involves developing the person, developing the life. In this respect, the interweaving of the personal and the professional in collaborative

cultures, and the qualities of trust and sharing within those cultures, provide the most collegially supportive environment for change. (p. 233)

### 4.1.3 Effective Teacher Professional Development

A number of publications on professional development for teachers suggest that there is now an “overwhelming consensus” (Reitzug, 2002, p. 12.13) of what principles characterize effective professional development. Based on a summary of empirical research on the effectiveness of professional development, Hawley and Valli (1999) and Reitzug (2002) provide each a list of principles for effective teacher professional development. The following list summarizes those seven principles of effective professional development that both lists have in common (the summary is taken from Falkenberg, in press):

- (1) Professional development should be driven by identified gaps between actual and desired student learning and the improvement of teaching practice to address those gaps.
- (2) What and how professional learning opportunities are provided should be co-constructed with the learners (teachers).
- (3) Professional development should be school-based.
- (4) Professional development should be organized around *collaborative* problem solving in a community of learners in which teachers interact with each other.
- (5) Professional development should be inquiry oriented; as Wilson and Berne (1999) express this point: “teacher learning ought not be bound and *delivered* but rather *activated*” (p. 194).
- (6) Professional development should be continuous and should be supported by school and division leaderships and through “modelling and coaching” (Reitzug, 2002, p. 12.17).
- (7) Professional development should be part of a comprehensive change process (of a division, for instance) and should not just be focused on the development of individual teachers.

In section II-4.3.3 we discuss professional development schools (PDSs) as sites for on-going professional development. PDSs provide ideal sites for professional development of the type outlined here (see Falkenberg, in press), particularly since PDSs are conceptualized as a structural framework for more sustainable educational change. Furthermore, PDSs are an attempt to bring the competencies in teacher professional development of the school system and the university together in the form of school-university partnerships (Ravid & Handler, 2001); such school-university partnerships seem to be very promising in the light of the link between teachers engaged in effective professional development and the education of teachers for such an engagement in universities as suggested by Hawley and Valli (1999):

If the new consensus of effective professional development has significant implications for the way professional development is conceptualized and provided in schools, it also calls into question the role that colleges and universities have been playing in the continuing education of educators. Serious questions need to be raised about the content and processes that are embodied in college- and university-based programs for preparing teachers and administrators. (p. 145)

The next section looks at teacher change from the perspective of university-based, pre-service teacher education.

## 4.2 Teacher Change: Pre-Service Teacher Education

In this section we discuss what we consider of great relevance for faculties of education that want to contribute to a change in teacher education to prepare teacher candidates for education for sustainability. We use the term “pre-service teacher education” for that part of the education of teachers that proceeds and is a formal requirement for teacher certification in Canada; and we reserve the term “teacher education” as a term whose meaning includes all phases of the education of teachers, including the professional development phase.

### 4.2.1 Learning in Pre-Service Teacher Education Programs

In the pre-service teacher education research literature, the role of beliefs and attitudes by those entering a pre-service teacher education program has been identified as being crucial to what and how teacher candidates learn in a pre-service teacher education program (Falkenberg, 2010; Kennedy, 1999; Richardson, 1996). Generally two types of experiences are considered relevant here (Richardson, 1996, pp. 105-106).<sup>15</sup> The first type captures teacher candidates personal experience, which

include aspects of life that go into the formation of world view, intellectual and virtuous dispositions; beliefs about self in relation to others, understandings of the relationship of schooling in society; and other forms of personal, familial, and cultural understandings. (Richardson, 1996, p. 105)

The second type of experience concerns experience with schooling and instruction. Here, Dan Lortie (1975) has pointed out that when teacher candidates enter a pre-service teacher education program, they have about 15,000 hours of observation of and experience with teaching in schools, namely as students in the K-12 school system. Being a student, Lortie (1975) says, functions for many as an *apprenticeship for being a teacher*:

The interaction [in the classroom] is not passive observation... the student learns to ‘take the role’ of the classroom teacher, to engage in at least enough empathy to anticipate the teacher’s probable reaction to his behaviour. This requires that the student project himself into the teacher’s position and imagine how he feels about various student actions. (pp. 61-62)

Because of the nature of this apprenticeship, Lortie called it “Apprenticeship of Observation”. In recognition of the important role of prior beliefs about teaching and learning for learning to teach, Lortie’s notion of the Apprenticeship of Observation has received a lot of attention in recent pre-service teacher education scholarship (see, for instance, Bullock & Russell, 2010; Darling-Hammond, 2006).

The learning to teach literature suggests two things. First, many teacher candidates come with beliefs about teaching and learning into their pre-service teacher education program that are

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<sup>15</sup> Richardson (1996, p. 106) discusses as well “formal knowledge” (like school subject knowledge and pedagogical knowledge) as a source of *teachers’* beliefs about teaching and learning. However, here we are only considering sources of knowledge relevant to learning to teach in those *entering* a teacher education program.

problematic for learning to teach in the way now promoted (Hammerness, Darling-Hammond, Bransford, 2005; Lorti, 1975; Richardson, 1996; Wideen, Mayer-Smith, & Moon, 1998). Second, it is very difficult to change those beliefs in teacher candidates in pre-service teacher education programs (Britzman, 2003; Richardson, 1996; Richardson & Placier, 2001; Wideen et al., 1998). The reason for those difficulties is that teacher candidates' beliefs about teaching and learning function as their *frames of reference* (Kennedy, 1999) or their *filters* (Wideen et al., p. 145) which they use to make sense (or no sense) of what they experience in their course work and in their practicum teaching.

This generally strong resistance to change through pre-service teacher education programs of teacher candidates' preconceived notions of teaching and learning led Richardson (1996) in her review article to the following pessimistic overall assessment:

Except for the student-teaching element, preservice teacher education seems a weak intervention. It is sandwiched between two powerful forces – previous life history, particularly that related to being a student, and classroom experience as a student teacher and teacher. Experience as a student is important in setting images of teaching that drive initial classroom practice, and experience as a teacher is the only way to develop the practical knowledge that eventually makes routine at least some aspects of classroom practice and provides alternative approaches when faced with dilemmas. (p. 113)

In a later review of research on teacher change in teacher candidates, Richardson (2001, pp. 914-917) references a number of studies that do indeed document change to teacher candidates' beliefs and attitudes. However, the high number of studies documenting no change through pre-service teacher education programs or particular courses make the overall findings on the matter very mixed. Richardson's interpretation of the substance of these mixed findings reinforce what she expressed at the end of the previous quote above, namely that a change in beliefs and attitudes are more likely if teacher candidates' learning in a pre-service teacher education program is more closely linked to first-hand teaching experiences or dilemmas and problems linked to concrete teaching situations relevant to teacher candidates:

These studies indicate the difficulty in affecting cognitive change, particularly change in deep-seated beliefs, in preservice teacher education programs. This problem, some suggest, relates to the preservice students' lack of teaching experience and therefore of practical knowledge (Richardson, 1996). This hypothesis is bolstered by evidence of changes that took place during student teaching when preservice teachers began to experience the overwhelming tasks associated with full-time teaching. (Richardson, 2001, p. 916)

Pre-service teacher education that is linked to a school-university partnership – an approach we discuss below – seem, thus, far more promising in addressing teacher candidates' deep-seated beliefs about teaching and learning.

So far the discussion on the role of teacher candidates' beliefs and attitudes was focused on the impact of those beliefs on teacher candidates' learning to teach. Here, the *functional* role of beliefs and attitudes for learning to teach is considered. However, other pre-service teacher education research literature looks at the *normative* role of beliefs and attitudes in pre-service teacher education, where the question is not whether teacher candidates' beliefs about and attitudes toward teaching and learning are in the way of their learning to teach, but the question is rather what beliefs and attitudes overall are worth for teacher candidates to have in the light of the

larger purpose of schooling and education to which they are expected to contribute. The question of the *normative* role of teacher candidates' beliefs and attitudes is particularly relevant in the light of the moral imperative of the problem of sustainability as it is characterized in section II-3. The pre-service teacher education literature that considers stronger the normative role of beliefs and attitudes and how those are linked to teacher candidates' learning revolves around the notion of teachers' self and identity and the role those play in educational change (see, for instance, Carson, 2005; Rodgers & Scott, 2008). Rodgers and Scott (2008) look at "four historical pre-service teacher education programs that explicitly educated the personal/critical/social self, and current effort to educate awareness of self and identity" (p. 744). While each of the historical programs had idiosyncratic features, they all had in common that they had developmentally structured programs, a consistent continued focus on teacher candidates' developing self and professional identity, and were grounded in the idea of experiential learning. The chapter, however, does not report on empirical findings about the impact of those programs on teacher candidates' developing self and identity. In a number of other approaches to pre-service teacher education, however, working with teacher candidates' self and identity is recognized as central to helping with their becoming teachers (see, for instance, Korthagen, 2004; Lunenberg & Korthagen, 2009).

Feinam-Nemser (2001) argues that the education of teachers (which include pre- as well as in-service education) should be conceptualized as a continuum of sustained teacher learning. Falkenberg (in press) argues that based on central ideas from the literature on learning-to-teach the most promising approach to structural such a continuum of sustained teacher learning is school-university partnerships that allow to integrate pre- and in-service learning. A number of different types of school-university partnerships have been proposed and implemented (Ravid & Handler, 2001). In section II-4.3.3 we discuss in more detail the idea of professional development schools (PDSs), which have been suggested in particular in the American learning-to-teach literature as the probably most integrated approach to the continuum of sustained teacher learning (for a modified version of the professional development school, see also Falkenberg, in press).

#### 4.2.2 Governance of Pre-Service Teacher Education

There is a relatively small but important literature on the governance of pre-service teacher education programs. The literature deals with the question of what institutional entities have what power over what aspect of pre-service teacher education program.<sup>16</sup> Dale (1997) in his analytical framework for analysing governance matters of pre-service teacher education distinguishes between *maters of focus*, which captures the aspects of pre-service teacher education which are relevant under a governance perspective, and *matters of governance*, which captures the institutional entities that govern some of those aspects to some degree. Generally, there are three such institutional entities identified that play a role in matters of governance in the Canadian context (Grimmett, 2008; Young, Hall, & Clarke, 2007): the provincial government, the universities, and the teaching profession.<sup>17</sup> In terms of matters of focus, Dale (1997) distinguishes between three broad aspects of pre-service teacher education programs which are involved in the governance of pre-service teacher education: funding, regulation (e.g., regulation concerning duration, curriculum, and evaluation), and delivery (e.g., staffing and site).

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<sup>16</sup> For the rest of this paragraph we draw on Falkenberg and Young (2010, pp. 168-171).

<sup>17</sup> For a more differentiated framework see Falkenberg & Young (2010).

Comparative studies of the governance of pre-service teacher education across Canadian provinces or across different countries (see, for instance, Grimmett, 2008; Young, 2004; Young, Hall, & Clarke, 2007) have established different patterns of governance of pre-service teacher education across jurisdictions and across time. For instance, within the triangle of the three institutions governing teacher education in Canada and England, Young, Hall, and Clarke (2007, pp. 91-92) identify pre-service teacher education governance in Manitoba more strongly sided toward *institutional governance*, meaning that the university has in practice the strongest enacted authority over the different aspects of pre-service teacher education. This contrasts with their assessment of the governance of pre-service teacher education in British Columbia, where they see authority over pre-service teacher education more evenly enacted between the three institutions of governance. (In British Columbia the authority of the teaching profession is institutionalized in its College of Teachers, which does not exist in Manitoba.)

Young, Hall, and Clarke (2007) suggest that the different distribution patterns of authority across the three institutional entities in the governance of pre-service teacher education across different jurisdictions and time are, at least partially, a reflection of different notions of the purpose of teacher education, each providing a rationale for the need for greater authority for one of the three institutional entities:

We would distinguish between the characterisation of initial teacher preparation as essentially: (i) a generative practise in which enquiry (and therefore knowledge production) is a defining feature of the teaching profession – a stance that would dovetail most easily with the mandate of the university; (ii) a replicative practise of socialisation and induction – necessarily drawing on the embedded practical expertise of teachers; or (iii) a prescriptive practice designed to properly prepare new teachers to effectively implement a provincial or national agenda for schooling – where government control and supervision would logically prevail. (p. 92)

### 4.2.3 Professional Development for Teacher Educators

It has been argued that teaching is inherently a moral activity because of the motivation out of which teaching is done and because of the (potential) effect it has on the morality of students.<sup>18</sup> Fenstermacher (1990) describes those two reasons as follows:

What makes teaching a moral endeavor is that it is, quite centrally, human action undertaken in regard to other human beings. . . . The morality of the teacher may have a considerable impact on the morality of the student. The teacher is a model for the students, such that the particular and concrete meaning of such traits as honesty, fair play, consideration of others, tolerance, and sharing are ‘picked up,’ as it were, by observing, imitating, and discussing what teachers do in classrooms. (p. 133)

Because teachers undertake their teaching in regard to other human beings (their students) teaching is a moral undertaking, even if a teacher would not frame her work in this way.

Fenstermacher’s argument applies to K-12 teaching as well as to other forms of teaching, like the teaching in teacher education programs. Thus, it is also the way in which the teacher educators engages with her teacher candidates and her life as far as her students participate in it

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<sup>18</sup> See, for instance the arguments discussed in Falkenberg (2007).

that have an impact on the moral development of teacher candidates, not just the course content the students are exposed to. The modeling aspect of being a teacher, thus, puts a particular responsibility on the teacher educator for her own way of engaging with her life. In the context of education for sustainability, the way in which a teacher educator lives sustainably (in the wide sense outlined in section II-3), thus, is of great importance to her role as a teacher educator engaged in education for sustainability. This modeling perspective opens up the issue of the education and professional development of teacher educators, i.e., those who teach in teacher education programs – including those classroom teachers who supervise teacher candidates' practica.

There is no formal education for or preparation of teacher educators. Such preparation relies on self-initiated and self-directed professional development by the teacher educators themselves. However, over the last two decades an approach to systematically researching one's own teaching practice as a teacher educator for the purpose of improving that very practice has been developed: self-study of teacher education practices (Loughran, Hamilton, LaBoskey, & Russell, Eds., 2004; Loughran & Russell, Eds., 2002).<sup>19</sup> The self-study publications illustrate the efforts and time that have to go into a systematic attempt to improving one's teacher education practice. How even more challenges would it be to engage in a systematic attempt to changing one's beliefs about and attitudes toward living sustainably as a citizens who happens to be a teacher educator?

#### 4.2.4 Reorienting Pre-Service Teacher Education toward Sustainability

In 1998, the Commission on Sustainable Development called for UNESCO to develop guidelines for reorienting teacher training to address sustainability. In turn, UNESCO created a UNITWIN/UNESCO Chair on Reorienting Teacher Education to Address Sustainability at York University in Toronto, Canada. The Chair established an International Network of 30 teacher-education institutions in 28 countries to address this issue. The International Network met in October 2000 and began planning strategies and methods for moving forward. (Hopkins & McKeown, 2005, p. 3)

The UNITWIN/UNESCO Chair on Reorienting Teacher Education to Address Sustainability, Charles Hopkins, and his collaborators have been publishing a number of papers dealing with the issues of "reorienting teacher education to address sustainability".<sup>20</sup>

As the examples of "reorienting" teacher education toward sustainability described in Hopkins, International Network of Teacher Education Institutions, & McKeown (2007) show, the underlying notion of sustainability is as broad a notion as discussed in section II-3.1. For instance, Down (2007) describes how the problem of violence in Jamaican society was addressed in a Jamaican teacher education program by framing the problem in the larger context of sustainability and by changing the literature program for teacher candidates in the program.

Of particular interest should be the guidelines and recommendations for reorienting teacher education to address sustainability that were published as part of this publication series (Hopkins & McKeown, 2005). Although it is not possible to discuss the publication in detail, we want to

<sup>19</sup> Loughran and Russell are also the editors of an international journal on self-study: *Studying Teacher Education: A Journal of Self-Study of Teacher Education Practices*, published by Routledge.

<sup>20</sup> See, for instance, Hopkins & McKeown, 2005; Hopkins, International Network of Teacher Education Institutions, & McKeown, 2007; McKeown, 2006.

highlight some major points. The guidelines and recommendations are based on survey responses by teacher educators from 18 member institutions of the International Network of Teacher Education Institution (p. 12).<sup>21</sup>

Hopkins and McKeown (2005) identify particularly two *enablers* for change in institutions of higher education: time and funding.

Released time from traditional responsibilities – teaching, advising, supervising student teachers, and committee work – frees faculty to focus their attention on planning and implementing change. Funding also enable change. Funding for faculty-released time, allows them to concentrate their efforts on planning and implementing change. Funding also provides resources . . . that make program development easier. (Hopkins & McKeown, 2005, p. 29)

This recognition of the need of resources (here: time and funding) to enable focused work on change matches what the literature on whole-system change suggests that is discussed in section II-4.3.

As central challenges to a reorientation of teacher education toward sustainability, the authors name (Hopkins & McKeown, 2005, pp. 31-32):

- lack of institutional awareness, institutional support, and institutional resources
- sustainability is not a priority in the educational community (teaching profession and ministries of education)
- education for sustainability is not part of ongoing educational reform, which is partially due to its transdisciplinary nature in light of a curriculum framework that is structured by and separated into traditional subject areas
- lack of coordination and collaboration beyond traditional institutional borders: education for sustainability programs are often developed without the involvement of local communities and ministries of education work separately from other ministries like those for health, agriculture, etc.

Hopkins and McKeown (2005) provide a number of recommendations to ministries of education and faculties of education to support a reorientation of teacher education toward sustainability. Following are what we would consider the major recommendations. All recommendation below are paraphrased, and most are an attempt to summarize several recommendations in the original document.

Recommendations on ministerial and national involvement (Hopkins & McKeown , p. 34)

- Education for sustainability should be mandated for elementary and secondary education.
- Teacher education (pre- and in-service) and teacher certification should be aligned with the mandate of education for sustainability for elementary and secondary education.

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<sup>21</sup> To be consistent with the rest of the report, we will be using the term “education for sustainability”, although the publications we reference in this section use the term “ESD” or “Education for Sustainable Development”.

- A national team for education for sustainability that includes professional organizations and issue-related organizations should be created to integrate their work into institutional initiatives around education for sustainability.
- The ministry of education should work with textbook publishers to infuse issues of sustainability into textbooks at all levels.

Recommendations on community and regional / provincial involvement (Hopkins & McKeown, p. 37)

- Teacher education institutions should link with community groups, other teacher education institutions, and the teaching profession to foster and strengthen a reorientation of teacher education toward sustainability.

Recommendations on change within institutions of higher education (Hopkins & McKeown, pp. 39-48)

- Collaboration across different faculties within the same institution of higher education should be promoted to develop interdisciplinary courses and to gain support by senior administration on resource needs and policy changes.
- At the faculty of education level, faculty members should advocate and lobby for a reorientation of the teacher education program towards sustainability and the implementation of new education for sustainability projects.
- At the course level, faculty members should provide for interdisciplinary course work, demonstrate pedagogical techniques that foster higher-order thinking skills, and provide teacher candidates with opportunities to engage with different issues of the broad notion of sustainability.

Recommendations on partnerships (Hopkins & McKeown, p. 50)

- Partnerships between pre-service teacher education institutions and elementary and secondary schools as well as other local, national, and international networks linked to education for sustainability should be strengthened.

Recommendations on research (Hopkins & McKeown, pp. 51-52)

- Faculty members should create research agendas on different issues related to education for sustainability, also in order to develop strong research-based arguments.

Recommendations on information technology opportunities (Hopkins & McKeown, p. 57)

- Faculties of education should use information technology as a tool for in-service to teachers who live and work away from the campus location.

## 4.3 Educational Systems Change

### 4.3.1 Whole-System Reform

In this section we present ideas that Michael Fullan, who is recognized as one of the leading scholars on education change, presents in two book publications. In the first book (Fullan, 2001) he revisits the notion of educational change. The second book (Fullan, 2010) discusses the idea of a whole-system reform in education.

Fullan (2001, p. 34) distinguishes between “restructuring” and “reculturation” in educational change, the latter of which he explicates as the process through which “teachers come to question and change their beliefs and habits”, namely those beliefs and habits that were characteristic of their teaching culture before the process of reculturation. Fullan suggests that while “restructuring . . . occurs time and time again”, “reculturing . . . is what is needed”. However, teachers are generally caught up in day-to-day pressures that they need to respond to, and those pressures function as obstacles for teacher learning to a degree required for educational change (Fullan, 2001, pp. 33-34). Fullan argues that studies about teacher learning suggest that in general teacher learning is not at a depth required for a shift in understanding that leads to important change in teaching practices (Fullan, 2001, pp. 34-36). For those reasons, Fullan draws the conclusion that “change will always fail until we find some way of developing infrastructures and processes that engage teachers in developing new understandings” (Fullan, 2001, p. 37).

Such infrastructures and processes need to consider the “subjective meaning of change” by teachers and other individuals involved in an educational change process:

The real crunch comes in the relationships these new programs and policies and the thousands of subjective realities embedded in people’s individual and organizational contexts and their personal histories. How these subjective realities are addressed or ignored is crucial for whether potential changes become meaningful at the level of individual use and effectiveness. (Fullan, 2001, pp. 45-46)

Fullan identifies three components or dimensions of implementing a new educational program or policy, of which one is foundational to the other two, and he claims that in most cases of significant educational change it is necessary to make changes in all three of those components:

There are at least three components or dimensions at stake in implementing any new program or policy: (1) the possible use of new or revised *materials* (instructional resources such as curriculum materials or technologies), (2) the possible use of new *teaching approaches* (i.e., new teaching strategies or activities), and (3) the possible alteration of *beliefs* (e.g., pedagogical assumptions and theories underlying particular new policies or programs). All three aspects of change are necessary because together they represent the means of achieving a particular educational goal or set of goals. (Fullan, 2001, p. 39)

Innovations that do not include changes on these [three] dimensions are probably not significant changes at all. For example, the use of a new textbook or materials without any alteration in teaching strategies is a minor change at best. Put in terms of the theme

of this book, *real change involves changes in conceptions and role behavior* [italics added], which is why it is so difficult to achieve. (Fullan, 2001, p. 40)

Changes in beliefs and understanding (first principles) are the foundation of achieving lasting reform. (Fullan, 2001, p. 45)

In a second book, Fullan (2010) draws on lessons from a recent whole-system approach to educational school reform in Ontario (Levin, 2008) to develop the components of successful educational whole-system reform. Whole-system reform transcends the program approaches Fullan discussed earlier (Fullan, 2001):

*The solution is not a program; it is a small set of common principles and practices relentlessly pursued.* Focused practitioners, not programs, drive success. Neither off-the-shelf programs or research per se provides the answer Professionals working together with focus is what counts. (Fullan, 2010, p. 59)

Fullan (2010) identifies the following nine “main elements of successful whole-system reform” (p. 21):

1. *A small number of ambitious goals*

In his earlier book, Fullan (2001) already pointed out: “The main problem [of educational change] is not the absence of innovation in school, but rather the presence of too many disconnected, episodic, fragmented, superficial adorned projects” (p. 21) and “Policies and programs are often imposed on schools in multiple disconnected ways” (p. 27).

2. *A guiding coalition at the top*

One important feature of the leadership by such a guiding coalition is “resolute leadership”, which for Fullan (2010) is characterized by:

- the proposed focus of the reform needs to be an enduring priority of the leadership (p. 64);
- leadership that builds the “guiding coalition” (p. 65);
- leadership that figures out “how to trigger and reinforce the moral purpose and responsibility of teachers”, i.e., leadership that recognizes that it needs a positive working relationship with teachers (p. 65);
- leadership that keeps up the pressure (“all the time”) and is alert to deflecting distractors (p. 65);
- leadership that is willing to invest into a positive momentum with new money (p. 65)
- leadership that uses intelligent accountability (pp. 66-70), which is accountability that “involves building cumulative capacity and responsibility that is both internally held and externally reinforced” (p. 66); “internally held” means that those who are to be held accountable have internalized the goals and hold themselves to account, a process that is externally reinforced through incentives rather than through punishment (p. 66).

3. *High standards and expectations*

For Fullan, it is a “moral purpose” that underlies the high standards and high expectations. He conceptualizes this underlying moral purpose as a motivating or driving force on the way to achieving the ambitious goals:

In all systems go, moral purpose and high standards are not something stated up front as a general wish. Moral purpose is powerful when it is embedded in all strategies and actions. Every policy, strategy, and action . . . should be designed and experienced in a way that automatically and relentlessly reminds people every day that education reform is a matter of moral purpose of utmost importance to us individually and collectively. (Fullan, 2010, p. 63)

#### 4. *Collective capacity building with a focus on instruction*

For Fullan, this is the crucial element among the nine for whole-system reform: “Collective capacity is the breakthrough concept to make all systems go. . . . Collective capacity is much more powerful [than individualistic strategies] and is the sine qua non of system reform” (Fullan, 2010, p. 71). Building collective capacity, Fullan points out, requires “complex resources”. “Complex resources refer to a combination of factors (three or more) that go together, such as reduced class size, professional learning, and the instructional leadership of a focused, collaborative principal” (Fullan, 2010, p. 20). It is the need for complex resources that make collective capacity building a challenging undertaking.

This element contributes to whole-system reform particularly (a) through a more effective availability and distribution of the desired knowledge and (b) through generating commitment:

The power of collective capacity is that it enables ordinary people to accomplish extraordinary things – for two reasons. One is that knowledge about effective practice becomes more widely available and accessible on a daily basis. The second reason is more powerful still – working together generates commitment. (Fullan, 2010, p. 72)

Collective capacity building in educational whole-system reform includes in Canada policy makers at the provincial level (ministries of education), without whose commitment and leadership whole-system reform is not possible. Of interest is Fullan’s take on the collective capacity building *within* a ministry of education:

We are talking here about capacity building and the first-order question is whether the State Department or Ministry of Education has its own capacity house in order. It may seem obvious, but it takes capacity to lead capacity. Most state departments, including Ontario’s Ministry of Education in 2003, do not have the capacity to lead all systems go, which is the enterprise of helping the whole system focus on instruction, assessment, correction, and instruction on a continuous basis in all schools and in all districts. In a word, states normally do not have the *domain knowledge* required for this work. Second, they tend to operate as bureaucracies, which means there is too much paperwork, too many rules, arcane communication, and the dreaded silos (think uncoordinated octopus). The first thing to do then – and this is crucial but very hard to do – is to change the culture of the state department, adding new capacities. (Fullan, 2010, p. 73)

#### 5. *Individual capacity building with a focus on instruction*

Fullan (2010, p. 89) provides a list of “incentives that work for teachers” in terms of creating the conditions for individual capacity building: good salaries; decent surroundings; positive climate; strong induction; extensive professional learning; opportunity to work with and learn

from others; supportive, and even assertive, leadership about the agenda; getting helpful feedback; reasonable class size; long-term collective agreements; realizable moral purpose.

For Fullan (2010) the individual capacity building is directly linked to the collective capacity building: “Individual capacity thrives if it is integrated with strategies and experiences that foster collective capacity” (p. 87).

6. *Mobilizing the data as a strategy for improvement*

As one of the characteristics of effective school districts Fullan identifies the collection, access, and use of data on student learning to monitor progress toward set goals (Fullan, 2010, p. 36).

7. *Intervention in a nonpunative manner*

8. *Being vigilant about “distractors”*

Having too many core initiatives at the same time functions as a “distractor” (Fullan, 2010, p. 61).

9. *Being transparent, relentless, and increasingly challenging*

#### 4.3.2 Long-Term View of Educational Change

Hargreaves and Goodson (2006) report on the overall findings from the 5-year “Change over Time?” study, in which the researchers involved in the project collected and analysed data from teachers and administrators of eight U.S. and Canadian High Schools on their long-term experiences with educational change in their respective school over a period of 30 years, from the 1970s to the 1990s. From their data, the authors identified five change forces over the three decades, which we present in the following in turn:

1. Waves of Reform
2. Leadership Succession
3. Student and Community Demographics
4. Teacher Generations
5. School Interrelations

##### *Waves of Reform*

“Schools are subject to influence by repeated waves of reform that define historical periods or directions that the schools, depending on their identity, either embrace or resist” (Hargreaves, & Goodson, 2006, p. 15). The embrace or resistance was also identified at the individual teacher level: “Teachers resist particular reforms according to the correspondence or not of the reforms with their generational missions, their academic subject orientations and commitments, and their school’s identity” (p. 15). For instance, “reforms that reinforced the traditional grammar of schooling and exercised more constraints on teacher autonomy were more typically embraced by teachers who, in generational terms, began their careers later than the mid to late 1970s” (p. 15).

For the teachers in the study, those waves of reforms are experienced as *cumulative* and *contradictory* (p. 18). On the cumulative experience the authors write:

Just as important as the content of the reforms were their interconnected and cumulative effects. Teachers with long careers do not experience reforms in isolation but in interrelationship. A snapshot event that replaces bad with good for policy makers is a long-term, historical, and career-long process for teachers that has cumulative meaning and impact for them. (Hargreaves & Goodson, 2006, p. 16).

Some veteran teachers who participated in the study and “who had lived through years of educational reform” (p. 17) reported that they just tried to ignore the reform efforts or became cautious and kept their focus on the classroom (p. 17).

### *Leadership Succession*

Hargreaves and Goodson (2006) emphasize the importance of school leadership and its succession scheme for changes in individual schools:

One of the most significant events in the life of a school that is most likely to bring about a sizeable shift in direction is a change of leadership. Although waves of reform exert the greatest and most immediate pressures on whole systems, it is changes of leaders and leadership that most directly and dramatically provoke change in individual schools. (p. 18)

Leadership succession, the authors write, “can be planned or unplanned and foster continuity or discontinuity” (p. 19). Their study found that “the most successful instances of succession . . . were when insiders were groomed to follow their leader’s footsteps and furthered their achievements within the culture of the school” (p. 19).

In their explanation for “poor succession”, the authors draw on Wenger’s (1998) distinction between *inbound knowledge* (“knowledge of leadership or a particular school that is needed to change it, make one’s mark on it, turn it around” (Hargreaves & Goodson, 2006, p. 19)), *insider knowledge* (“knowledge one gains from and exercises with other members of the community after becoming known, trusted, and accepted by them” (p. 19)), and *outbound knowledge* (“knowledge needed to preserve past successes, keep improvement going, and leave a legacy after one has left” (p. 19)). The authors explain the lack of sustainability of educational change over time in most of the schools they studied by pointing to the following:

- the schools’ and systems’ preoccupations with inbound knowledge to the detriment of considering outbound knowledge: “the sustainability of school improvement and reform initiatives is repeatedly undermined by excessive emphasis on the inbound knowledge of leadership at the expense of equally important outbound concerns” (Hargreaves & Goodson, 2006, p. 20).
- lack of insider knowledge: “almost no principal stayed long enough to acquire the status of trusted insider” (Hargreaves & Goodson, 2006, p. 19).

In the three schools in which outbound knowledge was fully considered, a *distributive leadership* model was used to support the sustainability of educational reform, where “it was the whole staff, not just one successor, who were able to move the school into its next phase of development” (p. 20).

### *Student and Community Demographics*

In six of the eight schools involved in the study two types of shifts in student and community demographics – immigration of culturally and linguistically diverse students and their parents and the integration of special needs students into regular classrooms – “precipitated internal and external change in six of the project schools and also colored how teachers dealt with it” (Hargreaves & Goodson, 2006, p. 23):

Increased diversity and poverty were often seen as bringing about problems of lower standards and deteriorating behavior that had their origins solely in the students and their families and not also in the teaching and learning practices of the schools. . . . At Stewart Heights, continuous observation of the School Climate Committee indicated that over time, it had initially responded to problems of student misbehavior by reviewing the curriculum and strengthening the school as a community. After the impact of Secondary School Reform in the late 1990s, however, when teachers were overloaded with implementation and had less time to spend with students, the School Climate Committee began to blame students themselves for increasing misbehavior and merely tightened up behavioral codes and other demands for compliance in responses. (Hargreaves & Goodson, 2006, p. 23)

### *Teacher Generations*

With reference to the study’s findings, Hargreaves and Goodson (2006) suggest that how teacher understand change and how they support or resist change “is not simply a matter of teachers’ age or even their career stage . . . but also of the generational missions of teaching and the demographic forces that shape them” (p. 24). The identities of teachers, they suggest, are generally shaped *early on in their career* (but not in the earliest stages) by the themes and missions of teaching prominent at that time (p. 24).

### *School Interrelations*

The Change-Over-Time? study found also that the social geography of a school – its physical location relative to other schools – played a role in the way in which change was experienced and responded to (Hargreaves & Goodson, 2006, p. 26). For instance, “three of the project’s innovative schools . . . were constantly competing and being compared against their surrounding and more traditional counterparts” (p. 26). Hargreaves and Goodson (2006) suggest that change over time has always been also a matter of social geography, but that it is even more so now:

In an age of globalization and standardization, school are becoming more like quasi-markets . . . . Principles of privatization or specialist emphasis are promoting greater choice between schools such as Barrett Magnet [one of the schools in the study] and its neighbors as the market separates and also connects schools and students who are chosen from those who are not. (p. 26)

Hargreaves and Goodson (2006) suggest that in particular historical moments these five “change forces” just described “converge . . . to create overarching and overwhelming waves of educational change” and that such converging “mark the beginning and the end of definite historical periods in a life of schools” (p. 28). Specifically they emphasize:

- Of the five change forces student demographics, teacher demographics (teacher generations), and leadership demographics (leadership succession) “were three of the key converging change forces revealed by the study” (p. 28).
- “Economics and demographics are the two major societal forces that drive the historical and generational periodization of education change over time” (p. 28).

With their second point Hargreaves and Goodson (2006) emphasize the crucial role that social, economic, and political forces in a society as a whole play in understanding educational change:

These three periods of reform, which emerged and converged on a case-by-case basis through the analysis of project data, provide a compelling case for understanding educational change as not only a universal and generic process, nor even as a cyclical one, but as a process that is also ultimately shaped by the great historical, economic, and demographic movements of our times. History and politics must move to the center of educational change theory and research in educational administration if change is not to be misunderstood and misrepresented as only a forward moving, largely technical and politically neutral process. (p. 31)

### 4.3.3 Linking School Change and Change in Teacher Education

In the 1980s two systematic school educational reform proposals were developed by teacher education scholars in the USA. The first was proposed by the Center for Educational Renewal at the University of Washington under the leadership of John Goodlad. The other proposal was developed by the Holmes Group, a group that was founded by a group of deans of faculties of education. Both reform proposals have two central features in common. First, both conceptualize school reform as a two-prong effort of simultaneous change: changing schools *and* changing the preparation of teachers to teach in those changed schools. They argued that one cannot be accomplished without the other (Goodlad, 1999; Holmes Group, 1995).<sup>22</sup> Second, both proposals envision continuous teacher professional development as an integral, structural component of each school. Both proposed *school-university partnerships* for both teacher pre-service education as well as teacher professional development (Goodlad, 1984; Holmes Group, 1990).<sup>23</sup>

The type of school that the Holmes Group proposed that would accommodate those school-university partnerships is the *professional development school* (PDS). For the Holmes Group PDSs have four purposes. The first three support the development of the teaching profession: (1) developing novice professionals (preservice teachers and beginning teachers); (2) continuing development of experienced professionals; (3) research for and development of the teaching profession. This development of the teaching profession is imbedded in an overall school reform better learning for all students, which is the fourth, overarching purpose of professional development schools.<sup>24</sup> According to Linda Darling-Hammond (2005b, p. 8), PDSs interrupt

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<sup>22</sup> For the respective reform proposals for schools see Goodlad (1984) and the Holmes Group (1986, 1990). For the respective reform proposals for teacher education see Goodlad (1990) and the Holmes Group (1995).

<sup>23</sup> The following draws on Falkenberg (in press).

<sup>24</sup> Grounded in central assumptions and findings in research in teacher education and teacher professional development, Falkenberg (in press) provides a rationale for why professional development schools are a

three patterns in the socialization of teachers in schools: “figure it out yourself”, “do it all yourself”, and “keep it to yourself”. However,

The American Association of Colleges for Teacher Education estimates that there are more than 1000 professional development schools in 47 states in operation in the USA (Darling-Hammond, 2005a, p. x).<sup>25</sup> While there are a number of school-university partnerships at in Canada (including at the University of Manitoba), there are, to our knowledge, no professional development schools in the sense outlined by the Holmes Group in operation in Canada.

## 4.4 Holistic Education

### 4.4.1 Systems Thinking

One of the frequently referenced concepts around sustainability is the idea of systems thinking. Senge et al. (2008) define systems thinking as seeing the patterns of the whole picture: “It simply means stepping back and seeing patterns that are, when seen clearly, intuitive and easy to grasp” (p. 230).

Clark (2001) suggests that, “this perspective [the perspective of systems thinking] reinforces the intuitive insight that no single, discrete entity can be fully understood apart from the complex whole of which it is an integral part” and that “systems thinking is contextual thinking because it recognizes that without a context, meaning is truncated and incomplete” (p. 24). He outlines several characteristics of systems thinking:

- (1) Systems thinking incorporates a “both/and” rather than an “either/or” logic. “While the systemic perspective recognizes the value of the scientific method and the benefits that have been derived from its technological accomplishments, it simultaneously honors the age-old wisdom and values that shaped human communities from the beginning” (p. 24).
- (2) Systems thinking assumes a living universe. Best metaphor for system thinking is not machine but organism.
- (3) Systems thinking is ecological thinking. The Earth’s ecological system is authentic and practical and this provides a more comprehensive and functional understanding of how systems work.
- (4) Systems thinking recognizes that we live in a participatory universe.

The observer is always and unavoidably an influential part of every experiment. This, of course, disproves the notion that science is, or can be, objective. This

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very promising approach to overcoming the problematic “division of labour” between universities and the school system in the education and professional development of teachers.

<sup>25</sup> Fullan, Balluzzo, Morris, and Watson (1998), however, caution against a too optimistic interpretation of those numbers: “The extent to which a professional development school actually exemplifies the characteristics outlined in *Tomorrow’s Schools* [by the Holmes Group] is difficult to determine, but many of our interviews suggested that the gap between rhetoric and reality is wide.” (p. 31)

means that rather than being discoverers of objective knowledge, we are creators of knowledge that always reflects the subjective perspectives of those who create it. (p. 25)

- (5) Systems thinking is both global and, at the same time local.
- (6) Systems thinking honours the long-range view, it honours First Nations practice of making decisions that gives consideration to “the seventh generation” (p. 26).

Clark (2001) concludes that systems thinking has power, value and relevance because it provides us with insights into the “big picture”. Its limitation is that it does not provide the detail that is often required to “fix” something. It becomes clear that both analytical thinking and systems thinking are complementary capacities.

#### 4.4.2 Educational Implications of Systems Thinking

Clark (2001) outlines the relevance of systems thinking to education and transformation and summarizes:

- (1) Systems thinking makes it possible to know more with less information.
- (2) Thinking and learning are systemic processes.
- (3) Humans are constructed of knowledge rather than discoverers of knowledge.
- (4) Curriculum must be organized systemically to reflect the natural process of intelligence/thinking/learning, to demonstrate the interrelationships among subjects, and to allow students to construct their own meaning.

Senge et al. (2008) outline the learning capabilities for systemic change (pp. 45-52), which must be continually practiced and mastered at the individual and organizational level:

- (1) Seeing systems: “In a world of growing interdependence, it’s more important than ever to learn how to expand the boundaries and see the larger systems”.
- (2) Cross-boundary collaborating: Collaborating across boundaries and working with people both inside and outside the organization that they have not normally worked with.
- (3) Purpose-driven acting: Going beyond reactive problem solving and envisioning what future one would like to create.

Senge et al. (2008) calls a particular way of seeing reality that increases opportunities for learning the “System-Thinking Iceberg” (pp. 172-177). It is represented in a diagrammatic form of an iceberg, where the depth of learning increases towards the bottom of the iceberg. The highest, first level categorizes events in which we react and ask the question “What just happened?” The second level categorizes patterns and trends in which we can anticipate and ask questions such as “What’s been happening? and “Have we been here or some place similar before?” The third and deepest level categorizes systemic structures in which we design and ask questions such as “What are the forces at play contributing to these patterns?” It is at this deepest level where our way of seeing the world transforms and we ask questions such as “What about our thinking allows this situation to persist?”

### 4.4.3 Holistic Approach to Teaching and Learning

If systems thinking will assist humans in developing a sustainable world, then what educational concepts and ideas will become an integral part of this movement? What research can we draw on that might provide assistance to schools in helping them provide their students an education in sustainable living? For a number of years a group of educators have been researching and advocating for holistic education. They have argued that until we provide an education for the whole child – the intellectual, physical, emotional, and spiritual aspects of a human being – we cannot prepare our students for a full and balanced life. There are a number of scholars that have written in this area (see, for instance, R. Miller, 1990, 1991; Flake, 1993; Forbes, 2003). John Miller (2007) defines the goals of holistic education as follows.

Holistic education attempts to bring education into alignment with the fundamental realities of nature. Nature at its core is interrelated and dynamic. We can see this dynamism and connectedness in the atom, organic systems, the biosphere, and the universe itself (Capra 1996). In contrast, the human world since the Industrial Revolution has stressed compartmentalization and standardization. The result has been fragmentation. (p. 3)

John Miller (2007) provides also a template for understanding holistic curriculum. He suggests that holistic education attempts to repair this fragmentation by providing an education that is *balanced*, *inclusive*, and *connected*. He characterizes these qualities as follows.

#### *Balance*

Curriculum and teaching must honor polar positions but also bring balance between them. They need to be seen not as one being more important than the other but that they are both strengthened by a balanced position. Currently in the world there is no real balance between these polarities; the positions listed on the right below seem to be more dominant. Our curriculum and teaching must help students understand these polarities and bring balance in their understanding and to their manifestation. Here are some dualities that need to be balanced:

Female	Male
Interdependent	Independent
Quality	Quantity
Inner	Outer
Intuitive	Rational
Environment	Economy
Network	Hierarchy
Consciousness	Technology
Sacred	Material
Global/Region	Nation

#### *Inclusiveness*

We need to see the three forms of teaching (transmission, transactional, and transformational) holistically. Up until now the transmission (direct instruction) orientation has been fairly dominant in classrooms, while the transactional (problem solving) orientation has been gaining in importance. It is the transformational orientation that has been neglected or ignored.

The main goal of a transmission orientation of teaching is to inform or provide knowledge and skills to students through direct teaching. This orientation assumes a one-way direction for knowledge and skills, namely from the teacher or books to student. The students' responsibility in this orientation is to accept, remember and be able to repeat back that knowledge.

The transaction orientation of teaching has students interact with the ideas and the knowledge provided, as is the case in problem solving situations. The interacting with the ideas provided by the teacher, books, etc. is usually at a cognitive level. The scientific or inquiry methods are approaches of this orientation.

The transformation orientation of teaching starts out with the acknowledgement of the wholeness of the student. In this orientation learning is seen as an interaction between the whole child (intellect, emotions, body and spirit) and the curriculum, the teacher, a book, an idea, etc. The child is seen as the constructor of knowledge from the inside out and connections are made both personally and socially. The concern of the teacher is helping students make connections with other knowledge, experiences, and ideas.

Holistic education includes all three orientations "as long as the form of learning does not discriminate or diminish the individual in any way, it can be included" (J. Miller, 2007, p. 12).

### *Connections*

The need for connectedness acknowledges the human need to explore and make connections as an attempt to reduce fragmentation. The focus of holistic education is on relationships and connections between concepts and ideas. The following are some of the important relationships that need connection:

- linear thinking and intuition
- relationship between mind and body
- relationship among domains of knowledge
- relationship between self and community
- relationship to the earth
- relationship between self and Self

## **4.5 Teaching for Sustainability**

### **4.5.1 The Integrated and Interdisciplinary Curriculum**

From the perspective of education for sustainability, the idea of an integrated and interdisciplinary curriculum is grounded in the view of a *holistic nature* of the problem of living sustainably. In section II-3.1.2 we have outlined the multi-strand notion of sustainability. This multi-strand approach requires a multi-strand approach to education for sustainability, and holistic education (section II-4.4.3), with its principles of balance, inclusion, and connection, provides such a multi-strand approach. The balance occurs as we move away from just a focus on the natural environment and give consideration to the other strands of sustainability and their interaction. All strands are important and need to be in balanced with each other to provide for well being beyond the current generation.

The inclusion principle of holistic education is followed when the many diverse voices are brought together in the discussion of sustainability in general and education in particular. The educational discourse needs to be widened to include not just those in education and government but also members of other professions, community groups, and businesses. This communal approach to education needs should then be reflected in the school curriculum that builds the foundation for students' school experiences.

The connection principle of holistic education is followed when the traditionally separate disciplines, subjects, and knowledge domains are connected to form an integrated whole. This is particularly important for education for sustainability that is grounded in a systems-theoretical (holistic) view of human life and its ecology (see section II-3.2). The integrated curriculum should then reflect this interconnectedness of the disciplines, subjects, and knowledge domains from a systems-theoretical perspective.

What can an integrated or interdisciplinary curriculum look like? There are multiple approaches to the integrated curriculum, almost as many as the number of educators who implement an integrated curriculum. Susan Drake (2007) suggests that this ambiguity is

one of the pitfalls of interdisciplinary approaches – they cannot be standardized or rarely even replicated by another set of teachers who wish to do the same thing. On the other hand, one of the greatest appeals of integration is this lack of a standardized definition. Teachers can be creative. They can set the curriculum in a relevant context. They can craft it around the needs of their students. They can even ask for students' input into what students want to learn. The ways to make connections across subject areas are limitless. This is both frightening and exhilarating for teachers. (p. 26).

At the most abstract level, all approaches to the integrated curriculum have one central feature in common, as Drake and Burns (2004, p. 7) point out: "In its simplest conception, it [the integrated curriculum] is about making connections". While all integrated curricula share this feature, a truly integrated curriculum has more qualities than that, as James Beane (1997), who has been writing about curriculum integration for over three decades, warns:

The term *curriculum integration* has too often been used to describe arrangements that amount to little more than rearranging existing lesson plans. This is unfortunate because, since its beginnings in the 1920s, curriculum integration is a curriculum design that is concerned with enhancing the possibilities for personal and social integration through the organization of curriculum around significant problems and issues, collaboratively identified by educators and young people, without regard for subject-area boundaries. (p. xi)

Beane (1997) outlines other attributes such as "organizing themes are drawn from life as it is being lived and experiences", "applying knowledge to questions and concerns that have personal and social significance", provides broad access to knowledge for diverse young people and thus opens the way for more success for more of them" (p. xi).

Kozak and Elliott (2009) argue that an integrated curriculum is so important because it

- helps make connections across subjects or disciplines to broaden understanding and make the learning more relevant. All deep understanding is interdisciplinary;
- provides greater opportunity to identify the interrelationships needed to understand systems and their complexity;

- provides many opportunities to differentiate instruction. The inclusion of multiple disciplines provides students with the opportunity to engage their particular interests or abilities;
- provides more authentic opportunities to focus on, learn and apply skills that often cross subject boundaries;
- environmental and sustainable development issues are inherently transdisciplinary. The integration of subject matter makes it easier to understand and learn about complex environmental/development issues and their potential solutions;
- enables more authentic assessment. Use of feedback as an assessment strategy is particularly relevant in integrated project-based learning.

Linking integrated curriculum to holistic education, Clark (2001, pp. 32-35) suggests that integrated curriculum is a design that mirrors systems thinking, which is essential for a sustainability focus. He outlines the educational relevance of systems thinking:

- Systems thinking makes it possible to know more with less information.
- Thinking and learning are systemic processes.
- Human are constructors of knowledge rather discovers of knowledge.
- Curriculum must be organized systemically to reflect the natural process of intelligence / learning, to demonstrate the interrelationship among subjects, and to allow students to construct their own meaning.

#### 4.5.2 Inquiry-Based Learning

The idea of inquiry-based learning has been part of a long history of progressive education. Inquiry-based teaching – which is the facilitating of inquiry-based learning – is the opposite of the more traditional direct teaching approach and is closely connected to the idea of an integrated curriculum. As a document by the Manitoba government describes (Manitoba Education and Youth, 2003b, p. 6.3):

Building classrooms around inquiry engages students, integrates process and content from all disciplines, and fosters self-directed learning.

The basic inquiry process is similar for students of all ages. Students

- pose questions and explore ways to answer them
- locate and manage information from various sources
- process and synthesize their findings
- share their findings on an ongoing basis, supporting each other in their research
- reflect on and celebrate their inquiry findings with a community audience

Complementing this description, a document by the Alberta government states:

Inquiry-based learning is a process where students are involved in their learning, formulate questions, investigate widely and then build new understandings, meanings, and knowledge. That knowledge is new to the students and may be used to answer a question, to develop a solution or to support a position or point of view. The knowledge is usually presented to others and may result in some sort of action. (Alberta Learning, 2004, p. 1)

Variations of inquiry-based learning are problem-based learning, project-based learning, resource-based learning, or research. In each case the key features of inquiry-based learning are:

- Learning is driven by the learner's questions – assisted by the teacher, the students determine what is being asked, how deeply to investigate
  - Inquiry based learning requires the student to pull information in to address the unknown – unlike traditional approaches that push information toward students
  - The learning skills are as important as the content, sometimes more
  - Inquiry based learning is student-centered, with the teacher as facilitator
- (Kozak & Elliott, 2009, p. 29)

Inquiry-based learning is also linked to student engagement (see section II-4.5.3) and improved student learning:

An “inquiry” approach to learning provides students with opportunities to apply a wide range of reading, writing, talking, listening, and thinking skills. Many educators have found that student learning improves when schools adopt a consistent model of inquiry and research across all grades and subjects. (Ontario Ministry of Education, 2004, p. 36)

Inquiry-based teaching and learning fits education for sustainability because it provides a process for teachers and students to explore issues, ask questions, research background information, and plan for action, which are all qualities needed in education for sustainability (on the relationship between inquiry-based learning and education for sustainability, see also section II-4.5.3).

### **4.5.3 Student Engagement and Teaching for Sustainability**

Sullo (2007) expresses the need for the consideration of student engagement as a necessary addition to educators' thinking about curriculum and instruction: “Higher standards, a well-designed curriculum, and exemplary instruction are of limited value unless students are engaged and motivated to learn what is being taught” (p. 154). In Manitoba the issue of student engagement has gained prominence in the last few years as the publication of documents like the *Middle Years Assessment Grade 7 Student Engagement* (Manitoba Education, Citizenship and Youth, 2007) and *Engaging Middle Years Students in Learning* (Manitoba Education, 2010), both published by the Manitoba Government, demonstrate. These publications have encouraged educators to re-evaluate student engagement and revisit what and how they teach, especially in Middle Years grades.

There are a number of conceptualizations of what “student engagement” means. The document *Middle Years Assessment Grade 7 Student Engagement* (Manitoba Education, Citizenship and Youth, 2007) outlines a working definition that emphasized a multifaceted concept that included three dimensions (p. 14):

- behavioral dimension: students' actions related to engagement
- affective dimension: students' feelings about school
- cognitive dimension: students' understanding of their own learning

The Canadian Education Association (CEA) considers the following three dimensions of student engagement:

- social engagement (“a sense of belonging and participation in school life”)
- academic engagement (“participation in the formal requirements of schooling”)
- intellectual engagement (“a serious emotional and cognitive investment in learning, using higher-order thinking”)

(as quoted in Manitoba Education, 2010, p. 8).

While the dimensions of student engagement outline the aspects of human functioning that are involved when students are engaged in an activity, Schlechty links students’ emotional commitment to an activity with the motivation out of which students are emotionally committed: to the activity: “students are engaged in learning when they show commitment to a task because they see inherent value in completing the task, despite the challenges (as quoted in Dooner, Mandzuk, Obendoerfer, Babiuk, Cerqueira-Vassallo, Force, et al, 2010, p. 35). Schlechty suggests here that engagement is directly linked to intrinsic motivation, which, in turn, is linked to what students are interested in engaging with.

This link to students’ interests is of great importance to educators’ concerned for students engagement, because “only students can say what they feel about school or understand about their learning” (Manitoba Education, Citizenship and Youth, 2007, p. 14). If student engagement has an affective dimension and students’ emotional investment in learning represents another dimension of student engagement, as Manitoba Education, Citizenship and Youth (MECY, 2007) and CEA suggest, then the consideration of students’ interests is central to student engagement. Following are a number of views on what can support student engagement.

Drawing on students’ interests in issues, topics, activities, etc. is one approach to student engagement. What kind of activities do students find engaging? Strong, Silver, and Robinson (1995) conducted 10 years of research centered around two questions that they posed to students “What kind of work do you find totally engaging?” and “What kind of work do you hate to do?” Their answers indicated that engaging work “...was work that stimulated their curiosity, permitted them to express their creativity, and fostered positive relationships with others. It was also work at which they were good” (p. 8).

Another approach to student engagement is to consider “learning relationships” to other learners as well as the teacher. Donner et al. (2010) write:

The success of any Middle Years school should be measured by its potential to foster more caring *learning relationships* between teachers and their students. After our group’s yearlong examination of the factors that affect student engagement, we encourage teachers to examine how the balance of both social and pedagogical authority is working for them. (p. 35)

The authors invite teachers to consider balancing teaching from the stance of their understanding of how adolescents learn (pedagogical authority) with the relationship needs of the students in the classroom (social authority).

Sullo (2007) explores student engagement with a focus on choice theory and internal control motivation, according to which students “...have four basic psychological needs that must be satisfied to be emotionally healthy: belonging or connected, power or competence, freedom, and fun” (p. 8). He suggests that “we are motivated from the inside out” (p. 157). Sullo invites teachers to see their role as supporting learning, providing a need-satisfying environment,

assisting in building and maintaining positive relationships, keeping schools and classrooms as small as possible, and encouraging interdisciplinary experiences (p. 147).

The focus of the November 2008 issue of *Educational Leadership*, entitled *Giving Students Ownership of Learning*, is on engaging students. Some suggestions that were presented in the different articles on encouraging student engagement were the following:

- “Students become more engaged and more task focused when they are allowed to make responsible decisions” (Guskey and Anderman, 2008, p. 14).
- “To become effective leaders, youth need to participate deeply, not simply ‘be heard’” (Mitra, 2008, p. 23)
- “We must transfer responsibility for learning to our students gradually – and offer support at every step”(Fisher and Frey, 2008, p. 32)
- “If you want to engage middle school students’ minds, we need to build choice into their day” (Vokoun and Bigelow, 2008, p. 70)
- “When student work culminates in a genuine product for an authentic audience, it makes a world of difference” (Levy, 2008, p. 75)

Summarizing the approaches to student engagement we just outlined, Manitoba Education (2010) provides the following strategies:

1. Develop a Deeper Understanding of Young Adolescents (p. 11),
2. Provide More Responsive Teaching and Learning Experiences (p. 18),
3. Nurture Stronger Learning Relationships (p. 22),
4. Increase Student Voice and Choice (p. 25),
5. Strengthen Community Involvement (p. 27).

We like to add the following three addition strategies that are based on the discussion in sections II-4.4 and II-4.5:

6. Provide learning opportunities that are significant and relevant to students
7. Allow for inquiry based in-depth interdisciplinary studies
8. Support and practice student responsibility of learning and action

On the basis of these eight approaches to student engagement, we now argue that education / teaching for sustainability as outlined in sections II-4.4 and II-4.5 can become the umbrella perspective that can assist teachers and schools to link the curriculum to student engagement by helping students find relevance in what they are learning and engage them in authentic, meaningful inquiry.

Anecdotal evidence suggests that the urgency and the relevance of current global environmental and social issues have already engaged the interest, curiosity, and passion of many students and their teachers.<sup>26</sup> This engagement illustrates the possibilities of how education for sustainability can provide the significance and emotional and intellectual investment needed for student engagement. Often, the engagement is extra-curricular. However, educators can create opportunities within their regular classroom teaching to link student interest and engagement to

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<sup>26</sup> See, for instance, the many projects funded through the ESD Categorical Grant of the Manitoba Government (<http://www.edu.gov.mb.ca/k12/esd/grant/index.html>).

the mandated curricular learning outcomes. Kozak and Elliott (2009) provide seven learning strategies for developing a focus on sustainability and providing a context to interconnect the content, skills, and attitude outlined in curricula (“connect the dots”). Those strategies (p. 7):

- link economic, social and environmental issues within subjects, between subjects and across all subjects;
- link students to each other, their home life, their school and their community;
- link instruction in numeracy, literacy and methods of assessment to provide meaningful contexts in which to develop.

Table II-1 links the strategies of student engagement discussed above with the seven strategies for education for sustainability developed in Kozak and Elliott (2009):

Table II-1

<i>Strategies for engaging students (expansion of Manitoba Education, 2010)</i>	<i>Strategies for education for sustainability (Kozak &amp; Elliott, 2009)</i>
1. Develop a deeper understanding of young adolescents	1 Integrated or interdisciplinary learning
2. Provide more responsive teaching and learning experiences	2. Inquiry-based learning
3. Nurture stronger learning relationships	3. Connecting learning to the real world
4. Increase student voice and choice 7. Sharing Responsibility for Learning with Students	4. Considering alternative perspectives
5. Strengthen community involvement	5. Using local experiences – community as classroom
6. Provide learning opportunities that are significant and relevant to students	6. Acting on learning
7. Allow for inquiry based in-depth interdisciplinary studies	7. Sharing responsibility for learning with students
8. Support and practice student responsibility of learning and action	

Table II-1 shows connections that illustrate how teaching for sustainability can address student engagement and how educators can start “connecting the dots” between teaching for sustainability and the teaching of mandated curriculum and address student engagement. Following we address some connections for each of the eight strategies for engaging students.

Developing a deeper understanding of young adolescents (strategy #1) is part of what Donner et al. (2010) describe as using social authority, namely understanding that adolescents have specific learning needs which must be addressed in order to harness their enthusiasm and passion. All of the strategies for education for sustainability (right column in table II-1) seem to address adolescent students learning needs and to provide ways to bring relevance to their learning.

Strategy #2 –providing a more responsive teaching and learning experience – Dooner et al. (2010) describe as pedagogical authority. It encourages teachers to seek out and implement

responsive teaching strategies that provide the space for students to engage with a subject matter. Education for sustainability strategies #1 and #2 – integrated and inquiry-based learning – are ideal for providing the openness to consider student interests and yet are structured enough through the use of integrated and inquiry-based strategies. These strategies also provide an opportunity for students to express their ideas in rich and significant demonstrations of learning.

As Strong et al. (1995) and Sullo (2007) suggest, nurturing strong learning relationships (strategy #3) is essential for student engagement. Strategies #3, 4, and 5 for education for sustainability all assist the teacher in creating relationships not only with their students but also between students.

Many of the authors that explore the issue of student engagement – Egan (2008), Levy (2008), Mitra (2008), and Vokoun and Bigelow (2008) – argue for increasing student voice and choice (strategy #4) in order to involve students in decisions about their own learning. All seven strategies for education for sustainability are helpful in providing students with voice and choice. They move the learning away from just individual subjects, individual students, and the individual classroom to connect students to the “outside world”, through which they are encouraged to interact with others.

Strengthening community involvement (strategy #5) is all about creating meaningful relationships, expressing one's voice, and listening to others. Education for sustainability strategies #3, 4 and 5 all commit to getting students out of the classroom. One of the main foci of education for sustainability is that we need to provide sustainable living possibilities to all members of the community (see section II-3.1) and these education for sustainability strategies provide students with a voice in the decisions necessary to transform their community and will, thus, strengthen the community involvement in students' learning.

Providing significant and relevant learning (strategy #6) is what adolescents are looking for. They need to see the link between what they are learning and their immediate daily life. Education for sustainability strategy #3 – connecting learning to the real world – provides a link to significant and relevant learning. As Sullo (2007) and Levy (2008) found, if students feel that they are learning for some future time, about some abstract concept, they do not get engaged. By connecting them to the world outside the classroom, on topics that are significant and important to their community, they become key members of their community and find relevance in their actions.

Inquiry-based, in-depth interdisciplinary studies (strategy #7) are directly addressed by education for sustainability strategies #1 and 2. Those strategies provide students with opportunities to practice the skills linked to inquiry, reflection, discussion and decision-making.

Finally, strategy #8 –support and practice of students taking responsibly for their learning and actions – addresses an overall goal of education: helping students to become life-long self-directed learners. As Egan (2008), Fisher and Frey (2008), and Guskey and Anderman (2008) suggest, we have not been allowing students to take responsibility for their learning and action. Education for sustainability strategies #6 and 7 address this problem directly; they link education for sustainability with helping students become life-long self-directed learners. Educational efforts to prepare for sustainable living can only be successful if students become self-directed learners to live and develop as responsible citizens.

What all the education for sustainability strategies (right column in Table II-1) have in common is that they provide a foundation for teaching to allow students to use their creativity and concerns of their lives to engage in authentic learning and action that is essential for a sustainable future for all of us. Education for sustainability can be the catalyst for meaningful student engagement.

## 5 The Manitoba Context

### 5.1 Sustainability Resource Inventory

#### 5.1.1 The Inventory

In 2009 a scan was completed of professional learning opportunities focused on education for sustainability within the province of Manitoba.<sup>27</sup> This scan was designed to look at professional learning opportunities available for educators, including pre-service teachers, teachers, master teachers and school administration.

The categories developed to look at professional learning for sustainability were derived from the Manitoba Education's articulated key themes of sustainable development. These themes (found at <http://www.edu.gov.mb.ca/k12/esd/index.html>) suggest that sustainable development involves the interplay of the themes of poverty alleviation, human rights, health and environmental protection and climate change, to name a few. Sustainability can be seen as an evolving concept that involves the key themes of social, cultural, economic and environmental interrelationships.

For the scan the four strands of education for sustainability outlined in the overall research project (see part I) were used as the categories for the scan:

1. socio-economic strand,
2. socio-cultural strand,
3. health and well being strand,
4. environmental strand.

As the scan was completed, it became evident that some strands could be further broken into sub strands. For example, the socio-cultural strand could be further broken into a strand examining the professional learning opportunities surrounding the experience of new immigrant Canadians and professional learning opportunities surrounding the experience of Aboriginal peoples within Manitoba. Because of the scope of professional learning available surrounding the issue of Aboriginal peoples this strand was added so that a fuller picture of this area could be developed and understood.

In order to complete this scan a variety of consultants within Manitoba Education were contacted. The consultants who completed the chart had special responsibility for the areas in which they provided information. For example the health and well being strand was completed by the consultant responsible for student physical health. The environmental strand was completed by the sustainable development consultant.

Additional information was added through a completion of a scan of public documents. For example course listings at the Universities, professional learning opportunities outlined by Manitoba Teacher's Society or initiatives listed on educational websites were included.

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<sup>27</sup> For some additional information on initiatives by Manitoba Education in the area of teacher professional development, see section II-5.3.1.

Each strand was further broken into a variety of categories. These categories included pre-service teacher education (courses offered in pre-service teacher education programs), traditional professional learning opportunities for educators, available curriculum and resources, emerging government policy, provincial funding for each strand, research being completed throughout the province and data sources to support professional learning within each strand.

Finally, an additional category of current initiatives was added to the inventory. This category does not directly relate to the inventory on professional learning, but rather gives a sense of “priorities of action” or strands where implementation is in progress. This has been added to give a sense of how we are acting upon each strand within the province in terms of priority, implementation and action.

The inventory has embedded limitations. The changing nature of initiatives, programs and professional learning opportunities throughout the Province suggests that the scan provides a “snapshot” in time rather than a comprehensive listing of professional learning initiatives. The inventory outlines the projects available at the time of consultation rather than a picture of the current reality. Projects may have begun while other projects have ended. New funding sources may be available, while others have dried up. The consistent evolution of what is happening at universities, in schools and at Manitoba Education allows us to capture only a glimpse of how we are oriented to professional learning for sustainability. (Further information is included in sections II-5.2 and II-5.4.)

Secondly, this inventory is limited to public documents and public initiatives. The work of a specific school division, school or organization is absent from this inventory. It seems probable that schools and school divisions may be working on special projects with their educators (bookclubs, critical friends models, professional learning communities) that are not reflected in this scan. (Some of these examples will be referenced in sections II-5.2 and II-5.3.)

The work of schools and school divisions that is more highly integrated is also absent from this scan. For example, courses at the university level may incorporate a variety of sustainability themes and voices. A course on the pedagogy of teaching literacy may incorporate comprehensive discussions surrounding the needs of students within low socioeconomic contexts. A professional learning seminar at the Manitoba Teacher’s Society on Educational Administration may include a discussion of how to incorporate Aboriginal Perspectives into the school milieu. Divisional priorities that integrate sustainable development learning over stand-alone professional learning approaches are more difficult to highlight and identify. Accordingly more synthesized and sophisticated approaches to supporting educators sustainability orientations may be absent from this scan. (Though, for some of this information see sections II-5.2 and II-5.3.)

Finally, the ability to complete a comprehensive scan of professional learning opportunities throughout the province of Manitoba was beyond the scope of this project. Information from a variety of Manitoba jurisdictions (rural, northern, urban), the Manitoba universities and school divisions, as well as numerous educational organizations (MASBO, MTS, etc.) are not included in this scan.

Despite these limitations, the value of the inventory becomes evident as one examines the documented projects within each strand. It becomes evident that generalized trends can be discerned through examining the inventory. It becomes evident that gaps can be discovered in the professional learning for sustainability within Manitoba through examination of the inventory. It seems probable that the broad picture displayed in this scan, parallels what is happening in specific Divisions and schools. The inventory provided, while inexact and evolving, gives a sense on our overall orientation to professional learning throughout the Province of Manitoba.

Table II-2 (below) documents the findings of the scan. The subsequent section II-5.1.2 will discuss the findings of the scan.

**Table II-2: Scan of Professional Learning Opportunities Focused on Sustainability within the Province of Manitoba**

Sustainability Inventory				
socio-economic strand	socio-cultural strand	socio-cultural strand (Aboriginal focus)	health and well being strand	environmental strand
<p><b>focuses</b></p> <p>crime, poverty, dis-engaged youth, graduation rates</p>	<p><b>focuses</b></p> <p>mobility, inter-cultural tensions, changing family structure, cultural change</p>	<p><b>focuses</b></p> <p>self governance, cultural awareness,</p>	<p><b>focuses</b></p> <p>eating habits, living a balanced lifestyle, changes in healthcare system  <i>Aim of PE/HE- Manitoba Education: Physical Active and Healthy Lifestyles</i></p>	<p><b>focuses</b></p> <p>consumption, sustainability, recycling, ecosystem balance, pollution</p>
<p><b>pre-service teacher education</b></p> <p><u>University of Winnipeg</u></p> <ul style="list-style-type: none"> <li>• Topics and Issues in Inner City Education (EDUC-4402/3)</li> <li>• Inner City Teaching Practices (EDUC-4405/3)</li> <li>• Issues with At-Risk Youth (EDUC-4408/3)</li> <li>• Mentoring At-Risk Youth (EDUC-4409/3)</li> <li>• Reclaiming Troubled Children and Youth (EDUC5405/3)</li> </ul>	<p><b>pre-service teacher education</b></p> <p><u>Brandon University</u></p> <ul style="list-style-type: none"> <li>• Curriculum as Cultural Transmission(3.364)</li> </ul> <p><u>University of Manitoba</u></p> <ul style="list-style-type: none"> <li>• Cross Cultural Education (EDUA 1540/3)</li> <li>• Problems in Cross-Cultural Education (Graduate Level, EDUA 5240/3)</li> <li>• Perspectives on the</li> </ul>	<p><b>pre-service teacher education</b></p> <p><u>Brandon University</u></p> <ul style="list-style-type: none"> <li>• Teaching of Aboriginal Studies (2.381)</li> <li>• Aboriginal Education Seminar (2.380)</li> <li>• Education of the Aboriginal/Metis Child (2.982)</li> <li>• The Strategies for Teaching Aboriginal/Metis Children (2.383)</li> </ul> <ul style="list-style-type: none"> <li>• BUNTEP Education</li> </ul>	<p><b>pre-service teacher education</b></p> <p><u>Brandon University</u></p> <ul style="list-style-type: none"> <li>• Physical Education Studies Courses</li> </ul> <p><u>University of Manitoba</u></p> <ul style="list-style-type: none"> <li>• Kinesiology courses offered</li> </ul> <p><u>University of Winnipeg</u></p> <ul style="list-style-type: none"> <li>• Kinesiology courses offered</li> </ul>	<p><b>pre-service teacher education</b></p> <p><u>Brandon University</u></p> <ul style="list-style-type: none"> <li>• Environmental Science Methods (3.455)</li> <li>• MECY provides workshops to pre-service teachers on a yearly basis.</li> </ul> <p><u>St. Boniface College</u></p> <ul style="list-style-type: none"> <li>• At the College, ESD is include in the “Diversity Component” of the undergraduate course EDUB 1620 Principles</li> </ul>

<ul style="list-style-type: none"> <li>Teaching At-Risk Students in the Inner-City School (EDUC-5408/3)</li> <li>Steps to Achieving Real-life Skills (EDUC-5406/3)</li> <li>Youth Violence in Schools (EDUC-5411/3)</li> <li>Gifted Education in the Inner-City (EDUC-5412/3)</li> </ul>	<p>Education of Minorities in Canada (Graduate Level, EDUA 5250/3)</p> <p><u>University of Winnipeg</u></p> <ul style="list-style-type: none"> <li>Education for Multicultural Settings (EDUC-4403/3)</li> </ul>	<p>Program</p> <p><u>University of Manitoba</u></p> <ul style="list-style-type: none"> <li>Aboriginal Education (EDUA 1500/3)</li> </ul> <p><u>University of Winnipeg</u></p> <ul style="list-style-type: none"> <li>Introduction to Aboriginal Education (EDUC-4410/3)</li> <li>CATP Education Program</li> </ul>		<p>and Procedures of Teaching French as a Second Language, as well as EDUB 1280 Teaching Core French in the Senior Years I &amp; II. These courses are offered at the University of Manitoba but by a professor from CUSB.</p> <p><u>University College of the North</u></p> <ul style="list-style-type: none"> <li>MECY has been working with Buddy Loyie at UCN to support a resource choice for a course he is developing on ESD.</li> </ul>
<p><b>professional development</b></p> <p><u>administrative</u></p> <ul style="list-style-type: none"> <li><i>low SES forum</i> was hosted in Spring 2009 (MSIP, MERN)</li> <li>inner city administrator and teacher professional learning surrounding teaching within MB inner city (WSD, MECY, Winnipeg Foundation)</li> </ul> <p><u>classroom teachers</u></p> <ul style="list-style-type: none"> <li><i>Summer Institutes</i> two summer institutes</li> </ul>	<p><b>professional development</b></p>	<p><b>professional development</b></p> <p><u>administrative</u></p> <ul style="list-style-type: none"> <li>Manitoba Education (as requested, as scheduled and Summer Professional Learning Opportunities</li> </ul> <p><u>Classroom teachers</u></p> <ul style="list-style-type: none"> <li>MPETA (Manitoba Physical Education Teachers Association</li> </ul>	<p><b>professional development</b></p> <p><u>administrative</u></p> <ul style="list-style-type: none"> <li>An Education for Sustainable Development (ESD) Faculty Seminar is planned for November 26-27, 2009. The focus of the event will be on collaboration and dialogue related to teacher education.</li> <li>MECY offers an ESD Summer Institute for practicing and pre-service teachers.</li> </ul>	<p><b>professional development</b></p> <p><u>administrative</u></p> <ul style="list-style-type: none"> <li>An Education for Sustainable Development (ESD) Faculty Seminar is planned for November 26-27, 2009. The focus of the event will be on collaboration and dialogue related to teacher education.</li> <li>MECY offers an ESD Summer Institute for practicing and pre-service teachers.</li> </ul>

surrounding issues of low SES communities, focusing on Risk and Resiliency and Violence in Schools (MECY, University of Winnipeg)

- MECY offers ESD workshops for Senior Administration, Principals, Teachers, and divisional support staff related to education for sustainable development. These workshops are tailored to the needs of the audience, e.g. divisional planning or in class supports etc
- In 2007, 2008, 2009, Manitoba supported school division teams (subsidized teams) to participate in the Sustainability and Education Academy (SEdA); [www.SustainableEnterpriseAcademy.org](http://www.SustainableEnterpriseAcademy.org), [SEdA@schulich.yorku.ca](mailto:SEdA@schulich.yorku.ca) 20 of the 36 Manitoba School Divisions have participated in this ESD seminar.
- ESD presentations have been conducted for the following Manitoba Education Associations: Manitoba Association of School Business Officials, Manitoba Association of School Superintendents, Manitoba Association of School Trustees

				<p><u>classroom teachers</u></p> <ul style="list-style-type: none"> <li>Manitoba Education provides ESD support through schools</li> </ul>
<p><b>curriculum</b></p> <p><u>infused into curriculum</u> (math)</p> <ul style="list-style-type: none"> <li>compound interest, credit cards, loans, payday loans, risky financial behavior (Grade 11, Essential Mathematics, Half Course 3)</li> <li>explore possible lifestyles associated with different employment opportunities (Grade 12, Essential Mathematics, Career Life Project)</li> </ul> <p><u>transition credits</u></p> <ul style="list-style-type: none"> <li>a grade 9 English credit is being developed to address the literacy needs of students with less than high school level skills (MECY)</li> <li>a grade 9 math credit has been developed to address the math literacy needs of students with less than high school level skills (MECY)</li> </ul>	<p><b>curriculum</b></p> <p><u>curriculum documents</u></p> <ul style="list-style-type: none"> <li><i>Grade 12 Current Topics in First Nations, Métis and Inuit Studies: A Foundation for Implementation (MECY)</i></li> <li><i>K-12 Aboriginal Languages and Cultures: Manitoba Curriculum Framework of Outcomes (MECY)</i></li> </ul> <p><u>infused into curriculum</u> (math)</p> <ul style="list-style-type: none"> <li>strategies for the inclusion of First Nations, Métis and Inuit perspectives in mathematics programming (K-12 framework documents)</li> </ul>	<p><b>curriculum</b></p> <p><u>curriculum documents</u></p> <ul style="list-style-type: none"> <li>Manitoba Education: K- S4 Physical Education/Health Education, Manitoba Curriculum Framework of Outcomes (2000) <a href="http://www.edu.gov.mb.ca/k12/cur/physhlth/framework/index.html">http://www.edu.gov.mb.ca/k12/cur/physhlth/framework/index.html</a></li> <li>K- 4 PE/HE Foundation for Implementation <a href="http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/index.html">http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/index.html</a></li> <li>5- 8 PE/HE Foundation for Implementation <a href="http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/5-8/index.html">http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/5-8/index.html</a></li> <li>Grades 9 and 10 (Senior 1 and Senior 2) Physical Education/Health Education A Foundation for Implementation</li> </ul>	<p><b>curriculum</b></p> <p><u>infused into curriculum</u> (all)</p> <ul style="list-style-type: none"> <li>ESD is integrated across subject areas</li> <li>ESD website curriculum correlation chart</li> <li>SD learning outcomes in subjects</li> <li>ESD resources for curricular outcomes established</li> <li>Eco-Globe Schools recognition program developed</li> <li>ESD grants to support initiatives in schools</li> <li>IMYM grade 7 curriculum integrates ESD</li> <li>Grade 8 Water cluster focused on Lake Winnipeg and Grade 12 Lake Winnipeg course still in progress.</li> </ul>	

<p><b>resources</b></p> <p><u>library resources</u></p> <p>limited</p>	<p><b>resources</b></p> <p><u>websites</u></p> <ul style="list-style-type: none"> <li>the <i>Belonging, Learning and Growing Website</i> addresses issues of diversity and equity and provides resources, links and current research (MECY)</li> </ul>	<p><b>resources</b></p>	<p><b>Resources</b></p> <p><u>websites</u></p> <p>Manitoba Education, PE/HE Website:  <a href="http://www.edu.gov.mb.ca/k12/cur/physlth/index.html">http://www.edu.gov.mb.ca/k12/cur/physlth/index.html</a></p> <p>MPETA website:  <a href="http://www.mpeta.ca/home.html">http://www.mpeta.ca/home.html</a></p> <p>Healthy Schools (MHL):  <a href="http://www.gov.mb.ca/healthy/schools/">http://www.gov.mb.ca/healthy/schools/</a></p> <p>Healthy Living Guide:  <a href="http://www.gov.mb.ca/asset_library/en/healthylivingguide/healthy_living_guide.pdf">http://www.gov.mb.ca/asset_library/en/healthylivingguide/healthy_living_guide.pdf</a></p>	<p><b>Resources</b></p> <p><u>website</u></p> <p>Manitoba has developed ESD tools and materials. Support documents include: parent pamphlet for ESD; ESD posters; ESP annotated bibliography; ESD Newsletters for teachers; etc. All resources are available on the Manitoba ESD website <a href="http://www.edu.gov.mb.ca/k12/esd">www.edu.gov.mb.ca/k12/esd</a> and include:</p> <ul style="list-style-type: none"> <li>A support document; <i>Education for a Sustainable Future: A Resource for Curriculum Developers, Teachers, and Administrators</i> was developed in 2000. ESD posters for K-4 and Grades 5-12 as well as teacher guides; <a href="http://www.edu.gov.mb.ca/k12/esd/poster.html">http://www.edu.gov.mb.ca/k12/esd/poster.html</a></li> <li>ESD parent pamphlets ; <a href="http://www.edu.gov.mb.ca/k12/esd/brochures.html">http://www.edu.gov.mb.ca/k12/esd/brochures.html</a></li> <li>Newsletters; <a href="http://www.edu.gov.mb.ca/k12/esd/newsletters.htm">http://www.edu.gov.mb.ca/k12/esd/newsletters.htm</a></li> <li>Correlation Charts; <a href="http://www.edu.gov.mb.ca/k12/esd/correlations/ind">http://www.edu.gov.mb.ca/k12/esd/correlations/ind</a></li> </ul>
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<p><b>government policy</b> <u>policy frameworks</u></p> <ul style="list-style-type: none"> <li>• a framework outlining best practices and guiding principles in low SES schools has been to guide work within low SES communities (MECY)</li> </ul>	<p><b>government policy</b> <u>policy frameworks</u></p> <ul style="list-style-type: none"> <li>• <i>Diversity Policy</i> a renewed policy statement recognizing diversity in society and education is being developed, acknowledging the importance of addressing racism and inequity (MECY)</li> <li>• <i>Multilingual Policy Statement</i> endorses and promotes the value of learning additional languages</li> </ul>	<p><b>government policy</b> <u>policy frameworks</u></p> <ul style="list-style-type: none"> <li>• an <i>Aboriginal EAL Strategy</i> was renewed</li> </ul>	<p><b>government policy</b> Mandatory K- 12 PE/HE (2008)</p>	<p>ex.html</p> <ul style="list-style-type: none"> <li>• Grants; <a href="http://www.edu.gov.mb.ca/k12/esd/grant/index.html">http://www.edu.gov.mb.ca/k12/esd/grant/index.html</a></li> <li>• Resources; <a href="http://www.edu.gov.mb.ca/k12/esd/resources.html">http://www.edu.gov.mb.ca/k12/esd/resources.html</a></li> <li>• Eco-Globe recognition program; <a href="http://www.edu.gov.mb.ca/k12/esd/eco_globe/index.html">http://www.edu.gov.mb.ca/k12/esd/eco_globe/index.html</a></li> </ul>
<p><b>government policy</b> <u>policy frameworks</u></p> <ul style="list-style-type: none"> <li>• The Sustainable Development Strategy for Manitoba refers to the importance of education defined very broadly to include the elementary and secondary system, postsecondary education, and public and private sector employees.</li> <li>• Manitoba Education also identifies ESD as a priority in its departments policy and planning strategy and has identified ESD is one of its top priorities for the department.</li> </ul>				

	<p><b>funding</b> <u>government</u></p> <ul style="list-style-type: none"> <li>funding for high incidence special needs and students at risk was restructured to better consider the socio-economic status of school communities as a factor in determining the allocation of available funding to support of Student Services (MECY)</li> <li><i>SEED Winnipeg RESP Administration</i> is establishing processes to administer RESP for inner-city children (SEED, Bright Futures, CSI)</li> </ul>			<p><b>funding</b> <u>government</u></p> <ul style="list-style-type: none"> <li><i>Aboriginal Academic Achievement Grant</i> supports new or existing programming implemented by Manitoba Divisions targeted at improving academic achievement</li> </ul>			<p><b>Funding</b> <u>government</u></p> <p>Some funding through Manitoba Government</p>		<ul style="list-style-type: none"> <li>All government and educational construction must meet LEED silver standards</li> </ul>
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<p><b>professional development research</b></p>	<p><b>professional development research</b></p>	<p><b>professional development research</b></p>	<p><b>professional development research</b></p>	<p><b>professional development research</b></p> <p><b>Survey Research</b> Continuation of survey research into the sustainable development knowledge, attitudes and behaviors of Manitobans. This project is a continuation of 08/09 research, in which IISD piloted a survey of Manitoba households and students (IISD report "Measuring Knowledge, Attitudes and Behaviors towards Sustainable Development: Two Exploratory Studies", published in March 2009). In 09/10, IISD will be working with MECY and refining the instrument and focusing on a statistically relevant sample of Grade 10 students across the province. (MECY and International Institute for Sustainable Development)</p>
<p><b>research</b></p>	<p><b>research</b></p>	<p><b>research</b></p>	<p><b>research</b></p> <ul style="list-style-type: none"> <li>• MIPASS Project- CIHR funding)</li> <li>• Youth Health Survey- self reported survey of nearly</li> </ul>	<p><b>research</b></p> <p><u>government</u></p> <p>MECY is currently working with the International Institute for Sustainable Development</p>

			<p>50,000 students, provincially. Provincial report expected to be released in Jan 2010.</p> <p>Project Leads are Partners in Planning for Healthy Living with Provincial RHA's and Cancer Care Manitoba. Partners include MHL and Manitoba Education.</p>	<p>on the following:</p> <ul style="list-style-type: none"> <li>• <b>Policy Handbook:</b> Creation of a handbook on ESD policy development for Manitoba school divisions to support the policy development capacity of Manitoba school divisions.</li> <li>• With First Nations Educational Resource Centre, a <b>review of the status of ESD in First Nations schools</b> in Manitoba</li> </ul> <p><u>The following research has been published</u></p> <ul style="list-style-type: none"> <li>• Sustainability Policies at the School Division Level in Manitoba: The status of policy development and its relationship to actions in schools</li> <li>• Measuring Knowledge, Attitudes and Behaviours toward Sustainable Development: Two Exploratory Studies</li> <li>• Conference Report: Choose the Future: Education for Sustainable Development</li> </ul> <p>The above publications are located at <a href="http://www.iisd.org/leaders/un.asp">http://www.iisd.org/leaders/un.asp</a></p>
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<p><b>data sources</b></p> <p><u>school_readiness</u></p> <ul style="list-style-type: none"> <li>a pilot project in two primary schools in low income neighborhoods targets improving the speech and language skills of nursery and kindergarten children who have been identified as having speech and language skills below the expected norm for their age (partnership: MECY, WSD)</li> <li>quality early childhood learning and childcare will be facilitated from ages 3 to 5 based on year-round center-based interventions (Healthy Child)</li> </ul> <p><u>summer_learning_loss</u></p> <ul style="list-style-type: none"> <li>CSI Investigator summer camps are provided to</li> </ul>	<p><b>data sources</b></p> <p><u>reporting</u></p> <p>improved aboriginal identity field usage</p>	<p><b>data sources</b></p> <p>Data from Youth health Survey is currently being kept in trust with Cancer Care Manitoba, 2009</p>	<p><b>data sources</b></p>
<p><b>initiatives</b></p> <ul style="list-style-type: none"> <li><u>Peaceful Village Project</u> brings together youth with leadership potential to build relationships between inner city youth from different religious and cultural backgrounds by engaging in trust-building exercises, transformative dialogue and other relational activities (MSIP, AEL, WSD)</li> </ul>	<p><b>initiatives</b></p> <ul style="list-style-type: none"> <li><u>career development</u></li> <li><u>Aboriginal Healthcare Internship Program</u> provides experiential, strength-based educational and mentorship programs for students interested in pursuing a career in the healthcare field (Pan Am Clinic Foundation, Children of the Earth, AEL)</li> <li><u>Aboriginal Business Program</u> will contribute to a pilot project meant to encourage high school completion through entrepreneurship (WSD, Children of the Earth High School, MB4Youth)</li> <li><u>Swan Valley School Division Career Development Initiative</u> focuses on bringing relevancy to school</li> </ul>	<p><b>initiatives</b></p> <ul style="list-style-type: none"> <li><u>Winnipeg Aboriginal Sports Achievement Centre (WASAC)</u> received funding to implement programming in northern communities (e.g., Youth Achievement Program, Kids Camp, Aboriginal Games Workshop, and Youth Fest) through engaging and collaborating with communities and mentoring youth from those communities as recreation leaders (MHHL)</li> <li><u>Swim to Survive Program</u> provides funding to support access to personal flotation devices to communities (MHHL)</li> <li>Life Skills Training Pilot Project- Manitoba Education</li> <li>Healthy Buddies Pilot Project-(Manitoba</li> </ul>	<p><b>Initiatives</b></p> <ul style="list-style-type: none"> <li><u>The Eco-Globe Schools</u> annual recognition program has been developed by Manitoba Education, Citizenship and Youth (MECY) to: <ul style="list-style-type: none"> <li>recognize that Manitoba schools are involved in a variety of activities that promote and integrate Education for Sustainable Development (ESD)</li> <li>acknowledge Manitoba schools that demonstrate a commitment to ESD</li> <li>facilitate the sharing of ideas and innovative practices</li> </ul> </li> <li><u>Manitoba Hydro Grants</u> – grants of \$2000 each for fifteen schools for ESD support</li> </ul>

<p>support summer learning and retention (Social Planning Council, MECY)</p> <ul style="list-style-type: none"> <li>summer camps are provided to support summer learning and retention (Frontier College, MECY)</li> <li>summer camps are provided to support summer learning and retention (University College of the North, MECY)</li> </ul>		<p>curricula by demonstrating connections to fitting into the workplace</p> <p><u>post secondary attendance</u></p> <ul style="list-style-type: none"> <li><i>Shine On</i> supports Aboriginal middle years and high school students to access learning and skill development opportunities to help them stay in school and transition successfully to post-secondary learning (MECY, University of Winnipeg)</li> </ul>	<p>Healthy Living)</p>	<ul style="list-style-type: none"> <li><i>The Education for Sustainable Development Categorical Grant</i> is to support schools/school divisions in their efforts to incorporate Education for Sustainable Development into all aspects of school division and school activities, operations, and programming.</li> <li>Manitoba leads the <i>Council for Ministers of Education Canada Working group on ESD</i>. CMEC has included education for sustainable development (ESD) as one of the key activity areas in Learn Canada 2020, its framework to enhance Canada's education systems, learning opportunities, and overall education outcomes at all levels. The specific goal for ESD is to raise students' awareness and encourage them to become actively engaged in working for a sustainable society.</li> </ul>
<p><u>post secondary attendance</u></p> <ul style="list-style-type: none"> <li><i>Career Trek</i> endeavors to expose grade 5 students to more than 80 different careers (Bright Futures, AEL)</li> </ul> <p><u>community engagement</u></p> <ul style="list-style-type: none"> <li><i>Community Schools Initiative</i> supports schools serving low socio-economic neighborhoods, helping them develop a comprehensive range of supports and approaches to the diverse needs of the children, youth and their families (MECY)</li> </ul>		<p><u>community involvement</u></p> <ul style="list-style-type: none"> <li><i>Aboriginal Head Start Program</i></li> <li><i>Making Education Work Program</i></li> </ul> <p><u>after school programming</u></p> <ul style="list-style-type: none"> <li><i>Ignite Camps</i> are designed to create support interest in science, technology and engineering</li> </ul>		
<ul style="list-style-type: none"> <li><i>Community Schools Initiative</i> supports schools serving low socio-economic neighborhoods, helping them develop a comprehensive range of supports and approaches to the diverse needs of the children, youth and their families (MECY)</li> </ul> <p><i>Building Student Success</i></p>				

<p>with <i>Aboriginal Parents</i> (BSSAP) initiative is designed to enhance Aboriginal parents' engagement in the public education system (MECY)</p> <p><u>after school programming</u></p> <ul style="list-style-type: none"> <li>• <i>Bright Futures</i> will support the enhancement of current Boys and Girls Clubs of Winnipeg programming to focus on academic achievement (Bright Futures, AEL, MECY)</li> </ul> <p><u>comprehensive programming</u></p> <ul style="list-style-type: none"> <li>• <i>Bright Futures</i> will support the development of a four year program which provides academic, financial, and social supports to Grade 9-12 students living in two low income communities (Bright Future, MECY, AEL)</li> </ul>				
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### 5.1.2 Discussion

The scan provides information about where the province of Manitoba is in terms of professional learning and learning opportunities for sustainability – giving consideration to the limitations discussed in section II-5.1.1). Following we, first, discuss a number of observations about the situation in Manitoba resulting from the scan, and, second, comment on one broader connection between the findings in the scan and some other developments in professional learning.

#### *Observations*

##### *Limited Definition of Sustainability*

Generally, the concept of “sustainability” is for people linked to the ideas of recycling, reducing our environmental impact, organic food, etc. The wider and more sophisticated integrative themes exploring the impact of poverty, health and wellness and the socio-cultural implications on our environment are often missing. The emphasis of sustainability explorations becomes focused on the narrower themes of how we impact our earth through environmental or non-environmental orientations.

The scan of professional learning opportunities within Manitoba seems to reflect this more limited definition of what it means to live sustainably. An overwhelming emphasis on the environmental strand seems evident. A variety of professional learning opportunities for educators are available, as are multiple sources of funding, the development of policy frameworks, websites and resources are available within this strand.

As one works across the other strands, the professional learning opportunities decrease. The professional learning opportunities within the health and wellness strand are limited to classroom teachers and strategies for implementation of curriculum. The professional learning opportunities within the socio-cultural strand are also limited to classroom teachers and strategies for addressing the needs of students.

Finally, the professional learning opportunities about education and poverty within the socio-economic strand is lacking by comparison. Few professional learning opportunities exist for teachers and administrators surrounding working within low socioeconomic contexts.

##### *“Strategies” versus Personal and Systemic Change*

The environmental strand supports a focus on transforming lifestyles, a movement towards sustainable practices and looking towards sustainable orientations. The emphasis on wider personal and systemic change is evident through an emphasis on administrative level educators. Professional learning opportunities are available throughout the environmental strand for superintendents and principals. The emphasis on looking at personal beliefs and societal belief structures as part of this strand seems evident.

As one moves from the environmental strand to the other three strands the emphasis of professional learning changes from personal and systemic change to “strategies”, like working with a particular group. For example, professional learning within the socio-cultural strand looks at how to incorporate Aboriginal perspectives into schools or how to respect the stories of new immigrant youth. A wider emphasis on personal and systems change is replaced with a focus on strategies within the health and well being, socio-cultural and socio-economic strands.

### *Diverse Emphases on Education for Sustainability in Teacher Education Programs*

The universities within Manitoba are primarily responsible for the education and preparation of pre-service teachers. Universities are self deterministic in terms of programmatic foci. While the scan has limitations, it seems evident that each university has a specific focus in terms of sustainability education. The University of Winnipeg offers a selection of courses surrounding the socio-economic strand. The University of Manitoba offers a selection of courses focused on the socio-cultural strand particularly in respect to EAL learners, while the University of Brandon offers a focus on Aboriginal studies as part of the socio-cultural strand. Each University seems to offer a unique emphasis on each of the strands. (For additional details on education for sustainability in Manitoba's teacher education programs, see section II-5.4.)

### *Relative Lack of Resources in and Focus on the Socio-Economic Strand*

As part of the scan of professional learning opportunities a scan of the university, public and education libraries was completed as well as a scan of resources and literature was completed. Though the findings are too extensive for this document, general trends became evident through this sub review: Libraries within Manitoba have a comprehensive sample of up-to-date books within the socio cultural (both new immigrant and Aboriginal focused) strand, health and well being strand and sustainability strand. The literature available within the socio economic strand was either quite dated or absent.

The scan of government policy, academic research, external organizations and data sources revealed that literature and research in areas of the socio-economic strand are lacking.

### *Issue Arising from the Scan*

#### *Teacher Competencies*

Over the last years there has been an emphasis on the role of the teacher in student achievement and the competencies that a teacher must hold in order to support student achievement. Researchers have identified the core skills a teacher must possess in order to support student achievement such as knowledge of content area, student error analysis, etc. These competencies can serve as a framework for pre-service instruction by suggesting pedagogical areas deserving attention within pre-service education. Similarly, these competencies can serve as a framework within the field of professional learning by suggesting areas deserving attention within school divisional and ministry professional learning opportunities.

Over the last years researchers have worked to identify teacher competencies necessary within the strands in Table II-2 above. Within the socio-cultural strand, a variety of teacher competency models have been developed to address the competencies a teacher needs within intercultural contexts (see, for instance, the work by Geneva Gay on culturally response teaching like Gay, 2000).

Within the environmental strand, core competencies for teachers are in the process of being developed by a variety of academics and organizations. Within the health and wellness strand competencies of the teacher are articulated within curriculum documents and frameworks developed by Manitoba Education. However, competencies to guide professional learning have not been developed for the socio-economic strand.

## 5.2 Education for Sustainability

### 5.2.1 Province

This section presents and discusses the findings from data that speak to education for sustainability from a province-wide perspective. The section is divided into two parts. In the first part, we present a summary of initiatives by the government of Manitoba on education for sustainable development (ESD).<sup>28</sup> In the second part we present and discuss the findings from interview data with representatives from four education associations in Manitoba: the Manitoba School Boards Association ([www.mbschoolboards.ca](http://www.mbschoolboards.ca)), the Manitoba Association of School Superintendents (MASS, [www.mass.mb.ca](http://www.mass.mb.ca)), the Manitoba Teachers' Society (MTS, [www.mbteach.org](http://www.mbteach.org)), and the Council of School Leaders of the Manitoba Teachers' Society (COSL, [www.cosl.mb.ca](http://www.cosl.mb.ca)).<sup>29</sup>

#### *Manitoba Education Initiatives on Education for Sustainable Development (ESD)*

- establishing in Manitoba Education a Sustainable Development Coordinator in 2000 and a Sustainable Development Consultant in the Instruction, Curriculum and Assessment Branch of Manitoba Education in 2007;  
(The ESD Coordinator is responsible for forging partnerships with all sectors/stakeholders and working together to build and enhance a culture of Education for Sustainable Development (ESD) in school divisions and post-secondary institutions across the province as well as collaborating with other organizations regionally, nationally and internationally to advance ESD. Responsibilities also include ensuring that governmental and departmental policy, regulatory and operational frameworks supporting sustainability practices and principles are implemented efficiently and effectively. The ESD Consultant is responsible for providing ESD professional development and curricular support in the infusing of ESD into K-12 schools and school divisions in the province. In addition to the above, they maintain a website of ESD information, resources, grant opportunities, provincial ESD newsletters, contacts and NGO's with materials to support ESD curricular outcomes at <http://www.edu.gov.mb.ca/k12/esd>)
- developing and publishing of "Education for Sustainable Future. A Resource for Curriculum Developers, Teachers, and Administrators" in 2000;  
(The document is foundational for school divisions and teachers in creating and delivering ESD curriculum to Manitoba students. Since its creation ESD learning outcomes have been imbedded in curricula, and many newer resources available on the ESD website support educators to deliver ESD in the classroom, school and community.)
- developing a provincial Education for Sustainability Action Plan (2004–2008) that directed the first steps in fostering teaching and learning for sustainability in elementary and secondary classrooms;

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<sup>28</sup> The information for this part was provided by Anne MacDiarmid and Carolee Buckler. We would like to express our great appreciation for their contribution.

<sup>29</sup> COSL is an association with the Manitoba Teachers' Society and represents school principals and vice-principals of schools in Manitoba.

- creation of the Manitoba Education for Sustainable Development Working Group (MESDWG) in 2005 through a partnership between Learning for a Sustainable Future, Environmental Canada, and the province of Manitoba;  
(MESDWG was created to serve as a pilot towards implementing education for sustainable development working groups in all of the provinces and territories. The goal of the working groups is to provide a focal point for collaborative efforts in ESD among government departments, non-government organizations (NGOs), school divisions, post-secondary institutions and communities. Working groups have been established in 9 provinces and 1 territory. Manitoba was instrumental in piloting the provincial activities.)
- partnering with Environment Canada and Learning for a Sustainable Future to establish the National Education for Sustainable Development Canada Network, which brings together stakeholders from all Working Groups across Canada;  
(The Working Groups collaborate and partner to implement the priorities of the UNECE ESD strategy and to support the UNESCO Decade of ESD.)
- jointly with Manitoba Hydro establishing the Manitoba Grants for Education for Sustainable Development in 2006;  
(The 15 grants of up to \$2,000 awarded annually promote professional learning for sustainability in K-12 classrooms.)
- implementing the Manitoba's Green Building Policy in 2006, which requires that all schools are built to LEED Silver;
- establishing of the ESD Categorical Grant in 2007, which provides grants to school divisions at a formula for \$700 per school annually;  
(These funds are to be used by the individual schools or school divisions for teaching and learning related to ESD. Every 3 years on a rotational basis, each school division is visited by a team of Manitoba Education Consultants who are responsible for all categorical grants. During those visits it is discussed to discuss how these funds were used, and what successes, challenges and recommendations can be reported to Manitoba Education.)
- organizing and facilitating the SEdA (Sustainability and Education Academy) Conferences in Hecla in October of 2008, 2009, and 2010.  
(The Academy is a collaborative response to the UN Decade for ESD involving the Faculty of Education and the Schulich School of Business at York University, the UNESCO Chair on Reorienting Teacher Education to Address Sustainability at York University, and the NGO Learning for a Sustainable Future (LSF). ([www.SustainableEnterpriseAcademy.org](http://www.SustainableEnterpriseAcademy.org)). This conference was adapted for and conducted as a provincial initiative. SEdA's Education Leaders' Seminar motivates and equips senior education officials to lead the integration of sustainability as a core value in all aspects of formal education, including policy, curriculum teaching, learning, professional development, and the sustainable management of human, physical, and financial resources. The seminar is designed for senior level divisional personal including board members, senior administrators, and central office personal. The seminar is also focused on creating networks that can work together in the future. In addition to the SEdA seminar, there is a one day post SEdA follow-up workshop held with the participants in the spring. To date, 27 of the 36 school divisions in Manitoba have participated.)

- taking the lead on the Council of Ministers of Education Canada's (CMEC) ESD Priority Area and coordinating actions that will support and strengthen the implementation of ESD in K-12 in all provinces and territories;
- representing Canada, through Deputy Minister Gerald Farthing, on the Steering Committee of the United Nations Economic Commission for Europe;
- representing Canada, through Léonard Rivard (Collège universitaire de Saint Boniface), on the UNECE Expert Group on Competencies in ESD;  
(The Expert Group has been mandated to prepare general recommendations for policymakers; and a range of core competences in ESD for educators.)
- since 2007 partnering with the International Institute for Sustainable Development (IISD; [www.iisd.org](http://www.iisd.org)) to undertake ESD research, which resulted in the following published documents:
  - *Environment and Sustainable Development Policy Development in K–12 Schools in Manitoba and Canada: An Initial Exploration.*
  - *Sustainability Policies at the School Division Level in Manitoba: The Status of Policy Development and Its Relationship to Actions in the School.*
  - *Measuring Knowledge, Attitudes and Behaviours towards Sustainable Development: Two Exploratory Studies*
  - *The Decade of Education for Sustainable Development (DESD) and Sustainability Education in First Nations Schools in Manitoba.*
  - *Green Jobs and Sustainability Career Guide*(In addition to the publication of these documents, IISD maintains a Sustainable School and Campus Policy Bank, that provides models of institutional sustainable development policies for K–12 and postsecondary education institutions.)
- identifying ESD as a priority in its Strategy Document to further support and encourages ESD innovation and educational change;
- providing of the following to support teaching and learning of sustainability in schools:
  - provincial ESD Newsletter;
  - pamphlets for parents focused on ESD;
  - poster and activity guides for K-12 classrooms;
  - professional learning opportunities for educators;
- embedding of ESD in the K–12 curriculum with specific outcomes established in science, social studies, health, and physical education;:
- analyzing curricula (including those in technical and vocational education) to determine where ESD concepts can be introduced;
- establishing the Eco Globe Schools Recognition Program in 2008 to celebrate the ESD journey of K-12 schools in MB;  
(The Program recognizes 3 levels of commitment and participation of whole schools at the Awareness, Action and Transformation levels.)
- rewriting of the grade 12 World Issues course to be a Global Citizenship and Sustainability course with a strong emphasis on sustainability;

- partnering with the Manitoba First Nations Education Resource Centre (MFNERC; [www.mfnerc.org](http://www.mfnerc.org)) to support and enhance links between elementary and secondary education in reserve schools and the provincial education system in the implementation of ESD;

### *Education Associations in Manitoba*

The following were themes from the interviews with the representatives from the four education associations in Manitoba.

#### *Involvement with Education for Sustainability*

The interviews suggest that the education associations are directly and more so indirectly involved with education for sustainability. Examples provided by the interviewees of their respective associations' direct involvement are:

- One of the objectives linked to student learning within the 2009-2010 Strategic Plan of the Manitoba Association of School Superintendents (MASS) is "that students pursue education for a sustainable future through active engagement in community and global issues" (MASS, n.d., p. 7).
- At one of its recent full-day member sessions, MASS had different school divisions present on what they were doing in the area of sustainability and education for sustainability.
- MASS is one of the co-organizers of a conference in the fall entitled "Social Justice: Education for Action", in which one of the four themes is "Eco-Justice".
- The next MASS Journal issue, to be published in the spring of 2011, will be on education for sustainability.
- The Manitoba School Board Association (MSBA) has a representative on the provincial committee on ESD and has provided workshops to its members on initiatives around ESD.
- The Council of School Leaders (COSL) will hold a conference in February 2011 at which Anne MacDiarmid, Sustainable Development Consultant with Manitoba Education, will give a number of break-out sessions.

The four education associations were, however, also involved more indirectly with education for sustainability in the sense that some of the major foci of their engagement are linked to sustainability in the comprehensive sense discussed in section II-3.1, although the foci were not conceptualized as part of education for sustainability. Following are examples from the interviews:

- MASS is one of the co-organizers of a conference in the fall entitled "Social Justice: Education for Action", where the four themes of the conference are Human Rights, Identity and Diversity, Freedom and Responsibility, Eco-Justice.
- MSBA is involved in initiatives on Aboriginal education and early childhood education (social and human development) and on issues related to poverty
- MSBA hands out a student citizenship award.
- COSL will hold a conference in February 2011 on social responsibility and justice.
- The Manitoba Teachers' Society (MTS) provides workshops and other forms of supports to teachers on wellness and well-being.

- MTS provides workshops to teachers on social justice issues.

### *A Strong Culture of Collaboration*

Three of the four interviewees talked about a culture of collaboration among the different education groups, organizations, and associations in Manitoba, and two interviewees were very explicit about the strength of this culture of collaboration.

I would say we have a fairly coherent culture in Manitoba, and we have come to the point where this language is not odd language, but if you go to another province and you start talking about these things they look at us like we are from the moon, and a lot of times with envy; but they just say we do not have time to talk about poverty or equity or something. We have to devote our stuff to this, to that; and so, we find ourselves speak in a different language. (EA3, 49:40)

Yes, I think it is [that there is collaboration between the different partners in education]. I think we are very fortunate in this sense in Manitoba. The superintendents association and the Department of Education are heading up this big conference on social justice in the fall, but virtually everybody is around that table. Parents are there, trustees are there, Teachers' Society is there, the school business officials are there, various Departments, and other community agencies are there. So, that's, you know, that's sort of a big picture example. But I think on so many other issues we work together, you know. Recently all of the major education stakeholders have been meeting around the issues, around issues of student services, and how do we do this, and how do we do it in a way that better serves all kids in our system. (EA4, 18:50)

When you look at what's offered in the province, it's not just what we do, but it's our influence within what a lot of other groups do as well; and we're being asked to more and more tables for consultation with groups, because there is a recognition that we play a part. We have, I hope, some valuable things to say in terms of the development of training. And in fact we just had a meeting last week . . . where we had the representatives from the major universities, from the Manitoba School Boards Association, Manitoba Association of School Superintendants, where we have begun the dialogue around what are holes and gaps in terms of leadership training for school principals and vice-principals in this province. (EA1, p. 13)

One interviewee exemplified explicitly an implication of this collaborative culture:

The fact that there is very little division [among the different educational groups in Manitoba] means that we have been able to, you know they put out little pockets of money, if you do a project on sustainable development we give you \$5,000, and schools pick those up and do stuff. . . . your own vision goes through. It's accepted. So we have been able to do a lot of stuff. (EA3, 39:00)

Interviewees identified different factors that contributed to the establishment and contribute to sustaining this strong culture of collaboration:

- Leadership and Population

I think, first all, we have really strong leadership on this in this province . . . people with a personal commitment to addressing the issue in a really sense of outrage about the injustice

of all of this. . . . It is also a culture of the province. I think Manitoba is a, you know, with its agrarian kind of roots and rural culture perhaps more collaborative than some, because if I look at BC or Alberta I see very different mindset in general. (EA4, 15:40)

- Taking Up and Creating Opportunities to Work Together

So one of the things that has allowed this culture to develop is that we [the different educational groups] have worked together. We have collaborated on a number of things. They come to our conferences. We have gone to theirs. We develop a common language by spending all this time together. (EA3, 52:55)

We have a partners table where we sit down, superintendents, trustees, school business officials, secretary treasurer with the assistant deputy ministers of education, and we just talk about, you know, what the issues are, what the perspectives are, some of the things that are coming up, share information. So, it's that opportunity to connect, to understand what is on your agenda, what's on my agenda, where do they meet, where can we work together. (EA20:40)

- Context Set by Manitoba Education (including decentralization of decision making)

We have a province that has not made us concentrate on assessment to the exclusion of everything else. So, we are very lucky to live here . . . . It has allowed us to grow a culture here where we really believe in things like this [e.g., social justice]. We have enough strong people in our organization that has swung everybody to the direction. You know, this summer we have a conference on poverty. . . This is on poverty. These are superintendents, and a few principals and trustees, they come, and then we get all the major organizations, their presidents, their executive directors . . . Gerald [Deputy Minister of Education] will be there. (EA3, 35:55)

And there are people that believe that the only really good things in education come from the grassroots, . . . come from the field. (EA3, 39:55)

### *Curriculum: Focusing on What Is Important*

Another central theme in the interviews was the interviewees' view that schools should focus on what really is important, and that particularly the current curriculum does not allow a focus on what really should count.

One interviewee suggested that there is a mismatch between the principles of education for sustainability promoted by Manitoba Education and the curriculum mandated by it. At the core of this mismatch, she / he suggested, is the silo-ing of school education through discrete subject areas. She / he suggested that Manitoba Education's current work on "essential learnings" should be linked directly with the principles of education for sustainability and allowing for an overcoming of this silo-ing and, thus, the mismatch.

Gerald Farthing says it [sustainability] is the most important issue of our times, and I absolutely agree, but watch them [Manitoba Education] do anything about that curriculum. (EA3, 20:40)

The 'essential learnings', one of them ought to be 'sustainable development'; but that's not going to rise up out of the – if you have each discipline deciding what its essential learning

are you are not going to get sustainability. So, let's think about what should be the essential learning without recourse to any specific curriculum, and that's how we should begin our conversation in my view. (EA3, 29:00)

Another interviewee approached the mismatch in terms of the room that needs to be made in the mandated curriculum if education for sustainability should become a sustained focus for teachers:

Part of it [the process of making education for sustainability a sustained focus for teachers] is the beginning of discussions around curricula, and the discussions related to what do we plan to abandon in curricula in favour of spending time in this area, which to me supersedes a number of other areas of curricula that really won't matter a whole lot if we've poisoned our environment to a point where we can't sustain good health because of poor practices related to living within our environment. So, to me we need to begin that journey of having a conversation about what do we plan to abandon in our school curricula in order to make room for this, because unless we're going to add to our day and add to our year, my argument is we can't continue to even think that we're going to do it all and do a reasonable job of doing it all. We're going to do a reasonable job of doing nothing well but saying we've touched on everything but big woopedoo, when there has been no long standing sustained impact as a result of tickling the surface rather than really tilling deeply into the areas that are really of most urgent concern and are probably the most impactful in terms of what's going to happen to us in the short term if we don't do something. So, as a result, we have to have that discussion in education about how do we reorganize education to make use of the time we have with kids with the things that they really, really need to be delving into? (EA1, pp. 2-3)

### 5.2.2 School Divisions

The following were the themes around education for sustainability that emerged from the analysis of the interviews with superintendents, their delegates as well as principals, teachers, consultants and focus group participants.

(1) The main conclusion from interviewing the educators at the divisional level and from discussions within the focus groups (FG2) is that school divisions across Manitoba are at **different places on a continuum of the degree of implementation of ESD** policies, curriculum and programs from just dealing with some environmental issues (such as recycling, "no idling" school bus zones, greening of school buildings and operations) or isolated school and classroom programs at one end to integrating the three pillars of ESD throughout the division. Also indicative of this wide spread across the continuum can be gleaned from the summary of a review of school divisions' websites and Strategic Plans if published (see the Appendix to this Research report).

The majority of ESD projects and programs that were cited tended to be focused on environmental issues. Some of the interviewees did not include socio-economic or socio-cultural initiatives in their understanding of ESD (FG3). On the other hand, those interviewees that are connected to schools within an inner-city context were primarily focused on the socio-economic

strand of sustainability, because the implication of family poverty dominates almost all aspects of the education in those schools.<sup>30</sup>

As one assistant superintendent indicated:

Well we do talk about socio-economic and socio-culture, you know issues in our division – but not under the umbrella of sustainable development. It fits; but it also fits other places whereas that whole area of you know, protecting the environment and those kinds of sustainability habits, they're kind of a cleaner fit under that sustainable development area. (AS1, p. 3)

One assistant superintendent stated:

That's right, contribution, participation – actively participating, engaging in the world around you and the contributions that you are making is sort of how we're thinking about that. Of course the socio-economic pieces as well have been a particular challenge in our school division and our work in that area goes from our provincial stance on advocating for equity in the funding formula at its greatest level to our most recent attempts at school levels, and that's to increase school budgets in order to defray costs for school supplies to families. And then much of what happens in between that, we have used poverty as a lens to really look at our educational practices as well. And the socio-cultural pieces I would say that again, partly due to the population of our school division, which we consider to be very rich in its plurality, has led us also to look at our practices and to consider that particular impact. So what I would like to say on that note divisionally is that we don't see ESD as a subject or as a project. We see it as fundamental to a way of being and to a way of examining our practices as a school system and our teaching practices as well, and to use that framework in terms of improvement – improvement as a system, improvement as a teaching community as well. Yeah, I wouldn't say that we always see it as a subject. If you think you do a project and it's over, I don't think so. I think that it's really something that we can actually use in our examination of all our subject areas, and that it can be part of the lens that we look to see if what we're doing really matters, and has that impact. So I do think we see it in those terms. You know the fact that educators make choices around their topics, they make choices around the methods they use, they make choices of the skills and their conceptual understandings. I think all of that is a part of education for sustainable development. That can impact everything so that if they are choosing things that matter, if they are choosing social justice, if they are choosing the environment and then developing their methods and skills around that in the context of supporting kids and becoming democratic citizens and contributing members, I think that is what ESD is about. (AS7, p. 3)

Some of the interviews suggest that schools within an inner-city context are at quite a different place on the continuum of implementing education for sustainability because many fundamental needs of students in those schools are not being met. Their focus has to be primarily on the socio-economic strand of (education for) sustainability, as a principal of a school within an inner-city context explains:

Yeah, considering just the needs that we step in to meet, right? I mean I think we've come some way in the last couple years with the support of the province to being able to feed kids.

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<sup>30</sup> “Schools within an inner-city context” does not define schools by its geographic location (in the inner city of Winnipeg) but rather by the socio-economic conditions of (certain areas) of the school's catchment area and its implication for the life experiences that students come with into the school.

We've always had breakfast programs but they need more than that. They need lunch, they need snack, they need milk! And so we're starting to get some funding, but it doesn't cover the costs at all. And then again it's kind of X amount per school. It's like well what if the school like here has 500 kids and my school had less kids? Shouldn't there be some reflection of the fact that food costs more per child? (PR6, p. 17)

(2) Those educators who had attended the **SEdA workshops at Helca** in the past two years on the whole had a more detailed, broader, and interconnected definition of ESD. Participants in a focus group indicated that the three-day workshop was a significant starting point for their division. (FG2) One assistant superintendent summarized it this way:

So we sent a group to the SEDA conference and out of it we developed and articulated an action plan. And really the key philosophy of our action plan was simply to profile what we're already doing in our division in various ways in terms of educating for sustainable development to profile our understanding of what that means, and rather than try to from the top down implement all kinds of new opportunities and strategies and things like that –which we're doing in a whole pile of other areas, just raising this education for sustainable development that's going on already to the surface. (AS2, p. 2)

Another assistant superintendent stated:

So the whole idea of human activity and the effects of the activity on earth and on life, I think that's what this is all about. And yes, there is a frame which we are all well aware of in our school division based on the environment, health, well-being, socio-economic and socio-cultural aspects to all of this that are part of sustaining a quality of life for everybody in the future. So I do think without having named it that way, or necessarily talking about it that way, I think talking about it in those terms – like the use of ESD or ESL – is recent for us. But I do believe that the tenants and principles of what is trying to be done have been leading us for a very long time. Certainly I will say that the past two years our involvement in the SEDA conference – we have sent groups of trustees and administrators in the past two years – have brought it, brought that language to the division I think, because people are starting to ask questions and frame it in those kinds of ways. (AS7, p. 2)

(3) The **impetus for developing an ESD focus has come from all levels of education**. It came from a teacher working with students in a classroom, a school running a recycling program or central office administrators moving the ESD agenda forward with the whole division. A superintendent stated:

The committee worked to begin making sure that all staff and all students understand what educational sustainable development is. The assistant superintendant and I did twenty-one presentations to twenty-one schools, and talked to the staff and students all at once –just on two issues: sustained learner and educational sustainable development. (SP1, p. 3)

An assistant superintendent also said:

So I think in practice we've taken a leadership role in that way. One of the main things that we do is to prepare a budget in line with sustainable development practices. (AS4, p. 2)

As a focus group indicated, there must be a multi-layered approach to ESD, engagement at all levels (school activities, policy level, etc.) (FG5)

(4) ESD needs to **be integrated in all aspects of school division operations and curriculum.**

A holistic approach is needed to interconnect all aspects of ESD: environmental, health and well-being, socio-economic, and socio-cultural strand to improve our quality of life. One assistant superintendent put it this way:

I mean we're questioning, 'Are there such things as subjects any more in our world?' The way that a lot of curriculums have been written in the past is to compartmentalize everything into specific subjects and disciplines, and I think our world needs to break those disciplines down and to combine math with engineering, with social impact of the projects. and to look far more cross curriculum. So I think ESD is a perfect vehicle for doing that. The way that we think of one teacher, twenty-five kids, one classroom model, really stands in our way of doing some of these things. They way that we think of grade level, the way that we think of subject and those old mindsets if you like. I think that there are expectations from the community that everything is often in neat little bundles as well. We get a mark for doing math, we get a mark for doing science. So I think there are some challenges in education that need to happen with our community of parents, and I think one of the things as well is some widely held beliefs of teachers, especially the upper grade levels. (AS4, p. 6-7)

A superintendent said:

It is certainly all encompassing. And it crosses every curriculum area that we have, and it crosses really most practices that we engage in as an institution. (SP5, p. 3)

A principal stated:

And talking about different subject areas, and you know, the different elements of sustainable development. So just trying to you know, get away from that whole environment piece with the teachers as well is trying to get them thinking more holistic around the topic. (PR2, p. 5)

Another principal outlined:

So we assume that students will be able to take part – like you know there is so many jobs involved with the composting there is turning and all of those kinds of things that have to take place in order for the compost to develop, and with the greenhouse there is watering and monitoring the temperature and all of those things that have to take place. So there are so many jobs that, you know, kids can be responsible for, and to see how much goes into caring for, you know, for a habitat. (PR2, p. 10)

An assistant superintendent put it this way:

The way the senior admin and then ultimately the board is looking at ESD is that there's some leadership that has come from the province in this particular area and it's moved us so much that it is now part of our strategic plan, that it's social justice and all of those things that surround the issue of social justice like poverty, environmental awareness. You know, the board and senior admin and then ultimately our administrators who are involved in this, the development of our strategic plan have come to the idea that it's really should be part and

parcel and integrated throughout the climate of the culture of a school, but also within the curriculum and so really that's where we're at right now, in the beginning stages of making this one of our major priorities. (AS6, p. 1-2)

(5) The **aboriginal perspective on ESD** was not mentioned very often during the interviews. A principal, however, acknowledged the connection:

We can bring in aboriginal perspectives where for instance we've had elders speak to our kids on the greenway about the importance of nature and respecting nature, let's say around Earth Day –which was pretty cool. We did drumming activities, and again to show kind of a holistic approach to this. (PR1, p. 22)

(6) Many interviewees saw a **need for continuity** in building organizations and cultures that will sustain initiatives as people move around and away from divisions. They articulated the need to build a sustainable focus on ESD in our educational organizations. As one focus group stated, there is usually a “core” group that is leading a “cause” and it is difficult to get others to join the “core” group (FG6).

As one superintendent puts it: “It's people building organizations and networks that are going to continue this work once we're gone.” (SP1, p. 12) A principal stated it this way:

Well why do those things disappear, and you know you talk about well the person that kind of was in charge, disappeared. So then it stopped! So then it wasn't sustainable in those efforts. What we're looking at now is getting the kids involved, making it a part of the things the kids do and they're responsible for so that. It's easier to carry it on than the teacher just being responsible for those kinds of activities. (PR2, p. 4)

A consultant mentioned:

In order for it to be sustained, because you have staff changes and things like that that occur within a school, and if the two people that were passionate about that have transferred to another building, you know it could just die. It won't be sustained. And I think it's important that no one person or group can do it all, that every person or group can do something. So if we sort of think of it that way, and think of it in a collaborative effort or way then we have more sustainability. And I certainly think if it's priority within your classroom or your school, or your division and you're revisiting it frequently throughout the year that also helps to keep it sustainable. (CO1, p. 11)

Interviewees that talked about schools within an inner-city context emphasized the importance of different, more fundamental kinds of continuities: the continuity of personal that provides the school-external support to the parents of the schools' children, and the continuity of students' learning opportunities that is endangered because of family poverty.

Like if [name of parent] had had the same person, whether it's the agency person, the assistance person – I don't care – public health – it all changes all the time. One person from one piece of that puzzle who then stayed no matter where, what, why, how, that was the person. But I don't know, I guess their turn over in staffing is high – I don't know why that is, but I find us dealing with that system is really, really hard for us. I can't imagine what it's like for people who have to count on that. You don't know my story, you don't know me, you don't know anything about my kids, you don't know anything about what I've gone

through, I have to start all over again. But wow! But to do that a million times a year? (PR5, p. 11)

The reasons that lead to things like the kids missing school are pretty amazing when you talk to people, right? Well where was your child yesterday? Well I had to go cash my cheque, and then I had to go pay my phone, pay my hydro, do this, and then I had to pick up groceries and I needed – we had to walk from such and such and I needed so and so to carry them, and from the outside that looks like ‘Oh yeah, you got a cheque you took your kid off to have a party.’ No, you got a cheque and that meant all of this had to happen because you don’t have a chequing account, you don’t have a bank account so you have to do it all in cash. (PR6, p. 11)

### 5.2.3 Schools and Classrooms

(1) Many of the interviewees described the engagement and **excitement that students** express as they participate in projects focused on ESD. This excitement seems to be the result of the hands on nature of the projects and the relevance of this student work to the current ESD issues that affect their lives. Students seem to see how these kinds of school studies have an influence on their lives in the community and the country. As one assistant superintendent states:

Oh I think the benefits are huge! We hope that we’re exactly achieving our mission which is developing students who will be able to be prepared for their future and contribute meaningfully to society down the road. That would be the number one benefit. Side benefits, what we’re really finding is that topics of education for sustainable development are student magnets in that students really get pretty excited about this kind of stuff because they feel that they can make a meaningful impact by engaging in this stuff now. They’re passionate about it and they feel that they can make a difference, so in terms of engaging instruction and meaningful instruction and student voice and just getting kids engaged in the process of education, ESD offers tremendous possibilities. (AS2, p. 7)

A superintendent agrees:

They all wear green shirts, they become earth school three: they’re one of the four schools in Canada. There are thirty-seven kids and they get it. They’re putting in wells in Africa, they get supply lists filled for the kids at Brooklyn school. I mean it’s remarkable. The kids are K-4! (SP1, p. 4)

A teacher outlines a school’s total involvement in a school-wide ESL project:

And we will one day transform the school into a Human Rights Museum. It was from Pre-K to Grade 8 so every classroom had to design what was needed to feel included, and it was wonderful. I mean the grade sixes did residential schools and it was so powerful, and the grade eights did a study of the Holocaust –we made great connections. Grade ones did homelessness or everybody that lives needs to have a home so what are the kinds of homes out there, what can we do to help people that don’t have homes. It was probably one of the most powerful teaching –learning experiences for me that I’ve ever participated in for a long time. It was great. The kids were so engaged. The families went and we invited the communities in and there was people coming into the different classrooms and coming out

crying! And the kids they all could talk about what it was, what you needed to [do]. It was great. (FG1, pp. 18-19)

An assistant superintendent puts it this way:

Well I think one of the benefits is that it really engages students. I think that's the biggest benefit, and we are undertaking and are on year three of a significant piece of work with the Canadian Education Association looking at student engagement and how well kids are engaged in education. And we have some concerns with how well our students are actually intellectually engaged. So I think there's really practical hands on kids getting engaged in leadership, kids getting involved in grant writing, kids getting involved with outside organizations and working with scientists at Fort Whyte Center. I think this is the most significant part of implementing ESD focus in the school. I think too it also pushes teachers to accept and to feel comfortable with the fact that they're not the sage on the stage. So I think that it comes alive for kids. Also I think it's highly relevant –we're asking them to be engaged in their learning, to take responsibility and leadership for you know, changing basically their world that they live in. And I know kids really respond to this. It's highly relevant for them: it's their world, it's their life, it's their community, and they really enjoy it. I mean that's another aspect: kids really enjoy this kind of thing. (AS4, p. 5)

As one principal indicated, this student excitement and concern for ESD could move the teachers and schools to taking action and exploring ESD issues:

And how do you get to move them [teachers and parents]? I'm not so sure. One of the best things we've done here is we've taken, kind of capitalized on the people who have the passion. We've gotten things going, we've gotten the kids interested, and then other kids get interested and then they kind of drag the teacher along. (PR1, p. 10)

As mentioned in a focus group, it brought teachers and students together (FG3) and allowed for students to take a leadership role (FG5). Students are putting pressure on “authorities” to bring issues to the table. Students are very passionate about working toward a sustainable future (FG6).

Another principal stated:

But the biggest goal is to have hands on engaging projects that the kids are responsible for, and they are doing the majority of the work. You know the teacher is guiding them through that. So kind of continuing with the whole constructivist learning approach. Like kids can find fact and figures in three seconds. You know we're beyond the memorization of facts! Kids have to start exploring, developing those problem solving skills. So kind of taking those things and taking more personal interest and becoming more involved themselves. And those things are really hard to accomplish in classrooms Because of you know, our constraints on curriculum teachers feel that you know, we have to get through all this stuff. (PR2, p. 14)

An assistant superintendent suggests:

So you know, eventually, you know, the kids end up pushing the things that are best for us I find. And making –significant transformational kinds of changes, they're likely going to come from you know the next generation. Although we can be the leaders in insuring that that happens. (AS6, p. 4)

(2) There is also some benefit to the **inclusion of all students** and having all students experience success in school, which develops confidence and self-esteem. A superintendent had this to say:

Well I guess on the one hand it would allow students to see the world they live in that they can be people of change, which leads to self esteem building for all kids. So if kids believe that they can be agents of change there's a level of self-esteem that comes with that. And really if we talk about sustainability I mean the benefits are endless, and I don't think that a lot of people understand the full impact of all of those benefits. I mean it talks about seeing the positive and becoming more solution focused as opposed to just reactive. The other thing that I don't know that's talked about a lot is that when we talk about sustainability there is a whole new level of inclusion of students, and it gives them a sense of purpose no matter what their ability level. Which moves them away from the academic piece which is all about getting trapped in to marks and some kids just feel that they're not included because they don't see themselves as strong. But in terms of getting involved with sustainability and the way in which we live, that changes the playing field. (SP3, p. 8)

The interviews with those participants who talked about schools within an inner-city context suggest that the inclusion of all students is a great challenge for those schools because of the transiency of their student population.

The reality is our kids move. . . . But when families uproot and move and they come in, and I would like no loss – no learning loss, and it's really difficult to do. People move and they have to unpack themselves – they don't have moving companies – and so they miss a month of school and then they come in and they're new and it takes a while to figure out their level... So sustainability for me means – is like the right to a full education. There are so many gaps in our kids' years in what they go through that it might take them eighteen years to get twelve years of schooling. And yet the system isn't flexible for that. . . . But surely there has got to be a way to support families – in the first place economically with housing so they don't have to move, because it's almost always housing or safety why people move. It's not a choice usually. And parents want their kids to stay in a school; they don't want to disrupt them. But it's usually external factors that cause it, and it's very frustrating that you see an entire family's education go down the tubes every time they move and then re-establishing relationships and connections. So in terms of sustainability somehow there has got to be a way to get an education and have that be a priority so that you don't get kicked out of your housing and told you have to move. (PR6, p. 8)

(3) The success of the ESD curriculum and projects depended on the **commitment, the support and attitudes of the administrators and the teachers**. It seem that this commitment to ESD is based on personal passion and sense of urgency (FG2, FG5) and the need to build a climate of trust (FG2, FG3). One focus group teacher put it this way:

I don't think it's so much what we do, more than our attitude and how we do it, or respond to the kids when we have the questions or the ideas. (FG1, p. 10)

In other words, we have an administrator who lets you, encourages you to ask those [challenging or controversial ESL] questions that you say teachers struggle with everyday. Because I've worked in some environments where they don't care if you don't ask those questions. [You] have a job to do, this is the job, look it up on page 36 [of the curriculum or

textbook]. Whereas [if] you have somebody [administrator or mentor] who enables you to be a professional, to question, to rely on your own judgment [you feel safe to question]. (FG1, p. 12)

A principal put it this way:

Well therein lies the problem because I really believe right now a lot of this [ESL] becomes the responsibility of the personal passion of individual teachers. (PR1, p. 5)

I think it's because of my personal interest in sustainability issues, I think that helps define my understanding of education for sustainability. And I think it goes back to the pre-amble of the earth charter. (PR1, p. 2)

Part of this comes from my personal background and awareness of sustainability issues, kind of connected from having an experience in religious life about the importance of caring for the earth. Definitely from a spiritual perspective, but now from more of a practical perspective because of what's happening to the earth. (PR1, p. 3)

Well I think as with anything, it's a holistic type of view that you have to have about all of life." Again, it takes the direction of the teacher; it takes a certain amount of empathy if not compassion to want to pursue those things. (PR1, p. 9)

Another teacher indicates:

[Teachers who] have a passion about connecting with nature and doing hands on activities with kids, who live the reality of being involved and connected with nature, and that transfers to students and the school community. So it's not so much what you talk about, it's how you model. (PR1, p. 20)

As indicated in one of the focus groups, we need to build capacity and common language through our passion (FG3).

Interviewees who talked about schools within an inner-city context talked about the more fundamental challenges of high staff turnover and a school system that does not get "the best teachers" to where they are needed the most.

Well we've talked at other times about the turnover in staff. It's an incredibly rewarding but exhausting thing to do to work in an inner city school and the stories you hear from kids and the needs that they have are just so all consuming. And because of that people who have a lot of experience in the division don't tend to apply for our positions. We tend to get new teachers – people in their first ten years. So you know that those early years are really intensive in terms of emotional support and strategic support and planning and all of that, so I would like to see a division take a stance that the inner city deserves our best teachers. These are the kids with the most challenges and we try to create the best teachers, but we don't really have access we feel to some of the best teachers within our division. Those resources are not moved around, they're not shared, and so when you're in the trenches it feels overwhelming that every year you have postings for positions in your school and every year people don't apply. And so you're looking at new grads, or people who've been on terms, and that's a wonderful opportunity to bring in new energy but it also isn't sharing the

expertise around. And there is something to be said for experience. And I think there is a real enlivening that can happen to people's practice if they come in at a different point in their career! . . . I don't want to say mandatory movement, but I think some sense that you work for the division and the division isn't a school, and you receive a lot of training and a lot of professional development from this division, and I think you do need to move around and you do need to offer what you have to different communities, you need to work with different staff. (PR6, p. 14)

(4) Many of the examples of exemplary ESD projects were **school wide initiatives**. They involved ongoing, multi-aged projects. Some, in fact, were multi-school projects spanning different communities and school divisions. A teacher states:

And to me those are the kinds of things [ESL projects] that bring schools together which you've done under the diversity project. So it seems to me that we need to work towards how do we integrate that into what we do in our school and so it becomes part of that. (FG1, p. 8)

Certainly when I think of sustainability of something that kids get involved with in grades one and two and continue to work at different levels all through their time here at our school, and lots of families who take care of it [school garden] in the summer and come so that to me is sustainable. We have a team of students always who are composting. We have an environmental action team. The environmental action team initiate all sorts of projects. We have grades one to four who raise money from anything to dentists in Guatemala to you know, Harvest to Lady Bug Foundation. (FG1, p. 9)

One principal described it this way:

So we're working on this whole school sustainability and some of it looks like people doing individual projects, like I have a very keen teacher who has taken kids up to [Lake Winnipeg] and we took kids up to Hecla island on another project, looking at water quality. Another keen teacher and myself set up a trout stewardship project where we drove down and released them into the wild. So we are building from there, but we also build it in terms of "what does this look like as a school?" Like we do have obviously the recycling and the composting and that's something that is built into our lunch program. We have been working very hard on active transportation and also a bicycle education program. So we've running that in the springtime for the past few years and expanded it this year. When it comes down to social initiatives we've got a large initiative, an ongoing one that we've been helping, Canadians helping out kids in Vietnam. I don't know if you're familiar with that one. They build schools in Vietnam, they have absolutely no overhead costs, it's just all volunteers. And so over the last, probably seven years, we've raised \$12,000 for that project and we celebrate the Vietnamese New Year every second year. So we sponsor a family and try to make that connection that here's a Vietnamese family, but every second year we're also doing this bigger initiative. In addition, we sponsor this family for \$20 in Vietnam and we were told that the \$20 doubles their income. The family's responsibility is that they have to make sure that all of their children are going to school. It's checked by the Red Cross. An example of another kind of thing we do is we do a lot of whole school assemblies and sometimes I'll take that and sometimes the classroom takes it. One class did a presentation on the aboriginal perspective on sustainability for earth day this year. So trying to get that whole bigger picture that this is what our school is about. (PR4, p. 6)

Schools that were part of the UNESCO Schools Network not only seem to work collaboratively but seemed to have a broader view of ESD issues and included socio-cultural and socio-economic aspects into their projects. As one assistant superintendent stated:

I wouldn't say that we do that on a regular basis, but there are certain initiatives such as [these in the] UNESCO [family] where the schools will present their ideas to other schools, and that may generate some interest if it fits into the school plan or into their time that they have available at the school. (AS5, p. 9)

(5) As educators were describing the extent of ESD projects in their schools or divisions it was felt that many of them were **set outside of regular classroom activities and curriculum**. They tended to be based in clubs and extra-curricular activities. As one assistant superintendent indicated:

I think some of this work in ESD at the upper grade levels has been moved more into clubs, environment clubs, sustainable development clubs etcetera rather than the mainstream [curriculum] of what kids do every day. (AS4, p. 7)

Another states:

But it's not curricular in nature, but they kind of tie it into some of the outcomes, but not specifics. Pennies from Heaven, Coats for Kids, volunteering time at the food banks and at the Harvest program [for example]. So there are many of those kind of pieces [projects] that are in place in our schools, but I'm thinking that the way that you've defined, the parameter that you've put on your ESL [or] ESD, I'm not sure that the folks in the field [teachers] would see that [the connection]. (AS5, p. 3)

Some focus group participants indicated that clubs started outside of the classroom become clubs for selected groups. "What happens with the rest of the school population?" Although they are great starting points and excellent activities for the students and the school, there is a need to include all students and move education for sustainability into the classroom. (FG5)

(6) Interviewees expressed the belief that ESD initiatives not only **connect students to the community outside of the school**, but that this very fact was an educationally critical outcome. The development of partnerships outside of the school, not just with parents but with the wider community was seen as being key (FG5). An assistant superintendent outlined it like this:

I think that to sort of push the walls of the school out and realize that the whole community and the world beyond is the classroom. And so to engage with the partners –that's something that we try to do in [our] school division through partnerships with Kelvin Farms, Ducks Unlimited, Fort Whyte Alive, the water stewardship board, Engineers Without Borders, you know we can point at many, many partnerships that show the kids that this is education. This is not about being in school per se. (AS4, p. 4)

Another assistant superintendent put it this way:

We had a couple of the high schools where it was mandatory for the kids to graduate. They had to do a service learning experience. It's not uncommon for our high schools to have

things like that [ESL learning experiences] and I'm going to say even our middle schools now. It becomes more of a grade level or classroom service learning. (AS5, p. 5)

A superintendent states:

We have a youth mentor program which is kind of a big brother, big sister program and this is kind of an offshoot of that [grant that we access through Conservation Manitoba]. So because the funding is through Conservation, they're targeting environmental projects so they would help with recycling and that kind of general thing in schools. So they're I guess an extra set of arms and they can help teachers gather materials, they run projects with kids on ESL type activities in their school. (SP6, p. 3)

And a principal outlines:

And it meets again some of our student needs, it helps us to get involved with the community, so we partnership with the community, particularly with the greenway. So it's becoming good community members, and when we go over there and clean up that helps the community, and that also again teaches our kids about being environmental stewards and not to mess up that area, and some of our kids take that real seriously. And in fact some kids on their own, like on a weekend or something, with their parents they go out and pick up some garbage. (PR1, p. 15)

A superintendent stated that part of sustainability for rural communities is connecting students to the communities businesses to ensure continuity of viable economic life in their town:

With the education system too it's playing a big piece here and certainly in this Lake project it is. With the tie-in to community on the project there becomes a bit of an expectation of the school to continue to play an important piece there. So that helps promote some sustainability as well that the school and the division realize 'okay, this is important to the community; how are we going to continue it – our involvement in it anyway – when these key individuals leave?' (SP4, p. 4)

Interviewees who talked about schools within an inner-city context emphasized how crucial links to the community are to just address some of the very fundamental educational needs. In areas of high poverty, the interviewees pointed out, community groups often perceive that they compete with schools in those areas for funding of programs. Linking and collaborating with those groups to pursue common interests was then crucial for the schools.

(7) Much of what was discussed in the interviews about students in classrooms was what they are learning about sustainability. There are certainly different levels of knowledge in classrooms across the provinces but there is a common interest of young students in the issues and what they can do about them. As well as the students, their **parents get excited about their child's excitement and learning**. A teacher states:

That's where you get the parents involved, because once they get the kids excited I think that's what they want out of their children. We still have to teach them the basics and so we teach them the basics along with using these interesting topics that they want to get engaged in. (FG1, p. 24)

And a principal states:

Some of the great successes that I see or feel good about is changing behaviour with students, as well as parental involvement, being concerned with sustainability issues. I also feel good about the fact that we have a core group of people within the school community. (PR1, p. 20)

As indicated in the focus group conversations, parents need to be included in the development of ESD programs to connect home and school. (FG2)

(8) Another theme was the **connectability of ESL issues to other areas of the curriculum and classroom life**, its interdisciplinary nature. These areas can involve traditional subjects, community issues, and skills and attitudes that are part of becoming an effective citizen. It is another way to include language and culture into the learning experiences in the classroom. As one of the focus groups put it, “Open up boundaries for student to show how interconnected we are” (FG2). A teacher put it this way:

So I integrated language arts and science and math all into that as well as [artists] came in and we had somebody come in and write songs with the kids, and then another came in and we put it to drama and we had a celebration of learning at the end plus a gallery walk where they could go and walk through every classroom and see what the children had learned. (FG1, p. 26)

It’s just how you begin to teach and model for your kids and because I think the arts is such a way for kids to access it, it’s a safe way for kids to experience or express whether it’s you know the arts as process rather than as end project even though you’ll probably end up with wonderful products at the end if they’ve been engaged. The arts is a very safe way for kids to first step in to other peoples shoes, learn to experience, or to look at paintings and say ‘What stories do these tell?’ ‘It’s beyond language as well’. ‘You don’t have to speak English to draw pictures and or to move, to make tableaus, or anything like that and so I think infusing [art into the project allows access to all students]’. At our meeting we talked about integrating all the arts as a safe way to start conversations about cultural differences. Children intrinsically identify and respond through the arts, to the arts. (FG1, p. 20)

#### 5.2.4 Indicators of Progress

Through our research interviews and review of school division websites, we found hundreds of exciting classroom and school ESD projects, too many to list here. The projects tended to be in the environmental area but more and more involve issues from the socio-economic and socio-cultural strand. The following is a general overview of some of the successes shared by interviewees that were gleaned during our research interviews.

(1) One of the most mentioned success stories relates to the yearly **SEdA conferences** and follow-ups. A superintendent said:

The workshop that you guys put on with York, I’ve come back and as I’ve told the board I said ‘it’s almost life-altering’. I mean I was a firm believer in this before...but that’s just an

incredibly good three days. I wish I sent another five [division team members] this year. (SP1, p. 13)

Another superintendent stated:

It's only really been since we engaged ourselves in the SEDA workshop that we really developed a comprehensive systematic strategy towards sustainability. And I think that was probably the... the turning point if I can say that in terms of coming up with a more comprehensive strategy. (SP5, p. 5)

(2) **Student engagement** and involvement was one of the most prominent features of successful ESD implementation. About the creation of a school-wide human rights project a teacher stated:

I think we can't help have this experience and have the conversation turn towards issues of inclusion, and so that's something we talk about a lot within the school and at staff meetings. It is a huge topic; how can we [ensure] that everybody finds a place at the table and feels welcomed and needed and respected. (FG1, p. 18)

An assistant superintendent indicates:

I think that for me it is a really, really good example of sustainable development education in practice. This video was produced by the students, documentary to DVD that they've done. They worked with CBC for archival footage, they've worked with the water stewardship board, Engineers Without Borders... It's basically a real practical hands on look at the real dilemma of Lake Winnipeg and what we can do about it, and student produced. Five young people took the lead on this; they presented it to the audience on Friday. So yeah, for me it's a really good example of hands on education that's really relevant, that's highly engaging for kids. And really gives them a real world job to do if you like. It takes it out of the theoretical, it takes it out of the curriculum and puts it to this is what we all can do, we all need to think about. (AS4, p. 4)

An assistant superintendent outlined it like this:

You know, making sure, somehow, some way we're connecting with the community by providing some of the things that kids are doing to make their community a better community. So you know, reaching out beyond the parents – although the parents and the grandparents are going to be the ones that are going to go to [our website] because their kids have been involved in this, or maybe there are photos there of them doing something you know, related to, in this area [ESL]. But this is open to anybody and so is our divisional newsletter that goes out five times a year and it is what you'll see in contact, which is what our newsletter is, goes to every resident in the division, and it highlights all of the sustainable living initiatives to the point where it's two full pages in this latest one, and it points to this website which we know now, websites are becoming a vehicle for communicating to the larger community, and we're sort of trying to draw people to that so that they can see what it means to have viable, vibrant schools in your area. as enrolment declines and as the area gets older, right? We have the issues of taxation and we're the lowest [mill?] rate in the city, and is this something to be proud of? I'm not sure. You know, but taxes are always an issue if you've got 75% of the people who don't have kids in the system, so we're trying to reach out to the community to say "okay, well here's the benefit of having them in your school, in your division, in your area. (AS6, p. 7-8)

(3) **Students connected into the community** was also mentioned as a highlight. A principal provided some examples:

We've had a lot of opportunities to work with the executive from the [community environment enhancement group]. For instance we've established a Monarch butterfly station that is now certified. Today I was going to have grade six kids out there planting flowers that would attract monarchs. That's been a huge piece of study for grade six. We do a frog watch program with grade four. We did the TD shoreline and data collection of the garbage [collection] in the fall. We did a grade eight carbon offset inquiry project. We've done various critter dipping experiments using the retention pond on the greenway. We've done composting both outdoor as well as indoor; right now we have three indoor compost bins that we ordered from Nature Mill and we use all the leftover lunch stuff and leftovers from Winnipeg Harvest, and the soils that are created in these indoor compost bins are then used in community gardens that [our school] has set up. We've put water bottles in the toilet tanks to help conserve water. We've replaced our garbage cans with coffee cans to cut down on waste, or at least bring awareness of waste and everything else we try to recycle. We've had speakers in from the nature conservancy, resource Canada, again [community environment enhancement group], and aboriginal elders. We did a bats and turbine study at grade four which resulted in a grant from the Winnipeg Foundation which allowed our grade fours and grade eights to visit the wind turbines in St. Leon. We've also organized field trips to a U-Pick fruit and vegetable farm, an organic apple orchard farm, Brady Landfill and Recycling Depot, and the water treatment facility. Besides the indoor composters we also have a worm composter in our family center, and we recently helped some of our folk in the community learn how to do balcony gardens. And we've done enviro-cloth bags where we sewed 125 cloth bags and decorated them specifically for each family to take home and use instead of the plastic bag thing. And then I have a group of kids at grades three and four that are called the enviro-kids, and what they do is they collect all the sustainable materials that we have in the school for recycling as well as composting, and these kids help us deal with all the recycling within our school setting. So this is kind of a wealth of stuff that we've developed in the school. And each grade level you know, has its opportunities to do things. (PR1, p. 5)

The principal goes on:

Again, the connection with the [community environment enhancement group]. And some of the great successes that I see or feel good about is changing behaviour with students. As well as parental involvement being concerned with sustainability issues. I also feel good about the fact that we have a core group of people within the school community, that have a passion about connecting with nature and doing hands on activities with kids, who live the reality of being involved and connected with nature, and that transfers to students and the school community. So it's not so much what you talk about, it's how you model. And sometimes it's best to not even say anything but just to do, and then before you know it somebody else gets on board. (PR1, p. 20)

**Students as stewards** of their environment was another theme that was part of the connection to community, a deeper connection to the earth. A principal described it this way:

And it meets again some of our student needs, it helps us to get involved with the community, so we partnership with the community. Like one thing we kind of have planned in the fall is to maybe plant a thousand daffodils for cancer research. So somebody's trying to

get a hold of all those bulbs, and if she can what we would do is we would provide some of the labour to do that. So it's becoming good community members, and when we go over there and clean up that helps the community, and that also again teaches our kids about being environmental stewards and not the mess up that area, and some of our kids take that real seriously. And in fact some kids on their own, like on a weekend or something, with their parents they go out and pick up some garbage. (PR1, pp. 15-16)

The principal concludes:

And so the education [ESL], so it's all interconnected. It's not just that we want to educate the students in our school; we want to educate all the ones that are not in our schools. (PR1, p. 20)

(4) **UNESCO schools** were provided as examples of how ESD activities have been able to move beyond just environmental projects. A focus group outlined the intra-school component of these schools and the foundation of the four themes or pillars of a UNESCO school (FG5). An assistant superintendent put it this way:

Some of the things that we do in UNESCO schools, which is kind of that outreach global kind of perspective of safe and caring schools and wellbeing, and anti-racism and so on. We're actually quite involved with that [lists four schools]. But they certainly have well established UNESCO programs in their schools, so we do much of that. There is, often we will have schools or grade levels who will do a community kind of outreach, either Christmas hamper piece and do some teaching around that. But it's not curricular in nature, but they kind of tie it into some of the outcomes, but not specific. Pennies from Heaven, Coats for Kids, volunteering time at the food banks and at the Harvest program. (AS5, pp. 3, 9)

(5) **Integration of multi-media** into ESD projects

One principal outlines their success with current technology:

I have the advantage here because I have one to one laptop program going where every student in grade four to eight has their own laptop. As a result of that, I can do inquiry projects like crazy because you're not going to find a lot of reading material right now off the internet on the oil spill in the gulf. So what kids need is immediate data. They can go to some CN or PBS (downfeed) or whatever...and they can get up to date information. But without the technological resources to do some of this stuff effectively would be extremely difficult. So we're blessed in the fact that we have the technology at our kids' hands. (PR1, p. 8)

A superintendent states:

And so some of the success that we've had there is what we call[name of program], and it's a blended approach to teaching and learning. We're trying to move towards the inquiry based learning, and there you would have some laptops in the classroom, you would have a smart board, you would have some cameras, you would have kind of a smattering of technology. (SP3, p. 20)

### (6) Manitoba ESD Curricular Materials

Several of the interviewees mentioned the importance of the curricular materials and the Manitoba Education website as moving the understanding of ESL forward in Manitoba. One principal stated:

You know certainly there's such a diverse array of materials and curriculum, I know whether you're getting the green teacher off of the internet or of you go into the internet even from the Manitoba Education site they are so many links. I mean I get all of these links from Ann McDermott and from Carol-Lee Buckler that I try to judiciously pass on to teachers when they look useful. (PR4, p. 11)

A consultant outlined the resources:

Manitoba Education also has several documents out that are available to teachers and the one in particular is called Education for a Sustainable Future, and it had quite a few pieces of information in there that would help teachers to incorporate ESD into their existing curricula – and then they have a couple of documents that are specific to sort of learning resources for sort of education for sustainable development K-12, and then they have one for grades 7-9 in particular, and then they have some for grades 10, 11 and 12, so they've broken it down a little bit. I was just told this week that the province is actually working on a document that identifies every outcome in every curricular area in every grade that will have a link or a connection to ESD. So somebody is already working on that to help teachers see where the connections are. (CO1, p. 9)

Another consultant mentioned:

Well I think that the Manitoba Education resource, that education for a sustainable future [is available], it's called a resource for curriculum developers, teachers and administrators, I think that's a really good resource. You know I'm just not really sure how many teachers are really aware of it. (CO2, p. 6)

## 5.2.5 Current Challenges

### (1) Understanding of the Concept of ESD

This is one of the major challenges of the implementation of an ESD curriculum across Manitoba. This misunderstanding or at least alternate understandings has a number of threads.

(a) There seems to be an absent of an **Aboriginal perspective** on sustainable living when educators outlined their perspective of ESD. It was not that there was a complete lack of appreciation for the need for the inclusion of an Aboriginal perspective but it was not connected to ESD or included in the discussion around ESD. One superintendent stated that they were promoting it in their classrooms:

It's not really an area of focus per se for us is the area of aboriginal education. Because there is certainly a challenging segment, an increasingly large segment of our society. We don't have any First Nations communities within our boundaries. We do have some aboriginal students through, well we have Metis in one community but our aboriginal youth usually come here through Child and Family Services, through foster arrangements. However on the

other hand we still are promoting aboriginal education in our classes because we do feel that our students need to be culturally aware of the different segments of society. (SP4, p. 21)

A principal put it this way:

I think that sustainable development goals are just modern day versions of traditional teachings and so that fit of bringing communities, like walking alongside communities who traditionally believe in those values, is a way to make the strong connections between institutionalized programming and traditional community values, because I think those things are hugely closely linked and often times not enough respect given to the traditional knowledge that's available within that – within an aboriginal context, and now I'm just covering not just aboriginal context but the cultural context of many people around the world. Like the basic cultural context of the elders around the world is very similar, and it is all about sustainable development. (PR5, p. 1)

(b) The **understanding of ESD was on a continuum** from not recognizing the term, to only having an environmental focus to a few that saw the interconnectedness of the three pillars of ESD as outlined by Manitoba Education. An assistant superintendent stated:

For the majority I would say it's still a 'go green' kind of thing, not looking at the other two legs of the stool ...the socio-economic and the socio-culture. We work a lot, and there's a lot of programs that I think are happening to address those issues. But they're not under the umbrella of sustainable development. People would see that as something quite separate, you know, and even when I delve into that whole area and get a better understanding of it myself, like at SEdA academy you know there's a lot of things' running through my head, you know. Well we do talk about socio-economic and socio-culture, you know issues in our division – but not under the umbrella of sustainable development. It fits; but it also fits other places whereas that whole area of you know, protecting the environment and those kinds of sustainability habits, they're kind of a cleaner fit under that sustainable development area. (AS1, p. 3)

Another states:

It still exists [paper recycling] and it's quite successful. I mean at one point if you could recycle you were thought to be quite sustainable already. That's no longer the case. I mean we've moved a long ways from that and things like paper shredders. We've also done some things on a division level in terms of water conservation. We've installed things like autoflush in the urinals in some of our schools and we want to continue to do that. Installed auto-regulated taps, faucets in one of our collegiate and we want to keep moving with that. Most of that has been done with our –I think it's the Manitoba grant, and as long as the financial resources allow us we'll continue to move forward with that. Another thing is that we've done lighting retrofits in our gyms and offices and some of our classrooms, and we continue with those upgrades as they're needed and as the Hydro grants continue to be afforded to us. I mean that's some of what's going on at the divisional level. Over the long-term they see cost benefits. (SP3, p. 7)

As one focus group indicated there is a need to develop a common language around ESD (FG2). We need to expand our notion of ESD and not automatically think about the environment when we hear the term ESD and then jump to economics after that (FG3).

A principal put it this way:

I'm really seeing ESD as being certainly the way that UNESCO has framed education for sustainable development with their three pillars, and I certainly have spoken to other people who argue that there are at least five pillars and not three, and perhaps more. So I mean I guess initially I was looking at what brought me to my understanding of ESD –which is sort of a broadening of the understanding of looking at okay, we've got social and environmental and economic and then there is this whole other extinction of cultures that is bothering me, and I'm seeing that as being a little bit different than the social, and there is probably a political part of it in there too. So that whole UNESCO part of it – to me when I look at education for sustainability, I look at that as being almost a deeper level. Like one of the things that I'm really afraid of is that school divisions look at ESD and go “ok, this is another – something that we're going to educate about as if it was social studies or science as opposed to my understanding, and it might sound trite to say it, but basically the planet. Saving life as we know it is basically what I see education for sustainability and when I think of people like the permaculture movement, organic farmers and people who are really in the nuts and bolts of it. In terms of ESD per se, I certainly look at it as being a huge broad topic and not just something that pertains to schools. It's a whole sphere of public education and getting . . . politicians of ours to understand that what we're trying to do is preserve some sort of a reasonable future for our children. (PR4, p. 4)

(c) In a few cases the educators indicated a **sense of urgency for an ESD focus**. There **needs to be a priority** to take hold in Manitoba. It was usually accompanied by the interviewees outlining what they were doing in their personal lives to deal with the environmental, socio-economic and, and socio-cultural issues of the day. But generally there was a lack of a sense of urgency that the ESD programs and the UN Decade of Education for Sustainable Development has been presenting for the last five years of its work. One principal put it this way:

I guess one of the things, one of the really key things is that you need to get somebody who is really committed to sustainability. And who has a true understanding of sustainability before you kind of have any meaningful professional development. (PR4, p. 15)

I see ESD as something that everybody in the school division needs to understand. Everybody in the building, and if you don't have that, it's difficult for it to be meaningful. If you don't have everybody on board: your maintenance staff and educational assistants... We sort of need to start at a base level of getting everybody's real understanding of what this is, and then perhaps going more into what is more specialized. Well maybe the teachers don't need to know every last thing that the maintenance people do once they all have the same common understanding. And in terms of administrators? Administrators and teachers I think can go through pretty much the same PD because I think administrators need to be teachers first before they get on to the other part of their job. (PR4, p. 16)

One of the anecdotes was that after our workshops one of our teachers told me that she'd been so moved by the work that we were doing, she sold her Hummer and got an energy efficient car. And again, isn't that interesting that that person probably will then do more work towards changing her teaching because she can now stand in front of the mirror and say 'you know what? I believe in this and I'm going to do something about it'. Oh absolutely, I mean I guess one of the kind of underlying themes for me is always walking the talk. And if I didn't cycle to school and practice organic gardening and you know, my whole life has been focused on trying to become more sustainable even before the term was really popular then

the things that I say at school would have very little credibility. Among the teachers? Really some of them are doing readings on their own. And because there's not, hasn't been a lot for them to participate in, I mean some of them have gone to some workshops at SAG, but really this series of workshops that we did at our school has been the main thing for the teachers. (PR4, p. 21)

A superintendent stated it this way:

I feel that there is certainly a responsibility on behalf of public education to teach about this in our schools and to develop the capacity of the people within our public education system, and I'm speaking about, you know, our students, to become contributing members of a democratic society and sustainable development needs to be part of that contribution – or living in a sustainable way. And so it's incumbent upon the public education system to really show leadership in that area. If it's not the public education systems that do it, who else is going to take on that responsibility? So that's what we're currently working on and you know this is a long range plan. This is not something that we're going to change overnight, but has certainly helped for our board to say 'yes, this is a priority for us' and now I can articulate that it is a priority for us as a school division, what that means for us in terms of our practices, and how everybody can contribute to that. And so we held a division workshop in September (our fall PD day) on education for sustainable development, and we brought in all of our staff including support staff. (SP5, pp. 3, 5, 6)

Interviewees who talked about schools within an inner-city context saw the urgency for those schools first and foremost in the socio-economic strand of education for sustainability, namely addressing family poverty.

Yeah, considering just the needs that we step in to meet, right? I mean I think we've come some way in the last couple years with the support of the province to being able to feed kids. We've always had breakfast programs, but they need more than that. They need lunch, they need snack, they need milk. And so we're starting to get some funding, but it doesn't cover the costs at all. And then, again, it's kind of X amount per school. It's like, well, what if the school like here has 500 kids and my school had less kids? Shouldn't there be some reflection of the fact that food costs more per child? (PR6, p. 17)

(d) There is a **disconnect between all those involved in education** between the board, the central administration, school based educators, parents and community and their understanding of ESD, the vocabulary and the urgency of the issues. Educators and the communities are not always on the same page.

So it's the vocabulary piece I believe. I don't think that you have to just sell the notion of sustainable development or environmental awareness or any of those –how can we protect our globe and our community and you know, be good people and all that. I don't believe that anybody has to sell that to school divisions, individual schools or even individuals in the community. The challenge is going to be getting people with the same vocabulary, the same understandings of what the definitions are, and how they all connect. That's going to be the challenge and I think you've probably already identified that as being where you need to go with that. The other piece is how do you get that common vocabulary and knowledge and understanding and I'll say even passion to grasp on to this? It's like taking that big steam ship and kind of turning it around to go the other direction, and it takes an awful lot of time for that new course to be established. (AS5, p. 10-11)

(e) Most interviewees did not talk about the socio-economic strand of sustainability except when they discussed projects that supported international relief efforts, for instance, fundraising initiatives for flood or earthquake victims. Those interviewees who spoke from an inner-city school context primarily addressed the socio-economic strand.

## (2) Curriculum

(a) The **need for a responsive (flexible) curriculum** and teachers who are willing to be responsive to ESD issues as they come up (Haiti, Gulf Oil Spill, flooding in Pakistan, etc) Current issues cannot be written into Manitoba Curriculum but must be dealt with in the classroom in a timely manner. One teacher describes the phenomenon:

The issue [cultural conflict] came up absolutely in the news, the issue came up when they had received letters from their pen-pals, the issue came up when they saw articles in the newspapers here, so they were bombarded from many [message], from Facebook things that they saw, and YouTube, and they came to the classroom having to talk about it. (FG1, p. 14)

A principal outlines the conflict between “official curriculum” and emerging curriculum. If teachers are not using an inquiry stance, they look for already produced materials, ready to go. This, however, cannot be done fast enough to address the current unfolding global issues. A principal put it this way:

Sometimes teachers are looking for the canned materials to teach, and I don't think environmental issues as they develop are always going to be the canned ones. Because sometimes you deal with the environmental issues as they arise. Like a good study we're doing right now is the effect of all the rain on crops and food development, like in Manitoba. And that's neat because some teachers are picking up on what's relevant. I would say more than not, most schools wouldn't start to touch these issues right now because they would see them as kind of irrelevant, and not part of what is stated in the curriculum. So they don't want to touch it, because they just would rather cover those other outcomes as stated that are easier to deal with than to get kids to do the inquiry piece. (PR1, p. 6-8)

(b) Many of the teachers discussed the issues of **an overloaded curriculum**. If ESD is seen as another, separate part of the curriculum, ESD is seen as an add-on. Teachers will not be able to do it all if they see ESD as an add-on. One teacher outlines it this way:

You're describing every teacher in our battle everyday, of what stays and what goes. Its always important what you spend time on, what don't you? Is this a teachable moment? Do you stop the class because you see tears in the classroom and you know that this is going to be a powerful? Do you bring this article to the class? This is something that you struggle with all the time. (FG1, p. 30)

A principal states:

You know we're supposed to do all of the aboriginal integration. Okay so you do that. And now you're supposed to do sustainability stuff. And then we've got the huge cultural diversity issues, and I mean you're supposed to do this above and beyond the curriculum yet

at the same time if you do it in an integrated sort of manner, it is possible to get all of this done. But boy it's hard to get people to jump on the bandwagon for any of this stuff". (PR1, p. 11)

A superintendent outlines it this way:

One of our challenges has been I guess capacity within our organization. We've declined [in student population], we're just under a eleven hundred kids now. Basically the size of a good size high school now. And so you have seventy to seventy-five teachers and pulled in every bloody direction. People see it as another thing on the plate. That's a challenge. With only so much energy within your organization how do you make this a priority and have them buy in? And when are things coming off our plate? (SP6, p. 8)

And another superintendent summarizes this aspect:

I think another challenge is getting past seeing the whole notion of sustainable development in living as something extra. I think we need to get past seeing it as extra, but as a way of being and doing. (SP3, p. 14)

A focus group indicated that if is not embedded and remains peripheral it will be difficult to move education for sustainable living ahead in schools. (FG5) There is so much to do in the school day, musical, sports, how do you juggle all these events. (FG6)

A superintendent said:

But right now our curriculum is full. And I keep hearing that from our teachers, and somehow we have to... unpack it a bit and say 'okay, what's critically important here?' and 'How can we focus on what's critically important?' Education for sustainable development needs to be one of those critically important things. And so again, that's easier said than done. We need cooperation from the ministry. I've sent that message to the deputy minister a number of times, and I think he's listening, but I don't feel a lot of movement yet. (SP5, p. 14)

A consultant stated:

Right, I think certainly at the classroom level the strategy to ensure success of the ESD within the classroom is for educators to view it as an integral part of their existing curricula, and not simply as an add-on or another thing to kind of do in an already crowded school day. It needs to be sort of a philosophy if you wish, in that it's something embedded, that's already happening within the classrooms. I think classrooms and schools focus in a variety of ways on different areas related to the environment as I had mentioned earlier. And what we learned from our survey is that we're starting to see a strong minority of schools that have begun to approach the idea of sustainability through a different lens, and that being the society lens. I think success for ESD within the classroom is also experienced when there is sort of a direct link to a curricular area, and we talked a little bit about science and social studies being curricular areas that lend themselves very well to incorporating ESD. Another thing that – perhaps at the school level, maybe not so much at the classroom level, but I think it would impact upon the classroom is whenever ESD is written into the school plan where it's a

component of the school plan, because that helps it to remain a priority for school teams. (CO1, p. 7)

A consultant stated:

A challenge again is to make it a priority, make ESD a priority when there are lots of competing agendas, and we certainly know that that happens. You know divisionally we have priorities and then within the school they have school based priorities that are often reflective of the divisional priorities. But again, being able to make ESD a priority and see the fit where it can fit in is a bit of a challenge for some. (CO1, p. 22)

(c) **Students get conflicting messages** from their parents, the media and popular culture about the urgency of the sustainability issues and their role in a consumer society. A principal stated:

In our present society no one really sees the urgency. Like for instance I know water promises to be what they say in the 21st century what oil was to the 20<sup>th</sup> and there's going to be a lot of wars out there, not about oil but about water. How much water you have will determine the wealth of various nations. But I don't think we even are aware of any of that generally speaking. Because we don't have to worry about water in any way shape or form right now. Unless you start educating folk about it, and the only way you can start educating of course right now is [to get the] young kids to see if they kind of want to get on the environmental band wagon, and then some of them kind of drag their parents along. And they're fighting it uphill. I'm talking of the young children, an uphill battle against the other media that's telling them to buy and to do all the other things and you're also fighting an uphill battle with adults because a lot of them think "well, this isn't worth my time!" and it might be another generation's problem. But let's say they don't have the moral compass to realize that we're also responsible for future generations. (PR1, p. 7)

(d) Many of ESL projects have **moved out of "classroom" curriculum** into clubs; ESD is not being integrated into the "official curriculum". An assistant superintendent put it this way:

I think some of this work in ESD at the upper grade levels has been moved more into clubs, environment clubs, sustainable development clubs etcetera, rather than the mainstream of what kids do every day [in class]. (AS4, p. 7)

(e) **Inquiry / active / engaging curriculum**

One principal put it this way:

So I guess inquiry certainly is something which is worked really well at the classroom level, and certainly more in the intermediate, in the four-five-six. But certainly at the primary even as a whole class they've done some very teacher directed inquiry and that seems to have worked quite well. I mean, the ESD aspect certainly, those ties that are in the curricular connections that you see on the department website. (PR4, p. 11)

I guess one thing is when you look at teaching and learning in terms of being more student-directed, learning is more activity based. If you want to incorporate inquiry, those things just fit so well into ESD. And also this whole business of trying to attach what you're doing to real life. So those are some things that definitely fit in there as well, some of those tenants of exemplary teaching practice just fit in very easily with ESD if you are doing it properly. It

would be hands on and it's going out to the field and testing the soil or testing the water quality and getting out of the classroom is another part of it as well. We have a fall camp that we run for the intermediate students, and even just the fact that those students are getting out and they are in nature. It's great teaching practice to get them outside the classroom. So all of those things are really strongly connected to ESD because it's not something that is an outside add-on, it's something that can drive what we're doing. (PR4, p. 13)

A superintendent said:

I believe that we can use education for sustainable development as a context to address some other issues that are of concern to us in our public education system right now, and that is the whole issues of student engagement and you know, we've been doing some research in that area over the last number of years as part of a high school review and our research is showing us that students are becoming more and more disengaged with curriculum, and we think education for sustainable development can provide a context by which we can engage a greater number of students in their learning at school. (Sp5, p. 7)

A principal stated:

We want this to become something that becomes a part of their planning and a part of what they're doing with their regular instruction because if it's an add on it won't happen. It won't be sustainable as a goal, if it's something else. You know I have to do the science, the math, the ELA and I have to do the sustainable development activities. So it has to be incorporated into their regular instruction. The kids get a deeper understanding of that when it's a part of the curriculum they're already doing. That's right, and one of the other things we're focusing on as a division is student engagement is a huge piece of our school division priorities, and citizenship, and just the whole topic of ESD allows us to work on student engagement. (PR2, 11)

A consultant put it this way:

I think one of the things that we talked about here was whenever ESD can be approached in a hands on active action based way the students will become more involved and engaged, and I think once you ignite the passion in kids there is a lot of power to that. (CO1, p. 8)

Another consultant stated:

And I think we really need opportunities for kids to inquire, to critically evaluate information, synthesize that, you know develop their own understanding of sustainability and then, act on it by showing their respect for the earth and taking some kind of direct action. When they can come up with their own focus, that it's something that is important to them, and they can do research, like look at what do they already know about something, and what else do they want to find out, and really have enough time for kids to research and to formulate their own ideas. I think that's an opportunity for them to really build their own understanding. I think it's about constructivist learning, where you construct your own understanding, and then I think you do internalize it more. It becomes part of your belief system and then you really want to do something about it. (CO2, p. 4)

**(3) Time**

(a) There is **just too much to do** in a school day, as an assistant superintendent described:

You're competing with priorities, competing with policies, competing with interests and directives and over-all it's very much a trying thing, and we can talk all we want about 'it's not more work; it's about something a little bit differently', but nonetheless any time you bring on an initiative like this, where is it going to be on your priority scale? And if you try and take on too many pieces then you end up really not doing any of them that well, and I think the biggest challenge is just really over-all time. Where are you going to put the focus? Where is it going to be because again, there are a lot of things happening in our division I think around ESD, but it hasn't been super-high on the priority list like some other initiatives and I think that's why when we talk about ESD at our division it mainly has to do with the environment and [not having an] understanding of the three-legged stool so to speak. So I see that as the biggest issues. (AS1, p. 6)

Focus groups agreed that time is a factor (FG2) (FG6). They also asked, how we get new teachers involved when they are just struggling to get by on a day-to-day basis? (FG3) Superintendents see this pressure. One stated:

Well, it's a high priority with the government, it's a high priority with the Deputy Minister and then they [Manitoba Education] came out with twenty-one initiatives and number seventeen was ESD! (SP1, p. 13)

Another indicates:

The challenges for us are always time to do this, because we're building the ship while we're sailing it. (SP2, p. 9)

A superintendent said:

Well I guess you know, probably the biggest challenge for us right now is that we have a lot of competing priorities. And you know, even though this is a critically important focus, there are other important issues facing the education system that we need to pay attention to as well, and sometimes educators feel a little overwhelmed. (SP5, p. 12)

**(b) For curriculum planning and reflection**

A superintendent puts it like this:

Well some of the challenges I would see is, if we're talking about curriculum and getting it into curriculum, there is a challenge of time for planning. How much priority do we give it based on the other demands that are part of the system. I mean the educational system right now has some significant demands on it. (SP3, p. 13-14)

An assistant superintendent adds:

I think another challenge is teachers needs time to get together to plan and think this through and to evaluate and to work consistently over time. So I think regularly scheduling this kind of time into schools for planning is a challenge and I think we've started to do some really good work in our division in that regard. We have –two of our schools in particular released

the kids at 2:30 on one day a week and that time is for teachers to get together to do this kind of work, to look at how well our students are doing, student engagement, student achievement, all those kinds of things. (AS4, p. 8)

As a superintendent stated:

I mean I don't want to complain about the funding because the funding is what it is, but the other thing that's happening in the school itself is the amount of work that teachers are required to do in terms of individualized kind of instruction and inclusion. (SP3, p. 13-14)

There is also the challenge of providing time for PD and teacher talk without being away from the classroom. How to balance these different demands is an issue. (FG 6)

(c) For principals to be **instructional leaders and also deal with administrivia**

One assistant superintendent described the challenge this way:

I think a consistent challenge too is to work with the leaders in the school division about principals and vice principals being instructional leaders. Very often they don't get enough time to be an instructional leader as they put out fires in their buildings. (AS4, p. 14)

(d) **Personal burnout**

As a superintendent put it:

The challenge for us is always time to do this. Because we're building the ship while we're sailing it. I think the other challenge is one of making sure that our human resources don't burn out. (SP2, p. 9)

In a focus group discussion the point was made that in schools, people are passionate about certain elements of ESD [and can] get burnt out from their own "cause". So [sometimes it is] difficulty to get people to form a team in the school that combines all the elements of ESD, individuals feel they have already done their part. (FG6)

Schools within an inner-city context have a particular high staff turnover, with all the challenges that this entails.

Well we've talked at other times about the turnover in staff. It's an incredibly rewarding but exhausting thing to do to work in an inner city school and the stories you hear from kids and the needs that they have are just so all consuming. And because of that people who have a lot of experience in the division don't tend to apply for our positions. We tend to get new teachers – people in their first ten years. So you know that those early years are really intensive in terms of emotional support and strategic support and planning and all of that. (PR6, p. 14)

(e) More than just a **four-year focus**

The concern for ESD needs to involve a long-term vision for a sustainable world. It is not a political issue to be looked at every four years but forever. (FG5) A principal put it this way:

In terms of ESD per se, I certainly look at it as being a huge broad topic and not just something that pertains to schools. It's a whole sphere of public education and getting these . . . politicians of ours to understand that what we're trying to do is preserve some sort of a reasonable future for our children. (PR4, p. 4)

I guess another challenge would be also just the whole political issue of dealing through layers of politics. Because I mean for me to even go to Manitoba Education for Sustainable Development working group, I don't have any authority within the school division. So everything I do or say I have to get vetted by higher authorities. (PR4, p. 30)

A principal spoke to the larger view, the holistic nature of the issue:

I just see this as critical for education in the 21st century. I think sustainability the whole concept, is a huge educational tool if I can say that. We have to deal with this, the challenges around sustainability because there's so many choices that these kids are going to have to face down the road. And so in some ways I think we're –I'm looking personally for a stronger call to action to do something, but I don't really see it coming yet, and I think part of that is political, and I think it relates to the larger educational mandate that would have to come from provincially. (PR1, p. 22)

Another superintendent said it succinctly: “The problem with politicians is they look in four-year windows” (SP5, p. 15).

#### (4) **Funding**

In the interviews a number of the educators included funding for ESD programs as a challenge. Here are their insights.

##### (a) Amount needed to **fund PD on ESD issues**

A superintendent put it this way:

The challenges will still be the time that it takes to do the professional development. In fairness to us, we're funding everything. You know the grants we get from Manitoba Education, Citizenship and Youth and it's ironic because Gerald is so passionate about this and you get like a hundred dollar grant per school! Like it's not worth the time for filling out the paperwork because as I told Gerald once, I might as well write a check for thirteen schools –I'll write a check for \$13,000 myself and have them put that time into more meaningful activities. There has to be some more meat and potatoes from the higher levels of government to support the fire that we can create so quickly and then we sometimes run into a brick wall because we don't have money to release for PD and you know technology. I mean we're just getting the same \$40 per kid to fund this that we got ten years ago! But again, it's like everything else: if we take the natural model, everything is interconnected so all the departments have to be considering what's going on. It's not just put some money at the school level and it will all happen. No. (SP1, p. 12)

##### (b) Issues around **small school divisions and closing schools**

A superintendent stated:

I mean I've got a school with two huts attached which are closed and it's got a gym and four classrooms and an office, and it's got 23 students in it K-8 and if I close that school today I could take those students and ship them to another school and I wouldn't have to add any teachers, and we would as a school division immediately save a quarter of a million dollars. So if we want to talk sustainability, that makes us more sustainable in that we can use that money for some of the other things that we need to do. But what does sustainability have to

communities when you close their school? And so I really believe that's a fairly significant ethical dilemma. (SP3, p. 10-11)

Another superintendent indicates:

One of our challenges has been capacity within our organization. We've declined, we're just under eleven hundred kids now. Basically the size of a good size high school now. And so you have seventy to seventy five teachers and you know, pulled in every bloody direction, right? (SP6, p. 8)

As one superintendent outlined, the challenges of smaller rural school divisions are not only that it is expensive to run buses but there has not been enough investment in building the infrastructure for broadband to allow remote schools to remain in place and still provide students with a wide range of subjects:

No, this sustainability is more of the, I guess the sustaining finances: looking at bus routes so that students aren't going to be travelling more than an hour. Looking at trying to keep the cost down with the fluctuating fuel prices. We certainly are aware of that and we are frustrated, as I imagine a lot of people in the province are, with the lack of movement on that broadband initiative. One of the things that we are doing in the division and I think it does have a relation to sustainability, is the division has two adult education centers. And when you mentioned the sort of the distance education piece that's a big component of how we deliver adult education courses to our people. (SP4, p. 11)

### (c) Dealing with older school building

A superintendent put it this way:

Some forty years later we're at 1,850 [students]. But we're still maintaining some significant buildings and those buildings are all thirty and forty years old. So I've often wondered how does sustainability pertain to that? I mean, how do we create benefits out of older buildings? Certainly one of the benefits in sustainability is working hard to take care of what you have and we've done that. And so that certainly brought down the costs and made our schools even though you can tell that they're forty plus years old, still a very workable and very good school, but you know, the boilers in some of those schools aren't that efficient anymore. (SP3, p. 10-11)

A principal outlined it this way:

And therein lies the problem, because as we work in older buildings we see the need to revamp our buildings. Like I would love to have the capacity to recycle all the rainwater here, but to do that in a high needs community would take significant amount of money, because not only would we be recycling the water, we would have to find some way to make this secure. And that would take a significant amount of money which doesn't exist. (PR1, p. 6)

(d) Interviewees who talked about schools within an inner-city context pointed to the great challenges that an **equal (rather than equitable) funding formula** means for schools with children that have higher needs around fundamental learning conditions than students in other schools.

The needs are just nowhere near the same. So to be equitable it needs to be different. . . . Considering just the needs that we step in to meet, right? I mean I think we've come some way in the last couple years with the support of the province to being able to feed kids. We've always had breakfast programs but they need more than that. They need lunch, they need snack, they need milk! And so we're starting to get some funding, but it doesn't cover the costs at all. And then again it's kind of X amount per school. It's like well what if the school like here has 500 kids and my school had less kids? Shouldn't there be some reflection of the fact that food costs more per child? (PR6, pp. 16-17)

### **(5) Traditional / Status Quo beliefs and attitudes**

One of the challenges of any change initiative is attitude. The literature indicates that once we have sufficient attitude change then change proceeds. But not everyone changes at the same time, and there is a significant number (30%) that refuse to change.

#### **(a) Curriculum**

There was some concern expressed over the unwillingness to change attitudes toward subject disciplines in schools. ESD projects and curriculum tend to be interdisciplinary and take a more holistic approach. A superintendent described it like this:

I think one of the things that we are really thinking very hard about in education right now is the compartmentalization of things into subjects. I mean we're questioning are there such things as subjects any more in our world? And the way that a lot of curriculums have been written in the past is to compartmentalize everything into specific subjects and disciplines, and I think our world needs to break those disciplines down and to combine math with engineering, with social impact of the projects that they do and to look far more cross curriculum. So I think ESD is a perfect vehicle for doing that. I think the problem and the challenge gets even greater the older the kids get and the more they go up the grade levels. With one teacher in a classroom within a class of students they can really make those connections, but when we get into a way of structuring our school days where kids go to different teachers for different things in high school and upper middle years school, it makes those connections really very, very challenging to do. And the other thing is that the whole notion around development is also seen as –often seen as something that should be in some courses but not others. For example people would see it much more in a geography or a science class than they would let's say in a language arts class. (SP3, p. 15)

This question of how do you get people to see it as not being add-on. (PR4, p. 12)

A superintendent stated:

You know whereas traditionally in the past we've focused more on academics. I guess when I use the term 'academics' I'm thinking of it more in the context of our disciplinary silos, as opposed to a more comprehensive and integrated view of learning something that's important. It crosses a number of subject area. I mean there are some challenges that we face around that, and that's one of them. The other thing that we're working on is this whole issue of inquiry based instruction and how can we use education for sustainable development or sustainable development as a context for inquiry based instruction. (SP5, p. 8)

**(b) System**

Many of the challenges of implementing ESD curriculum in schools are systemic in nature. Like **breaking past the school organization and moving beyond the school walls and school day.**

A principal puts it this way:

So it's becoming good community members, and when we go over there and clean up that helps the community, and that also again teaches our kids about being environmental stewards and not the mess up that area, and some of our kids take that real seriously. And in fact some kids on their own, like on a weekend or something, with their parents they go out and pick up some garbage. (PR1, p. 15-16)

Or moving out into the community brings other **procedural or legal issues:**

And this is part of sometimes the sustainability problem. Okay, so we wanted to build some vegetable beds out in front of the school with raised beds to help the seniors so they wouldn't have to bend. But I ran into a bit of trouble, but there was some concerns about liability issues with growing vegetables and that kind of stuff with the raised beds. This becomes part of the problem too is you have to go through oh this person and that person and then the board, and then you've got to make sure it goes through your parent council and this that and what not, so a lot of obstacles for something that seemed like a really good idea. (PR1, p. 17)

And **behavioural issues** from community members outside the students of the school:

I've got these goof balls that show up on weekends and decide to party on top of the school and then throw their beer bottles at you know, folks driving past the school. It gets a little disconcerting to me because you've got to worry about that element of society that won't respect the greening of the community. . . . Like that's very frustrating because that's just stupid behaviour, but inevitably that's what we've got to deal with too. I've got so many tomato plants growing in this school right now, but eventually they're going to produce some tomatoes and most of these kids are not involved in our school, but they're just some of the local yokels who have dropped out of school but are in the community. I mean inevitably when they see a tomato on a plant they're going to grab that tomato. And they're not going to eat it or anything, but they're going to throw it at someone or at a vehicle. (PR1, p. 18)

Included in the systemic nature of those challenges are challenges linked to **wider community, city and provincial issues.** ESD cannot not just be concerned with school and community issues but needs to reach into all aspects of the wider society. As one principal indicated:

So it's all interconnected. It's not just that we want to educate the students in our school; we want to educate all the ones that are not in our schools. (PR1, p. 19-20)

I just see this as critical for education in the 21st century. I think sustainability the whole concept is a huge educational tool if I can say that. We have to deal with this The challenges around sustainability because there's so many choices that these kids are going to have to face down the road. And so in some ways I think I'm looking personally for a stronger call to action to do something, but I don't really see it coming yet. I think part of that is political, and I think it relates to the larger educational mandate that would have to come provincially. (PR1, p. 22)

But see, again to make this relevant it has to not only be schools, it has to translate to the government itself. And the government has to model good stewardship of its resources from relating to sustainability things. Like what are they doing about water usage –end question. And then of course you get your local businesses, and you know what about public events, like I was thinking of the folk festival that comes up and how they’re trying to find ways to have people bike in instead of using cars and stuff like that. Like those are all kinds of good ideas that start to make people think. But I think more and more events like this has to happen where there’s an effort made to point out good stewardship. So many things that are important get dumped on schools to fix. But for effective change it has to be everyone who is prepared to work at it. So I think all of our society has to recognize this need to be good environmental stewards. And I mean it involves our churches, it involves like I said government .To really affect change everyone’s really going to have to get involved. (PR1, p. 23)

One superintendent summarized this view:

In my forty years that I’ve seen –been in education in this country, I’ve seen the structures become more and more systemic barriers to children’s growth. (SP2, p. 20)

### (c) **Attitude**

One of the themes that emerged from the interviews was the challenge of changing attitudes at all levels. As one principal stated, the first attitudinal change is understanding the urgency of the ESD initiative:

The choices are: form a global partnership to care for the earth and one another, or risk the destruction of ourselves and the diversity of life. (PR1, p. 2)

An assistant superintendent stated:

I think changing attitudes and beliefs. Having people not be afraid to look at practice. I think trying to break down some barriers that teaching is an isolationist kind of thing: one teacher, twenty-five students and a classroom –to a much more collaborative model. (AS4, p. 14)

Participants in a focus group discussion expressed the attitudinal challenge as follows: ESD needs to become “the fabric of the school” (FG3). A principal put it this way:

So that’s one of the main reasons why I applied for that school but it turned out they really didn’t have a very good sense of what that meant. What it meant was is that they had a recycling program, and that they were attempting to set up some garden boxes in the back of the property. So what I tried to do at my school is I’ve tried to work on this concept of whole school sustainability, and to get everybody’s understanding of sustainability including the custodian and the secretary and the EA’s, kind of at some sort of base level. (PR4, p. 5)

An assistant superintendent stated:

For lack of a better word, but to create a more common ground where we can come together, and so school and people’s experiences in schools really I think effect that. So that is one of our challenges if we are truly to be living and listening to multiple voices that is something that challenges us for sure. (AS7, p. 9)

A consultant stated:

It's about developing awareness in people and in our children in particular. Of what's going on globally, and how they can make a difference or contribute. One of the things when I think of education for sustainability is about teaching our population about ways of making decisions that will help balance the needs of what we need as a society today, but not effecting what future generations are going to need in order to meet their needs. (CO1, p. 2)

**(6) Maintaining the Momentum of ESD.**

As one superintendent stated:

The other challenge is whenever a new initiative starts there's a challenge of keeping that momentum going. It's great, it looks good, and then who keeps it going is often a challenge in a system –I guess I should say in a system that was never designed for it. I mean the system that we use in education is an industrial model which is not really about sustainability other than production wise. (SP3, p. 14)

A consultant indicated:

It's finding a way to ignite the passion for sustainability in the kids, and providing them with information that helps them to see how they can make a difference and effect change, and how they can contribute. I think if we can do that we will have sustainable ESD within our schools. We need to provide opportunities for the students to make connections between what they're learning and their own daily practices and kinds of ways that the decisions and things that they are going to make as they grow up. Often time it's the teachers who are really the catalysts to spur this on, but I think once we get the students involved and they see the relevance to it then they will become more of the drivers of that initiative. I think in many ways if we want to sustain it we also need to provide them with a voice, so it's not just enough to ignite their passion and have them involved. They need to feel that they have a voice and that their thoughts are valued and heard. So if there is a place and a way that we can do that within our classrooms and schools and divisionally then I think that helps to sustain the ESD programs as well. I think I mentioned earlier, but wherever we can engage kids in a fun activity that's hands on, that's active we're going to have more buy in, and I also think too that it can't just be one or two adults within a building that's leading the group or leading ESD within the school. It needs to be a collaborative effort with a small group. (CO1, p. 10-11)

**(7) Need a group of committed leaders**

We need to have leaders in this area who are committed, knowledgeable, credible and believable. (PR4, p. 31)

A superintendent outlined the process:

And then our education committee is comprised of teachers and administration who are talking about ways to integrate this into of course, the teaching and learning that occurs in the schools. And so, yeah, they've each met a couple of times and they're developing strategies and sharing information from the committee level back at the school level, and then bringing information back to the committee from the school level, so... Yeah, I mean we've put together that committee structure in order to move some of these agendas forward. And so far

it seems to be working well, but we haven't really had an opportunity to evaluate the work of those committees yet because they're... they're just in their infancy. In the area of sustainable development, or in the area of professional development? (SP5, p. 9)

This includes policy directions:

We will have expectations as well around what schools are doing with this; it's integrated into our strategic plan – there are expectations for our schools to engage in what we call 'improvement strategies' around education for sustainable development, and they'll have to report back to the board as part of what they've accomplished in this area. And so that's – to have that governance piece has really been I think the necessary gel to move us forward in this area. I mean of course having the right people doing the right things helps too, and that's really been as a result of our involvement in SEDA, you know. And I think you know it's hard to separate the two because SEDA really led to the whole governance piece, but it's the people that take it and roll with it that are going to make it a success as well. So yeah, I would say that that has really been for us, the most important piece of this to this point now. (SP5, p. 10)

A principal put it this way:

And education for sustainable development committee and each school has representation on that. And really the goal of that committee has been to promote education – the education aspect of sustainable development through our division. So they meet – you know they had conversations and plan, and then those people go back to their schools and share information and bring things so... Trying to keep sustainable development at the front of people's minds, and giving them ideas about how they can bring that back into their classrooms, and some of the ways they've done that is the province has a really good website that shows all the connections with the curriculum. (PR2, p. 5)

## 5.3 Professional Development

### 5.3.1 Province

Most of teachers' professional development (PD) in Manitoba is organized at the school divisional or school level. The next section will address PD from this perspective. In this section we discuss different aspects of teacher PD in Manitoba from a province-wide perspective in terms of the legal and financial context for PD and the provincial perspective on PD by a representative from the Manitoba Teacher Society (MTS).<sup>31</sup>

The Education Administration Act of Manitoba states that a teacher is responsible for ongoing professional development, and the Public Schools Act states that teachers are entitled to at least five PD days as part of a school year (MTS, 2010). MTS and the local PD committees

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<sup>31</sup> Unless otherwise noted, the information provided in this section is based on the interview with a representative of the Manitoba Teachers' Society.

within the respective local teacher associations play a central role in coordinating of PD for teachers.

Generally, teacher PD is funded as part of a school division's funding allocation by the provincial government on a per student basis and a school division's funding through local property taxes. The decision about what and with how much specific PD gets funded lies with the school board the teacher is employed with. As one interviewee suggested, both features of this finance structure can and do lead to inequities in access to PD by teachers in different school divisions:

Right now we believe that there is sort of a conundrum in the legislation in the Educational Administration Act. Teachers are responsible for their – one of the things they're responsible for is ongoing professional development. But all the funds to provide that ongoing professional development go to the school division. So, if the teacher needs something and the school division is saying 'No, we don't have the funds, we don't have the funds for that because we're spending it on this, this, this and this', then they're not getting the ongoing professional development they need. (EA2, p. 7)

The issue here is that many school divisions contribute additional funds (from their collection of local taxation) to buffer the provincial funding and meet the PD needs of their teachers. This leads to inequity of PD funds for teachers. For example, the teachers in Pembina Trails get approximately \$800 per year allowance to spend on PD of their choice while teachers in Lakeshore (rural with low tax base) get \$100 per year for their PD selections. (EA2, Personal Communication, 12 July 2010)

Although the government provides more funding per student to rural school divisions, the interviewee argues that that does not make up for the lower tax base and the additional costs for teachers from rural areas to attend professional development sessions. .

Teachers in Winnipeg can go to a three-hour workshop, and they need a substitute for the half-day and the cost of the registration. Teachers in Northern Manitoba it . . . principals were saying, it's not worth three days to go to a three-hour workshop. And to go for three days, you think of the time that teachers are out of and principals are out of their school building, the cost of the substitutes, the cost of, if it's a principal, the acting principal stipend, the cost of accommodations, because they have a day to drive to stay overnight, they have the workshop, they stay overnight, they drive home or fly or whatever, or the cost of the flight if they are flying. (EA2, p. 6)

In response to the issue of unequal access to PD, the interviewee said:

And it's time, I think, that if we're going to look at equity of PD and equity of access to that PD, we look at how we can move some of those things outside of the perimeter, to the North, to the different rural settings. (ES2, p. 6)

The Manitoba Teachers' Society is promoting a type of professional development that considers the central features of what the literature says is effective professional development (see section II-4.1.3)<sup>32</sup>:

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<sup>32</sup> See also the descriptions of effective professional development in MTS (2009a, 2009b).

Which goes back to our philosophy that PD can't just be a one time, one shot event. That's great, it's a start – but you've got to carry that on throughout the year to make it meaningful and to make a difference. (EA2, p. 4)

We truly believe that the one shot, one day, big speaker that school divisions pay ten thousand dollars to bring in is not effective unless you build people up to, you do activities and you do PD before they come, and then after that speaker has been there, you continue the process. So we talk about 'The speaker came and went. Now what?' So, that's the latest thing we've been working on for those divisions where that's the way that it seems to be the divisions are spending that PD fund that we were talking about. 'The speaker came and then went. Now what can they be doing?' And some divisions, some associations, what they've been doing is they've been setting up like a NING – a social network or they'll be doing things on their website to get people so that they are – if they're interested, prepared before the speaker comes. They'll put articles on there or books, or there are videos or anything that they can do so that they know what the speaker is about. Then after, what they're recommending, after the speaker leaves is that at staff meetings there's maybe a portion of maybe every staff meeting that's dedicated to responding and talking about 'What have you done as a result of that speaker?', 'What are the key things that we could try in our school that would make a difference?' And then reflection time, and then the next staff meeting coming back and, you know, 'What did you try?', 'What worked, what didn't?' And that's what we truly believe is effective is looking at if you have a speaker or whatever the – if there is a one day event, then having some time to reflect on 'What were the key things that you think you can do as a result of that?', 'What are some actions and changes to practices as a result of that?', Go back, try them, meet together, reflect, talk amongst a small group – not a big, big group because if you get too big it loses, it gets watered down and people don't have the opportunity for individual reflection and discussion. But talk about what you've done, what you've tried, what's worked, what hasn't, reflect on it. And then where are you going to go to the next time, and have at least two or three sessions throughout the year following the big speaker in September so that there is some follow up and time for reflection and practice and all of that. (EA2, pp. 11-12)

### **5.3.2 School Divisions and Schools**

Professional Development (PD) is a major part of an administrator's role in the school division and school. One superintendent discussed the challenge this way:

I think one of the big challenges in professional development, that we do, that we participate in, the hundreds of thousands of dollars that we spend in professional development is how do we make that professional development sustainable so that it continues that the wave continues to move forward for more and more people. If we teach one person, how does that one person get time, support, in order to teach others and they in fact in turn teach others. (SP3, p. 23)

There is a movement by school divisions to develop a Professional Learning Communities model for PD. No specific model was mentioned but participants made reference to this form of collegial professional development. It is also understood that all school divisions are not at the same place. One Superintendent stated:

We're just starting to get out of the gate on that one; some schools are further along than others. But we're trying to provide a little more time. In fact this year, three half-days for professional learning communities within schools. (AS2, p. 11)

The following were the main characteristics mentioned by the interviewees for working toward effective PD.

**(1) Administrators and Principals as Curriculum or Instructional Leaders**

This is a challenge and on-going process. As one assistant superintendent stated:

I think a consistent challenge is to work with the leaders in the school division, and when we talk about principals and vice principals being instructional leaders, very often they don't get enough time to be an instructional leader as they are put out fires in their buildings. (AS4, p. 14)

A superintendent describes the process of changing how professional development is done as follows:

We're in the midst of what I think is a cultural shift. Our school division I think has been a top down school division for quite awhile and you know, I really believe that we're very good administrators and managers in the school division. What we've started talking about, what we've challenged our principals on is what does it mean to be an educational leader? And that's been a difficult shift, and that's not happening easily because administration and management can take all of the time. And educational leadership is a different kind of conversation. There is a shift. (SP4, p. 21)

As was stated in a focus group, administrators need to create and maintain a safe climate for participation in something where we don't know for sure where the school is going. (FG2)

**(2) Teachers need to be in charge of the process and content** of their professional development. The fact that professional development must not be top down but collaborative was emphasized in focus group discussions (FG3)

One assistant superintendent outlined the challenges of more traditional styles of PD.

Certainly the follow up, and I think that we're all aware of the phenomenon of the sage on the stage blowing into town and giving their dog and pony show and then out they go. And whatever good message was given is probably lost because there hasn't been the follow-up on that. (AS5, p. 17)

As was described during the course of the interviews, teachers also need time to meet, discuss and plan in company of other teachers with similar interests. During a focus interview with several teachers who are participating in an intra-school project focused on diversity it was indicated:

And to me those are the kinds of things that bring schools, could bring other schools together which you've done under the [focus of] diversity. So it seems to me that we need to work towards how do we integrate that [the project] into what we do in our school and so it becomes part of that. . . . And so that's in fact where these kinds of professional development projects for sustainability come from. Particularly as teachers you know how lonely it can be

when you work by yourself. Once you get somebody helping you it seems [like] less even though you're doing more. (FG1, p. 27)

One assistant superintendent stated:

I think changing attitudes and beliefs and having people not be afraid to look at practice. I think trying to break down some barriers that teaching is an isolationist kind of thing: one teacher, twenty-five students and a classroom –[and move] to a much more collaborative model. (AS4, p. 14)

A superintendent indicated it needs to be a built in process:

We're trying really hard to move our division towards teachers spending time together because we know that is the best PD. (SP3, p. 17)

What we're trying to do is to set it up so that our teachers spend time together where they have a chance to share ideas and information and learn together and then go back into the classroom, use it and then come back and share what they've learnt from that experience. (SP3, p. 19)

So what we're finding is that any time we move towards a kind of for lack of a better term, a mini-course where a group of teachers get together on a somewhat regular basis, gain some trust, gain some confidence, are kind of facing the same issues and challenges and can share some of their successes with each other, we're finding a much higher level of success in terms of the implementation of what they're learning than we would in other situations. (SP3, p. 21)

Another assistant superintendent concluded:

We've probably built some relatively strong networking between teachers as well from school to school. So that's been a real advantage from our PD. So you're not in your classroom alone any longer. (AS5, p. 16)

As part of this is the teacher's responsibility for their development as an assistant superintendent indicated:

There is an inherent responsibility to continually consider the inter-relationships between our thinking, our judgments and our actions. And a central assumption of these policy statements is the belief that teachers themselves will improve the practice of teaching, and that teachers will assume responsibility for improving the profession. And we go out and say that publically."

"So the whole idea of symposium is the one that really supports that reconceptualization of the relationship between theory and practice, and practitioners and researchers as – and the university partnership, which I think you're familiar with so I'm not highlighting that one. But the symposium series really is about the idea of creating and sustaining a critical discourse. So our purposes there really are about encouraging critical reflection and discourse on education, facilitating that interaction and exchange between scholars, stimulating local interaction and exchange on critical educational issues, and to inform the practice of education and provide a basis for critique. (AS7, p. 18)

Included in this process is action research projects. (AS7, p. 19)

As well, one assistant superintendent also observed that we need to provide PD for all members of the education team:

I think we all have responsibility within that. It's not only professional development for teachers, so each of us have some responsibility with various employee groups as well, right? So this isn't just a conversation with teachers, this is one with professionals and secretaries and library technicians and custodians and everybody else. And the board office staff, and the maintenance staff. (AS7, p. 15)

and see the link to pre-service teacher education:

I think that PD has limitations, and I prefer to think about it in terms of teacher education. I don't see teacher education as always the responsibility of a university or a post secondary organization. (AS7, p.11)

Also:

That's what I think the university partnership, our collaborative project together is about. That teacher education doesn't end when we graduate, and that we inform each other, and that it isn't this idea of preservice and inservice and all the language that we use to divide. (AS7, p. 23)

We also have a structure in place that we refer to as our professional learning networks or communities – sometimes we call them PLN's or PLC's – professional learning opportunities, PLO's, but they often – and generally do address the divisional priorities, and they're currently driven by teachers around a particular curricular area or philosophy or strategy or topic. (CO1, p.13-14)

One of the things we've found in terms of best practices is that whenever we can provide opportunities for teachers to get together to talk to each other, you know, with some focused questions or some guiding topics – and when they can share ideas – they seem to sort of take away from those sessions a renewed sense of purpose around whatever it was that the topic was for that day, and certainly around ESD if that was what we were dealing with. We've also discovered that for best practice it's good to start with teachers who have a definite passion in the area. So if you're providing a PD session, you're going to have the teachers that are the most interested in that area usually sign up. And then once they have come and been part of the PD, have them involved in planning future PD for colleagues, getting ideas from them. Certainly it's important that we explore the philosophy as a group when we're having a PD session, but we also need to then look at what is the practicality of it and how can we put it into action. And realizing that you know, you can't force change and so what is it that we can put in place or offer through PD that will help move that initiative along? And looking at offering PD specifically around ESD for teachers and we want them to be able to perhaps take back something to their classrooms that they can then be sharing with their students and igniting an activity or an idea with their class, and it's something that they are able to do. (CO1, p. 11)

Another principal put it this way:

But our model for our PD in our school is going to be a learning conversation model with them having meeting together based a little bit of identified needs. They'll be grouped as to what they would like to work on in six-week blocks throughout the year. So that consultant would hopefully help facilitate that process depending on the school set. (PR5, p. 22)

And a colleague added:

I like what you said about learning versus content. They're all [the consultants] coming from a mandate of I am responsible for the quality of instruction in blank in this division. How am I going to do that? And so you think about offering lots of stuff about the topic. But it doesn't really change the learning. (PR6, p. 23)

(3) PD needs to be **ongoing, long-term and focused**. This need to make the focus of PD more sustainable, more meaningful for making changes to teaching and learning, is outlined by a superintendent:

We always have something going on that's related to an aspect of human development that is contained within the concept of sustainability. In other words we're moving beyond the one shot sessions, like make and take kind of things to really reaching inside of the professionals and their thinking and building that important human conversation. (SP2, p. 13)

An assistant superintendent added the need for focus:

So it's been a consistent focus in the division over time, and what we've tried to do is narrow down what we're focusing on. I think we have in education been guilty of trying to focus on absolutely everything, and it just doesn't work if you really want to improve things. It's not an event; it's ongoing professional learning over time, which we think is really important. We have moved away from one-shot events in PD. For quite a while we've done that. We tend to look at PD now in a long term view, try to make it embedded at the school level, at the classroom level. (AS4, p. 11-12)

This can be assisted by PD steering committees representing all levels in the division and at schools to direct funding and topics. As indicated by the interviewees. These committees provide the leadership and direction. As well they act as the link between groups and act as feedback loops that inform the participants of the big picture of PD in the division and provide information for future planning and direction. As well, all of the PD is tied into the division / school / teacher plans. One assistant superintendent stated it this way:

So we have a steering committee at the divisional level that takes a look at what the day or the half day is going to look like, and then we scaffold the next learning opportunity for our teachers on top of what they've already received and what they've been able to take back and practice. And then of course we have feedback loops and then 'How is that working for you? Do you need anymore information or any more kind of experiences in that area that you're toying with in your classrooms?' So it just kind of keeps building and building and building. So the follow up is when I talk about those teams, those school teams, the follow up has been built in to the actual PD plan if you will. Now at the school level more and more of our schools are developing a professional learning community. So they have PLC's, so they

might have four committees, and again they're tied into the goals of the school and the priorities of the school division that will work as a committee in the school and kind of perpetuate some of those ideas and bring it to the staff. There's always that loop that's happening. (AS5, p. 17-18)

Two superintendents stated it this way:

We've actually formed two committees. One on the facilities and operation side of things and one on the education side, and the jury is still out as to whether or not we need to integrate those committees better. But that was our initial plan was to pull a committee together for facilities and operations and that would our facilities and operations people and it also has representatives from our own administration around what we can do on that side of things. Then our education committee is comprised of teachers and administration who are talking about ways to integrate this into of course, the teaching and learning that occurs in the schools. So they've each met a couple of times and they're developing strategies and sharing information from the committee level back at the school level, and then bringing information back to the committee from the school level. I mean we've put together that committee structure in order to move some of these agendas forward. So far it seems to be working well, but we haven't really had an opportunity to evaluate the work of those committees yet because they're... they're just in their infancy. (SP5, p. 9)

Actually we have a divisional professional development committee. One for the teachers and we also have a professional development committee for the educational assistants and there is also a professional development committee for bus drivers. The different committees will meet as often as they need to deal with professional development issues for that particular group. But those division-wide groups will organize activities, and the teachers in particular – that's the one that I'm involved with, we'll look at what are the things that we want to do, or need to do, on those two division PD days. (SP4, p. 16)

Interviewees made also a link between professional development and the yearly goals, strategic plan, and action initiatives of the division:

Growth plans with our professional growth model and the teacher performance assessment kind of model teachers write up a personal professional growth plan every year and it is tied into what it is the division and the school are looking at as priorities. (AS5, p. 17-18)

As one superintendent added, there is a need to align teacher growth plans and school plans with divisional and provincial priorities:

Individual teachers that have growth plans and you know, they will align their PD with their growth plans. So that's really how the funds are administered and the role of the PD committee is there. (SP5, p. 17)

We also believe that teachers need to be identifying their own professional questions as well, and that we be able to support those in a variety of ways whether they be through participation in conferences, in workshops, in educational leaves that they can apply for to our educational leave committee. (AS7, p. 10)

One assistant superintendent concluded:

This isn't a strategy, this is a way of living. This is a way of being in the division. It's that if we say we are respectful, then are we looking at our practices and demonstrating that particular respect, respect of profession, respect of individual, respect of community. Part of that is recognizing that we are there to support the professional questions – and that doesn't mean that we abdicate our responsibilities, because I think that we too have a voice in identifying what our professional questions are, or representing divisionally what priorities are or needs are as the case may be. It's a way of being. Professional development is not some specific strategies, it's a way of living your life within a school and seeing that as fundamental to the work you do! (AS7, p. 21)

One final comment, by a participant in a focus group, seems to encapsulate the movement toward Professional Learning Communities:

See what happens when you put teachers together? Yes, that's the most powerful PD; it's way better than those things that we pay for over one day. (FG1, p. 20)

#### (4) The Use of Divisional Curriculum Consultants

Curriculum consultants tend to be organized around traditional subject areas such as mathematics, social studies, language arts or science. However, smaller divisions tend to organize around initiatives such as technology, literacy or assessment. At least two divisions had consultants dedicated to ESD.

### 5.3.3 Indicators of Progress

Again, the **SEdA yearly conference** and follow-up sessions were often mentioned as an excellent PD initiative and also were cited as the seed activity for multiple school division initiatives. The other highlights of effective PD had the following characteristics:

(1) **Teacher directed.** Many of the interviewees used the term Professional Learning Community to describe the teacher directed PD in their school division they were describing. An assistant superintendent indicated:

I think teachers talking to teachers is really, you know, one of the best PD pieces and so that's been organized. And then any time we can follow up with a division-wide in-service where for example if we bring someone in to talk about layered curriculum and then do a number of follow-up activities around layered curriculum so that it's actually a practice that is you know, happening in the school and in the classrooms, and sometimes we'll work at that for two or three years with different groups, so the follow up has been extremely successful as well. (AS1, p. 12)

Another states:

We also in the last few years have been advocating for and supporting the whole concept of professional learning communities. And we provide funding for professional learning communities through grants, and that provides relief time for people to get together –

teachers to get together and do joint planning or you know, analysis of student assessment data or whatever it might be. Whatever the focus is of their PLC, and then principals also build in PLC time within their time tables for teachers within their school. So these PLC could be school based, or they could be division based depending on their focus. And we've spent a fair amount of time trying to develop and foster those kinds of communities as well. (SP5, p. 17)

The administrator's view was outlined by an assistant superintendent:

I think another challenge is teachers needs time to get together to plan and think this through and to evaluate and to work consistently over time. So I think regularly scheduling this kind of time into schools for planning is a challenge and I think we've started to do some really good work in our division in that regard, and where we have –two of our schools in particular released the kids at 2:30 on one day a week and that time is for teachers to get together to do this kind of work, to look at how well our students are doing, student engagement, student achievement, all those kinds of things. (AS4, p. 8)

A superintendent puts it this way

It's quite okay for you as a leader to learn with your staff about assessment, to continue to push forward, to gain greater understanding and the way in which you do that is to have conversations, have some trial and error in the classroom, explain and share what you've learnt with others and continue to move forward. (SP3, p. 19)

Many of the participants of the focus groups also indicated the benefits of teacher reflection using journaling and the focus of common professional readings. All helped teachers gain perspective of their own teaching. In both groups the use of documentation of student learning was an insight into teaching practice (FG2 and FG3).

As a superintendent indicates, many voices need to be heard:

I think that we have a very successful approach to PD because we engage as many people as possible in the planning and its comprehensive in the fact that we're able to address divisional school based and personal PD priorities in that strategy. (SP5, p. 21)

And you know, administrators and teachers realize that. Some of the best professional development is when the teachers get together within the schools on a regular basis and talk about things like careers, or mathematics, or social studies, education, or whatever the case might be. That's where some of the best professional development is. (SP4, p. 23)

Well I think one of the successes is as I mentioned in number one, sort of the structure of our sort of funding support for the teachers and the schools. And yes, the teachers would like to have more money. Right, they'd like to be able to go to more things but what I have said to the trustees and also to the division PD committees is that one of the things that I have to pay attention to is teacher time out of the classroom. That they are teachers out of the classroom and that you know, PD is a great thing to participate in but you can't be out of the classroom two months out of the year sort of thing. So the successes I think would be the structure, and also one of the big success for us I think is the flexibility that the board and senior administration, the flexibility that schools are allowed. And teachers are allowed in their

professional development opportunities. It's not restricted just to the five days. As I mentioned, schools are allowed to organize like, special area group meetings or grade group meetings within their buildings on certain topics or multiple topics. And if it's related to a division initiative and I've got some funds such as literacy with ICT I'll support that. So the flexibility of the PD program I think is very important. (SP4, p. 24)

(2) PD with a consistent and persistent focus over time has resulted in changes in teaching and learning. An assistant superintendent puts it this way:

So it's been a consistent focus in the division over time, and what we've tried to do is narrow down what we're focusing on. I think we have in education been guilty of trying to focus on absolutely everything, and it just doesn't work if you really want to improve things. (AS4, p. 11)

Another indicates:

So we have a steering committee at the divisional level that takes a look at what the day or the half day is going to look like, and then we scaffold the next learning opportunity for our teachers on top of what they've already received and what they've been able to take back and practice. And then of course we have feedback loops and then "how is that working for you? Do you need any more information or any more kind of experiences in that area that you're toying with in your classrooms?" So it just kind of keeps building and building and building. So the follow up is when I talk about those teams, those school teams, the follow up has been built in to the actual PD plan if you will. (AS5, p. 17)

During our focus group discussions with the seven research projects the participants were appreciative of having a forum to exchange and share ideas with other educators from different school divisions and organizations. The experiences with those teachers and administrators from UNESCO schools pointed to the benefits of intra-school collaborations and networking. They also emphasized the need for built in time and place for teachers to meet on a regular basis. (FG2, FG3, FG6, FG7)

One principal identified the need for PD to be focused, relevant and meaningful:

I think the successes have definitely been the kind of PD that we've been doing at our school, and I'll say that even though I'm the person who has been doing the PD. And making things really meaningful and relevant to people, and getting people to understand that there is a bigger picture here, and that we're really trying to live purposeful, meaningful, sustainable lives, and people are beginning to get that message. (PR4, p. 27)

Another indicated the need to really focus on the learning not just the teaching:

I think it goes back to what we were talking about with these ongoing series, the job embedded or the action research. Choose something that you're going to focus on and really look at the change in student learning. There is a lot of fear teachers have that, What if nobody's learning in my classroom? Like what if somebody finds that out? What if they're not moving as fast as they could? What if I say that I don't know how to teach multiplication and the world falls apart? Instead of saying I don't know how to teach it effectively to this

group of kids or I don't know how to teach it to kids who can't add. What am I supposed to do? And articulating that and supporting each other through it instead of just asking questions like, Did you teach your unit? [Instead] going deeper and actually talking about individual students. (PR6, p. 25)

(3) In a few divisions the use of **special designated consultants as part of a central office team** was highlighted. A superintendent states:

We have a full time specialist. That person then really just moves around to the schools and helps out with any of their PD and works out with teams of teachers and teacher individually and principals and support staff and myself and the associates who can discuss it when we go on school visits with principals. I've been in education a long time and I've been through the one offs and I've seen, I've seen the damage and I've seen the uselessness of that approach. And I'm hoping I'm in education long enough to see us turn the corner and truly look at education as the process of human development. (SP2, p. 18)

(4) A **group of committed educators**, which can include teachers, school based administrators, and central office personnel, [complete sentence needed]. As one principal described the process:

So I mean I see those as being the successes –this district ESD committee and survey, and the movement we've had in the thinking in the district, that's a huge success. Even in terms of the... divisional committees I see it as being a huge success this year. This whole ball got rolling a lot faster because I was made aware through some coursework of UNESCO conference. I got the director interested in that. We went together, and that really changed her thinking and understanding on ESD and it brought it to a whole new level. It's been huge that we've moved ESD on to the agenda. The fact it's becoming a priority for the school division, to me that is a huge success. (PR4, p. 28)

We need to have leaders in this area who are committed, knowledgeable, credible and believable. (PR4, p. 31)

(5) Some of the interviewees outlined how the **creative use of time** is one way to deal with the time constraints. As one superintendent stated:

There's something I forgot to tell you that is critically important, we've taken some of our school-based PD days and chopped them up, if I can use that terminology and we have early dismissal and we do that eight times a year, and so it allows for some continuity in PD programming at the school level. Another thing that I should have mentioned that we do regarding PD in our school division is we have run a summer institute for the last seven years. And that's two days in the week before school starts, and we provide two days of workshops on a variety of different topics, usually topics that are a blend of recommendations from teachers based on [division-wide] surveys. And what we do is we provide two days workshops and we give teachers a personal leave day – one personal leave day in exchange. (SP5, pp. 19-20-21)

And then we also have – every month we have an early dismissal, so two of our PD days that are allotted are broken up into monthly early dismissals where the students leave and the teachers get to work on professional learning groups. And what we do for those days is that the teachers will identify in the fall what we want to work on for that year. So it could be a

staff endeavour – one year we were focused on the curriculum and we went through the six plus one traits to build capacity. This year teachers worked as grade groups. So this way it gets, gives teachers time to get together as a group and learn from each other, plan with each other and develop capacity around things that they've identified as areas that they want to further develop their capacity. (PR2, pp. 18-19)

### 5.3.4 Current Challenges

(1) Many of the challenges to professional development in implementing and sustaining an ESD focus in schools is in fact the need for educators to take an intentional approach to ESD. There is a need to see ESD as **urgent and foundational** to what we do in schools. It has to involve more than a few individual teachers and administrators. As a principal indicated:

Well, therein lies the problem because I really believe right now a lot of this becomes the responsibility of the personal passion of individual teacher. (PR1, p. 5)

and as a superintendent indicates :

They have some leaders on staff that have spent quite a bit of time outside of the teaching in terms of sustainability and thinking about that, and so I would see them as the leading school in our division. (SP3, p. 6)

As well a superintendent said “the systemic barriers we have put in place in our own mindsets about things, and our lack of comfort with change” (SP2, p. 10) need to be addressed in order that PD can proceed.

Part of this challenge is that some early advocates will be marginalized and perceived as odd. One principal put it this way:

I think some of the challenges are, I mean I'm so comfortable with the people in my building and even within the parent community that they will accept this message [ESD], and even within my group of whatever it is, thirty or forty administrators in my district, they either accept the message or think 'oh well that's so and so he's crazy and harmless'. (PR4, p. 27)

It will be a challenge to change the direction of education and its traditional goals as ESD asks for different perspectives than the widespread current perspectives (see sections II-4.4 and II-4.5).

(2) Another challenge lies in the **time** needed to develop educators. Not just time to present the ideas and concepts but time for teachers to talk with each other and try out strategies and lessons in classrooms and to collaboratively and critically reflect on that in a 'professional learning community'. As a superintendent indicated:

And even though I agree with the philosophy, we are a little bit behind in still making it manageable for our teachers sometimes because we just haven't given as much professional development time or teaching to our teachers as they might need. That comes with the fact that every student is different, so every student is a new learning opportunity. And I think another challenge is getting past seeing the whole notion of sustainable development in living as something extra. (SP3, p. 14)

As one superintendent states:

I wish I would have some more time to give to schools for staffing and development of PLC, school based PLC's. Some schools are able to do that more effectively than others because, you know, there is economy to scale on those kinds of things, but you know, we've had very positive feedback from schools that have been able to do that in a structured way and teachers love the opportunity to get together with their colleagues. It was really one of the initial strategies we put in place in order to sort of develop the culture of PLCs, it's been in place for about four years now. But you know, it's only eight times during the year. It's just not enough. I mean eight times is better than none of course. It's better if it's built into people's time tables. So they have an opportunity to maybe get together weekly. I mean that's ideal, right? So we'll keep plugging away. (SP5, p. 22)

An assistant superintendent added to the time challenge the fact that not everyone sees PD in the same light, from the same perspective:

The educational dialogue is fundamental. It is fundamental in creating spaces for that to occur. It's the challenge of creating the space, of finding the time and that's at school level and divisional level, and bringing people from different schools together and people from the community, and so that would be I would say our greatest challenge. I mean it's exciting and it's part of what the work is, but because education is a moral endeavour so to speak, it is contextual and it is contestable, so are notions of how we get better. So that different people have different ideas of what PD is, and that is one of the challenges as well, is that everyone has their ideas of how they get better. So there are teachers if they see themselves as technicians who think that providing them with skill based strategies at a one day workshop are what improves their practice, and so that's what they are looking for. And all that goes in between. So I would say that is also a challenge. (AS7, p. 22)

(3) More time to work on PD will also require **funding** necessary to release teachers for PD to avoid the burning out of teachers and administrators who are trying to change a system while it is in full operation. It takes some dedicated educators who are willing to put in the extra time and effort to implement ESD as an ongoing and permanent part of the educational program in Manitoba. As a superintendent indicated:

How much priority do we give it based on the other demands that are part of the system. I mean the educational system right now has some significant demands on it. One of the demands that have come is the new way in which school divisions have a financial accounting. They are now doing their accounting in the way many other businesses are so it's a much more accurate but much more time consuming way of doing the accounting, and so that's part of what's going on there. I mean I don't want to complain about the funding because the funding is what it is, but the other thing that's happening in the school itself is the amount of work that teachers are required to do in terms of individualized kind of instruction and inclusion and even though I agree with the philosophy, we are a little bit behind in still

making it manageable for our teachers sometimes because we just haven't given as much professional development time or teaching to our teachers as they might need. That comes with the fact that every student is different, so every student is a new learning opportunity. (SP3, p. 14)

And another adds:

Well one of the challenges I've identified for teachers is time outside of the classroom. Another challenge is time and funding to participate in activities that we can't offer in the division but are offered say in Winnipeg. So travel time and the cost to the teacher and the cost to the division if you're paying mileage, because if we pay mileage at division rate to go to Winnipeg and back that's \$200. So that's a big chunk of the PD budget for an individual. (SP4, p. 25)

One assistant superintendent also suggested that the funding inequities are a challenge:

Our economic circumstances in our particular community and the funding inequities that exist are also significant challenges to us. And that's something that we are constantly working now. (AS7, p.10)

(4) One of the challenges identified was that sometimes professional development **efforts are disjointed**. There may be effective and exciting PD at schools or at the individual level, but the communication and the focus are not division-wide and can lead to duplication of efforts and loss of mutual support and knowledge exchange. As a principal stated:

So in a lot of ways the PD was very disjointed, and the teachers from my school told me that they didn't come away from those four half days with anything concrete to bring to the classroom. (PR4, p. 19)

#### (5) **The Need for ESD Consultants at the School Division Level**

Several interviewees indicated the need for an ESD consultant to lead the PD and help teachers keep up to date with the complex and ever changing world of living sustainably. A principal stated:

I mean I was totally overwhelmed by it. One of the things from the divisional committee was is that it is very obvious that in our school division we need either a consultant or a director. Working in ESD, which I'm also writing a proposal to the school division about. And somebody who can filter this and direct it to people in a meaningful way so they aren't just totally overwhelmed. But I mean probably that's one of the most – the greatest challenges with this particular material, is firstly having a look at it to see whether it's good quality material, and then secondly trying to give it to the teachers so that they can access it without looking and thinking 'oh my God [the principal] is sending us something else again!' (PR4, p. 12)

Another principal said:

And therein lies the biggest challenge educationally. It's almost like you need a sustainability person in every school division that's feeding information on a daily basis to their teachers, because sometimes teachers don't have time to research and you kind of need somebody I think to disturb people a little bit about some of those sustainability realities. (PR1, p. 9)

A school consultant exemplifies the challenge of addressing this need:

I know [an administrator] had actually gone to the senior administration a few years back and proposed you know, having a position that was – like for the school division in –like just a consultant to help things going around, in all of the schools, and she felt that she could get enough grant money to even cover her salary so it wouldn't cost them anything, but they said no to that. (CO2, p. 15)

## 5.4 Pre-Service Teacher Education

This section is based on data drawn from on-line information posted during the academic year 2009-2010 on the websites of the faculties of education at all Manitoba Universities: University of Manitoba and its college Collège universitaire de Saint Boniface, University of Winnipeg, Brandon University, and the University College of the North.<sup>33</sup> In addition we drew from data from individual interviews with nine faculty members. We interviewed faculty administrators (deans or associate deans) and non-administrative faculty members. In all but one case, we interviewed one administrator and one non-administrative faculty member from each university. In one case we interviewed only a faculty administrator. In all but one case, the non-administrative faculty members saw their teaching and / or research work directly involved with education for sustainability; in one case, the faculty members themselves saw him- or herself not directly involved with the issue of sustainability but was indeed if we apply the wider notion of sustainability outlined in section II-3.1. Because of the small sample size for each faculty, a generalization for the larger body of faculty members is, of course, not possible. However, because of the selection criteria for the interviewees, a good sense of the perspectives of those who are in leadership positions or engaged in education for sustainability in their respective pre-service teacher education program can be gleaned from the data.

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<sup>33</sup> See <http://umanitoba.ca/faculties/education/prospective/bached.shtml>, <http://www.cusb.info/programmes/faculty-education.php>, [http://education.uwinnipeg.ca/future\\_students/programs.html](http://education.uwinnipeg.ca/future_students/programs.html), <http://www2.brandonu.ca/Academic/Education>, [https://www.ucn.ca/ics/Programs/Degree\\_Programs/Bachelor\\_of\\_Education](https://www.ucn.ca/ics/Programs/Degree_Programs/Bachelor_of_Education)

We have only included faculties of education. Red River College in Winnipeg (<http://www.rrc.mb.ca>) provides programs to become a business, technology, industrial arts, or technical vocational teacher, however, these programs are joint programs with the pre-service teacher education program of the University of Winnipeg.

### 5.4.1 Conceptualizing Education for Sustainability

One area we inquired into in the interviews was the interviewees' conceptualization of education for sustainability and what this conceptualization means for teachers. The analysis of the data led to several observations.

(1) Not surprisingly, those interviewees who have been involved with education for sustainability in some form made reference to conceptualizations of education for sustainability that are closely linked to the tradition of education for sustainability, like the Brundtland Commission report (World Commission on Environment and Development, 1987), David Orr's characterization of what education is for (Orr, 1994), and the conceptualization of "Education for Sustainable Development" (ESD) by Manitoba Education and Training (2000).

Most interviewees emphasized also the interdependence of the different aspects of sustainability discussed in section II-3.1, particularly the connection between the economy and the environment. However, with regard to this particular connection, there was a difference in principle rather than degree between two perspectives on this relationship. While most interviewees who discussed the link saw the need for economic practice to be considerate of its impact on the natural environment – also because of its economic implications – some interviewees saw a conflict in principle between the current *economic approach* and the concern for the natural environment. The difference is illustrated in the following two quotes:

I mean if we can just look at the example of the oil spill in the Gulf right now, it's a perfect example of that where the results of that are going to be happening for years to come, and they're going to be creating huge problems for sustaining the social wellbeing and for sustaining the economy in that particular part of the world. So if you're a fisherman and you're dependent upon fish for your livelihood, that may be gone now, and it may be gone for a significant period of time. And so there is a huge interdependence there, there was no attention paid to that interdependence. Okay, so we depend upon the environment and in turn the environment depends on us. (FM4, p. 1)

If you talk about sustainability, and the province does all the time about, you know, economic growth, you know. Is economic growth sustainable? Well, it may in fact be, well, for another fifty years or a hundred years, but at some point, you know, our insatiable appetite will run us out of resources. So, you know, when we talk about economic sustainability or the sustainability of specific enterprises within the economy, you have to wonder whether we are using the right language. (FM8, 2:10)

One interviewee, someone with a very strong commitment to education for sustainability, illustrates the interdependence between the consumer economy in the developed world and its ecological and social implications in other parts of the world, exemplifying the kind of systems-thinking discussed in section II-3.2:

Making students environmentally conscious, but also have social consciousness. And by that I mean being aware that every choice they make has repercussions in other countries beyond the one they are living in. . . . [Examples:] If you look at the things that they [students] are using, like laptops, a lot of them now have notebooks, almost every child I know has a cell phone and they also, many of them have digital cameras if a digital camera is not part of their cell phone. . . . I think what they don't realize is, what's happening to these [devices]. . . . If

you look at some of the work that's being done by people that are tracking back the resources used to develop this sophisticated technology you find that a lot of the waste is going to underdeveloped countries. . . . They [students] would understand what we are doing to the rest of the world. . . . I don't think many people think about that when they decide to get a flat screen TV. What's going to happen to the one they have? (FM2, 3:30)

(2) Not surprising, in most cases the focus that an interviewee had on education for sustainability was in line with the particular focus characterized by his / her professional engagement. For instance, one interviewee's focus of professional work lies in the area of the socio-cultural aspect of sustainability, so the examples provided and issues raised came from that area. Only one interviewee mentioned a link between sustainable living and physical health and well-being. With the exception of the interviewee with the professional focus on the socio-cultural aspect of sustainable living, none of the interviewees linked sustainability explicitly to cultural matters or to the issue of poverty.

As mentioned above, most interviewees saw interdependence between the different aspects of human life that are relevant to sustainable living. However, for most interviewees, the focus on the environmental aspect of sustainability was the most prominent one. For some this became clear through the examples they provided to illustrate their conceptualization of education for sustainability and to illustrate what teachers could do to address education for sustainability. Reference to recycling was one of the most single examples provided. For another group of interviewees the preference given to the natural environment as the main concern in their concern for sustainability was linked to their conceptualization of the problem of sustainability, namely primarily as a problem of a sustainable natural environment with the argument that without a sustainable natural environment nothing else would matter:

Sustainability has to be in terms, in my worldview, it has nothing to do with economics or nationalities or other worldviews. It has everything to do with the sustainability of, you know, our water, and our soil, and our seas and our air, and those things. So, I think, everything has to be translated into those terms. (FM8, 3:50)

(3) Interviewees were asked about the qualities that teacher would need to develop in teacher education programs or have when teaching schools in order to promote education for sustainability. Overall, the interviewees did not articulate a clear picture of the attitudes, skills, and other qualities for teachers that, for instance, their teacher education program could aim for. One interviewee said:

We need to understand what it is we are trying to sustain. . . . You cannot start something without having the end in mind. And if the end is a society that is, you know, neutral in terms of its impact on the environment and the soil and, you know, air, water and soil, I think it leads you to a different conclusion about what changes we have to make to get there. (FM8, 2:45)

While the interviewees did not have a clear end in mind, all did have some ideas about what teacher education institutions could do to address education for sustainability in their pre-service teacher education program. We will report on those ideas below.

Noteworthy is that in two cases, interviewees emphasized explicitly that education for sustainability is less about developing understanding of the content in a subject area called

“sustainability” but rather about developing students’ ability to think critically about the state of affairs in their immediate and world context.

I think the more important thing goes probably to the interest in and the ability of people, our students eventually to ask the right questions, demand the right answers, you know. (FM2, 5:50)

I relate ESD to thinking, period. (FM8, 12:33)

We need to get up to speed before it is too late for these kids that are going to be confronting things that we can’t even imagine. So, how do you prepare them for that? Critical thinking, you know, looking at systems thinking. (FM2, 54:50)

#### 5.4.2 Pre-Service Teacher Education Programs

Another area that we explored in the interviews concerned the role of education for sustainability in the respective pre-service teacher education programs an interviewee was involved with. With two exceptions, there are no standalone courses offered in any of the pre-service teacher education programs that focus primarily on preparing teacher candidates for education for sustainability. The first exception is an *elective* course entitled “Teaching Sustainable Development” in both the integrated and the after-degree pre-service teacher education programs of the University College of the North. The second exception is an alternative practicum placement in Costa Rica that students in the pre-service teacher education program at the University of Winnipeg can elect to take and that prepares teacher candidates for a placement in schools in Costa Rica in which a central focus of education is education for sustainability with a stronger focus on the natural environment strand. Students who select this alternative practicum are prepared for the cultural context of teaching and living in Costa Rica and for teaching lessons that involved a focus on the natural environment.

While there are no standalone courses primarily focused on preparing teacher candidates for education for sustainability in the other pre-service teacher education programs, a number of interviewees, particularly the faculty administrators, pointed out that they could see the possibility that or knew of specific cases where individual course instructors have build into the course they teach aspects of the preparation of teacher candidates for education for sustainability. Similarly, if teacher candidates are placed in a practicum or a classroom where education for sustainability plays an explicit role, those teacher candidates will be prepared for addressing issues of sustainability in their teaching.

Aside from these two *direct* ways in which teacher candidates are or could be prepared for education for sustainability, there are two *indirect* ways that interviewees pointed to. The first way comes into play because current Manitoba curricula involve learning outcomes that are linked to issues of sustainability. A publication by Manitoba Education (Manitoba Education and Training, 2000) demonstrates how some of the learning outcomes in different current Manitoba curricula are directly linked to education for sustainability and how teachers can address issues of sustainability when addressing those learning outcomes. Accordingly, courses that prepare teacher candidates for teaching those respective subject areas prepare teacher candidates at least in an *indirect* way for education for sustainability, as one interviewee suggested:

In our faculty we follow, you know, the provincial curriculum. So, obviously it is in the social studies curriculum and in the science curriculum. All of the methods courses will cover it in one way or another. That's a given. (FM8, 11:20)

The second indirect way in which issues linked to the preparation of teacher candidates for education for sustainability can and do play a role in teacher education courses even though the focus of those courses is not on education for sustainability comes into play through the wider notion of sustainability that is commonly used and that we outlined in section II-3.1. With such a wider notion, specific aspects of sustainability (and, thus, education for sustainability) could be indeed central to a particular course in a pre-service teacher education program even though the course instructor or the materials used in the course make no direct link to the notion of sustainability. With this wider notion of sustainability and, thus, education for sustainability in mind, a number of interviewees pointed to courses in their pre-service teacher education programs that address certain aspects of sustainability. For instance, a faculty member from the University of Manitoba mentioned, for instance, the School and Society course that deals with foundational social and cultural matters as they relate to education; a faculty members from Brandon university mentioned an elective environmental science methods course and the course on Aboriginal perspectives (and so on for the other faculties).

The last two ways of preparing teacher candidates for education for sustainability we would call *indirect*, because the focus is *not explicitly* on sustainability. This can make a big difference in the educational process, because learners are not helped to make the link to the language of and conceptualizations around the complex notion of sustainability. For educators, for instance, that can mean that they do not make the crucial link to holistic education (see section II-4.4) and the integrated curriculum (see section II-4.5). On the other side, just because a course has (education for) sustainability issues on the agenda, it does not mean that the course gives consideration to the educational implications of sustainability thinking as they are discussed in sections II-4.4 and II-4.5.

While these issues arise for even the direct ways of preparing teacher candidates for education for sustainability, the two *indirect* ways have two *inherent* problems. First, the desired experiences provided to teacher candidates in terms of education for sustainability are random and not systemic, because they depend on the interests and commitments of an instructor rather than on the interests and commitment of the program itself. Second, courses that do not make a direct link to the terminology, conceptualizations, and tradition of education for sustainability do not provide the opportunity for teacher candidates to make those very links.

Aside from inquiring into the pre-service programs, the interviews also explored the role that education for sustainability played for the faculty as a whole. Education for sustainability as the complex notion outlined in section II-3.1 was identifiable only in one faculty of education. Here is what one interviewee from that faculty said about the changes made or to be made:

It [ESD] is now [a component of the pre-service teacher education program in the interviewee's institution]. . . . It's going to be part of every course. We have decided we are going to do an audit. So, we are going to look at every course to see what there is in each course already that supports and embraces education for sustainable development. And it is going to become part of the interdisciplinary project, which all our students have to do, which is really a culminating . . . project in the second year. . . . We are going to be hosting our second summer institute this year [a theme-based course offered for credit for teacher candidates] that is kind of framed by the three pillars of sustainable development. Last year we were talking about human rights, equity, poverty. . . . This year it's [name of instructor] . .

. he has been working for year at [name of university] on sustainability issues with school divisions . . . With this [year's] summer institute . . . is going to be on the environmental piece. And then next year we really thought we would kind of focus on the activism bit. (FM5, 29:45)

While in this faculty education for sustainability is seen as an overarching issue, interviewees from other faculties conceptualized education for sustainability as just one of many “competing” issues that the faculty is / can focus on:

The challenge always is, you know, which issues get treated in a program that's limited in length, and all of ours are. . . . Which of these concerns gets dedicated space and treatment, and then how with the myriad of things we have to cover? How deep can that ever be unless you have something like a dedicated cohort where you're admitted . . . in sustainable development issues, you see yourself as a potential leader, maybe . . . a potential leader in the future and you, once admitted to the program, you opt for a cohort that is specifically tailored around that theme. So it, you know, it pervades all of your experiences as much as can be. (FM1, pp. 5-6)

The faculties of education of two other institutions had at least one aspect of the broader notion of sustainability (see section II-3.1) as a faculty-wide focus. At one institution, which primarily serves northern Manitoba where a high proportion of Aboriginal students live, the newly created pre-service teacher education program was created with consultation of and the input by Aboriginal Elders. As one interviewee from the institution says, the consultation with the Elder is on-going:

Q: Just talking about the role of the elders. Do they play in your program any role or are you more or less the only person who draws on them?

A: No, we do that as a faculty.

A: Right. Can you tell me more about that? What...

B: Well, because of our program – the elders designed our program. So if I sent you the model – the education model for Kenanow; “Kenanow” means “all of us”. So the elders are saying to us that all of us, our elders, our parents, our communities and universities have a part to play in the education of our youth. We all have something to contribute.

(FM7, p. 6)

This recognition of the socio-cultural context of living and teaching in northern Manitoba is addressing a crucial aspect of the socio-cultural strand of living sustainably in the geographical and historical context given.

In the faculty of education at another institution a faculty-wide focus on issues of social justice and communal service (for faculty members and teacher candidates) was identified.

In terms of what we can do: we can do a lot more. Certainly with our social studies program we can do a lot more. With our students' counsel we can do a lot more. I think we definitely do really well in terms of the social justice orientation, like working with inner city . . . Yeah, working with inner-city, valuing service learning, expecting students to do PD. Our students do tons and tons and tons of PD; they do tons and tons and tons of outreach, community service. This is inner city. (FM3, p. 11)

We have a DPC, Department Personnel Committee, that vets our activity reports every year. It's made up of a group of our colleagues and the criteria for service is very high, and if –you will be ranked as satisfactory, unsatisfactory or exceptional. If you haven't done service... like they expect you to do it. It's our identity. So if you don't do it because you should, you do it because you have to. It's valued, it's rewarded, it's acknowledged. (FM3, p. 9)

### 5.4.3 Challenges

As mentioned above, course instructors are free to incorporate aspects of preparing teacher candidates for education for sustainability they find appropriate and that are in line with the general course description for the course they are teaching. Beyond that possibilities, the interviews helped to identify a number of challenges that a more programmatic approach to preparing teacher candidates for education for sustainability.

#### (1) *Leadership*

Different interviewees identified directly the commitment or lack of commitment by the leadership in the faculty and / or university as a central aspect of why or why not there is a programmatic approach to preparing teacher candidates for education for sustainability. One interviewee expresses the view that the lack of commitment of the administration of her / his faculty toward education for sustainability is a major challenge to seeing it play any major role in the faculty's pre-service teacher education program.

The university is trying to be more sustainable as a large, I guess [institution], but it's not doing a very good job, in my view. I mean, and the faculty, I don't think, really, pays attention to most of the things that could be done. . . . There is no direction from the dean for this; there is really no direction anywhere in the faculty for thinking more sustainably. (FM2, 29:10)

One administrator of a different faculty expressed the view that her / his becoming an administrator in the faculty has played a central role in giving education for sustainability a more prominent role in the faculty's pre-service teacher education program. She / he contrasted the current situation with the dismissal by the faculty of similar ideas she / he brought forward before she / he was an administrator in the faculty:

A: Eight years ago, maybe even ten years ago, I confronted the faculty of education. . . . I wanted the faculty to kind of embrace an approach toward education for sustainable development. . . . Finally they said, you know what we can do, we can give you a three hour workshop within our program. So you can do your little song and dance for three hours, and that should do it. And I said, well, you know, we require all our students to do an interdisciplinary project, we want to impose, or infuse this element of sustainability; that is, every project, no matter what level, elementary or secondary or what discipline, there has to be an education for sustainable development component. And they turned me down. This year, at our faculty retreat, they embraced that concept.

Q: The same people?

A: No. No. Different people. Some of the same people. A couple of the same people. But I think it's more a sign of the time. So, I think, eight, ten years ago, it was not urgent. I think it's urgent now.

(FM5, 5:45)

One administrator pointed to the president of the University of Winnipeg, Lloyd Axworthy, as an example of the difference that leadership can make in what a university is committed to, as is the case with the University of Winnipeg for the protection of the natural environment.

You know, I look at the University of Winnipeg since Lloyd Axworthy has come on. What has he done? He has basically positioned the University of Winnipeg within sustainability. It's part of their mission statement, they are talking about human rights, . . . I think we [the interviewee's faculty] are kind of latecomers. (FM5, 5:45)

One faculty member of the University of Winnipeg illustrates the impact that the focus by the administrative leadership of her / his university on social issues and the inner city of Winnipeg has impacted on the faculty's ability to make service to the community an important aspect of the promotion process in the faculty:

He [the president of the interviewee's university] says "no, this is a university that values that [service to the community], that puts our money where our mouth is. Here are all the programs that we're going to do because this is important. This will be valued, this will be assessed, this will be rewarded [in the tenure and promotion process]. So in education we said "hallelujah!" because we've been doing it all these years anyways; it's nice it actually counts for something! (FM3, p. 11)

We have a DPC, Department Personnel Committee, that vets our activity reports every year. It's made up of a group of our colleagues and the criteria for service is very high, and if – you will be ranked as satisfactory, unsatisfactory or exceptional. If you haven't done service... like they expect you to do it. It's our identity. So if you don't do it because you should, you do it because you have to. It's valued, it's rewarded, it's acknowledged. (FM3, p. 13)

## (2) *Perception of the Role of Education for Sustainability in Pre-Service Teacher Education*

Another important challenge to or support for a programmatic commitment to preparing teacher candidates for education for sustainability is the perception of the role and importance of education for sustainability in pre-service teacher education. One administrator in a faculty of education sees education for sustainability as one among many different and important aspects of preparing teachers:

The challenge always is, you know, which issues get treated in a program that's limited in length, and all of ours are. . . . Which of these concerns gets dedicated space and treatment, and then how with the myriad of things we have to cover? How deep can that ever be unless you have something like a dedicated cohort where you're admitted . . . in sustainable development issues, you see yourself as a potential leader, maybe . . . a potential leader in the future and you, once admitted to the program, you opt for a cohort that is specifically tailored around that theme. So it, you know, it pervades all of your experiences as much as can be. (FM1, pp. 5-6)

The same challenge was expressed at the individual instructor rather than the programmatic level. One faculty member expressed her / his challenge with incorporating education for sustainability in her / his course as a matter of competing with other important issues of learning to teach, although this particular faculty member is very committed to the idea of education for sustainability:

When you look at [name of subject matter], I am really conflicted here [in terms of incorporating education for sustainability], and I have to be honest. I know that document that was put out by Manitoba Education. It was supposed to guide the development of resources on sustainability. I realize, they pinpoint some of the outcomes in the [name of subject matter] curriculum that could be taught through sustainability topics, but I feel like, in the position I have, in a [short] course . . . I have to help them gain confidence in understanding the material in . . . the curriculum. And I honestly don't even address [sustainability topics]. (FM2, 12:10)

On administrator suggested that there is no sense of urgency among his faculty colleagues to integrate their understanding of issues of sustainability that they have in general:

I think that there are a number of faculty who appreciate the philosophy of environmental sustainability on a personal level. In terms of how that's reflected in what they teach, probably fewer. I don't think there is any sense of urgency among faculty to integrate their knowledge [around sustainability issues] broadly into their curriculum that they are teaching in. (FM8, 8:10)

### (3) *Silo-ing*

One faculty member pointed to the challenge of institutional "silo-ing", meaning that the specialization in universities has lead an institutionalized compartmentalization of interests commitments that represent a barrier for interdisciplinary approaches that allow to address the interconnectedness that characterizes the sustainability concept (see section II-3.1):

Within one building we've got a faculty of business admin, we've got the social sciences, the humanities, we've got education, we've got science, and we are still working in silos. . . . Why could we not demand, when students ask to come into education that they have either a three-credit-hour course on sustainable development or nine-credit-hour courses on different issues related to sustainability? You know, people in business admin can bring their expertise to the table and people in the humanities and people in science. (FM5, 7:55)

Addressing education for sustainability in the way discussed in sections II-4.4 and II-4.5 in response to the recognition of the holistic nature of issues of sustainability will be a challenge within a program and a faculty that is built around such silo-ing. Another faculty member noted that systems thinking (see section II-4.4.1) and integration (see section II-4.5) is important but that a sense for holistic education is missing among her / his faculty colleagues:

You could have a great title [of a course] that incorporates math and science. You could have another one that incorporates social studies and science. But are they still going to be taught as two separate courses that never talk to one another, so that you don't really help students have a sense of how these are interrelated disciplines, that you can't really know one without the other? . . . It's just more of the same but calling it something new. (FM2, 53:20)

How do you prepare them [teacher candidates] for that? Critical thinking, you know, looking at systems thinking. You know, I think it has to be that. And are we doing this in the faculty? No. I don't think so. There may be some people I am not aware of that are doing it, but I don't see it. (FM2, 55:10)

#### 5.4.4 Possibilities

The interviews explored also faculty members' views on what might be possible in or needed for their respective teacher education program if one wanted to give the preparation of teacher candidates for education for sustainability a greater role in the program. Following are the types of suggestions provided by the interviewees.

##### (1) *Infusion*

The most common suggestion was the infusion approach to including education for sustainability into their respective pre-service teacher education program, where the infusion is done at the individual course level. In making this suggestion, some interviewees made reference to the infusion approach suggested by Manitoba Education in its most prominent document on education for sustainability (Manitoba Education and Training, 2000).

I do not think that we need an ESD course [in the preservice teacher education program]. I don't think it is any different than, you know, our effort to integrate technology. I mean, if you want to have a great discussion in a language arts course, so you are talking about, you know, speaking is one of the skills we are developing in students; have them talk about how they are contributing to the environment one way or the other. Have a debate on it. You know, there is so many different ways to integrate science education, environmental science education, sustainability issues into all of the courses. So, if you are asking me how do we make the program stronger, we ask faculty members to integrate those discussions across curriculums, just like we do with EAL skills. So, that's to me the solution. I don't think that a course is going to do that trick. (FM8, 12:50)

Two interviewees emphasized that a course that would involve education for sustainability would need to link teacher candidates to the community within which their teaching would take place.

##### (2) *Standalone Course(s)*

There were a number of interviewees who suggested a standalone course to support the preparation of teacher candidates for education for sustainability. Two of those suggested in addition to change the entrance requirement for their Bachelor of Education program to include a course on sustainability, which applicants would need to have to be considered for admission. One interviewee saw the standalone course within the pre-service teacher education program as a course that would link the different aspects of the concept of sustainability together. Two interviewees who suggested a standalone course on education for sustainability suggested that such a course would need to include an "activism" component where learners need to get involved in making a difference in the community.

##### (3) *Practicum Component*

Two interviewees suggested that the practicum component could contribute to teacher candidates' preparation for education for sustainability by placing teacher candidates in practicum schools where education for sustainability at the school-level plays an important part in the education practice and the educational mandate of the school.

*(4) Enculturation*

While the suggestions so far concerned more the program-level, one interview revealed indirectly one additional suggestion for implementing education for sustainability in the preparation of preservice service teachers that concerns more the culture at the faculty-level: enculturation. The interviewee saw the strong culture of service to the community within her / his faculty also as being reinforced through hiring and enculturation:

I can certainly tell you we hire people looking for that attitude and those are those of the kinds of questions we ask when we are interviewing people. . . . We want them to be good teachers, we want them to be good researchers, but we want them to be good colleagues, we want them to be good citizens and good members of our community, good neighbours. And when I say 'community' I don't just mean university community, I mean our community. . . . and so far so good. It's hard to not do it when everybody else is doing it. You become the person who everyone is looking at, going 'what are you doing?' (FM3, p. 13)

In her / his comment, the interviewee was responding to the question why in her / his faculty there was such a strong commitment to service to the community. This question parallels the question why in a faculty there would be such a strong commitment to education for sustainability (which is currently not, as mentioned above, the case in faculties of education in Manitoba), so that the interviewee's response can be seen as indirectly suggesting the importance of the culture within a faculty for what the faculty as a whole is committed to, be it service to the community or education for sustainability. .

## **PART III**

### **INDIVIDUAL RESEARCH PROJECTS**

#### **1 Introduction to Part III**

Part I (“Description of the Research Project”) describes the Research Project as consisting of eight different research studies: a Baseline Study and seven individual research projects with different research teams that each inquired into a particular aspect of education for sustainability. Three of those research projects were lead by a university-based researcher, one of which focused on the impact of particular courses in a teacher education program on teacher candidates (Project 1), a second focused on the impact of technology-based in-service sessions on teachers’ teaching practices and teacher candidates’ learning to teach (Project 2), and a third one focused on the contributions that immigrant teachers can and do make to the education system in Manitoba (Project 3). The first and third project focused more on the socio-cultural aspect of the multi-strand concept of sustainability (see section II-3.1), while the second project focused more on the environmental strand of the concept of sustainability. Sections III-2 through III-4 present the reports of these three research projects.

The other four individual research projects were linked to professional development projects in schools, in school divisions, or across school divisions (see sections III-5 through III-8). Leaders of those professional development projects formed the research teams for these individual research projects. Three of those projects inquired into the socio-cultural strand of the concept of sustainability and one project into the environmental strand.

This Part III of the reports contains the reports of the seven individual research projects.



## 2 Project 1:

### *Graduating Education Students' Perception of the Newly Required Coursework in Aboriginal Education and Special Education / Diversity*

*Project Leaders and Section Authors:*

Jon Young (University of Manitoba)

Tony Tavares (Manitoba Education)

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#### 2.1 Introduction

Departments/Ministries and Faculties of Education throughout Canada and, to a large degree, throughout the world are increasingly challenged to provide better and more appropriate preparation of teachers for the increasing diverse classrooms that they will encounter (Verma, 1993). In today's schools " Not only are students likely to be multiracial or multiethnic but they are also likely to be diverse along linguistic, religious, ability, and economic lines that matter..." (Gladson-Billings, 2001, p. 14).

In response to this challenge, faculties of education have developed a variety of approaches to enhance the preparation of teachers. These approaches have ranged from stand alone elective courses to specialized programs and comprehensive approaches that infuse diversity and equity throughout the teacher preparation program (Hickling-Hudson & McMeniman, 1993; Vavrus, 2002; Solomon & Levine-Rasky, 2003).

The Faculty of Education at the University of Manitoba like many other Canadian and international teacher preparation institutions has made efforts to respond over the last few decades to respond to internal and external pressures to revise their program to respond to social justice issues in education and to provide for a better preparation of teacher candidates. The first step was the introduction "cross-cultural" education courses in the late 1970s as elective courses. Courses relate to English as a Second Language were also introduced at this point, and these too had a significant focus on issues related to cultural diversity and equity issues. Since then, the range of courses that deal with some aspect of cultural and linguistic diversity and equity issues have expanded to include courses related to Aboriginal Education and Aboriginal Perspectives.

Until the 2007-2008 academic year, these courses were not required courses for graduation from the Faculty, even though students were encouraged to take at least one of these courses. While there has been periodic pressure to make such courses mandatory, both the Faculty and the Minister of Education have resisted doing so until recently. Recognizing the increasingly diverse nature of Manitoba's school population, and in response to pressure from Manitoba's Aboriginal communities, the Minister of Education now requires that graduates from Manitoba Bachelor of Education programs who wish to be certified in Manitoba have at least 6 credit hours (one full course equivalent) of coursework related to Special Education/Diversity, and 3 credits (equivalent to one half-course) of approved coursework related to Aboriginal Education and/or Perspectives.

In light of this development, an initial, small-scale, research project was developed to explore some of the experiences, perceptions, and reflections of teacher candidates that enrolled in these courses in the 2009 – 2010 academic year. Teacher candidates were surveyed in May of 2010 and asked to respond to a number of questions. The questions were intended to provide insights into:

- the ethnic, linguistic, and religious diversity and composition of teacher candidates at the University of Manitoba
- participants' perspectives on their prior preparedness for teaching diverse students and prior experience and knowledge of diversity
- participants' perspectives on the impact of the courses on their ability or competency to respond to the needs of diverse learners
- participants' perspectives on what aspects or elements of the courses that they completed were most effective and valuable

### 2.1.1 The Changing “Face” of Diversity in Manitoba

The last few decades have seen a rather dramatic change in the cultural, linguistic, and religious composition of Canada's and Manitoba's peoples that has resulted primarily from changes in the patterns of immigration and, especially for Manitoba, sustained high levels and growth of new immigrants. It is important to consider the nature of the ethnocultural composition of Canada today and in the near future.

- According to the 2007 publication, *Aboriginal Demography - Population, Household and Family Projections 2001-2026*, Manitoba's and Canada's Aboriginal populations are “growing almost twice as fast as the Canadian population and this trend is expected to continue over the next two decades.” (Indian and Northern Affairs Canada, 2007, p. 5) The growth in the Aboriginal population will be especially important to the Western Provinces in general and Manitoba specifically. By 2026, Manitoba's Aboriginal population is expected to grow by 53%. (Indian and Northern Affairs Canada, 2007, p. 6) The growth of the Aboriginal population will affect many cities, as “Urban and on-reserve locations are also expected to experience high levels of Aboriginal population growth.” (Steffler, 2008, p. 20) This is especially important for Winnipeg, where Aboriginal peoples currently account for 10% of the population. (Statistics Canada, 2008, p.13)
- In addition, the Aboriginal population in Canada is very youthful compared to the general Canadian population. In 2001, Aboriginal children and youth (less than 25 years of age) comprised about 51% of the Aboriginal population. While the “*median age for the Aboriginal population was estimated to be 25 years compared to 37 for Canadians.*” This characteristic is likely to continue in the future, although the Aboriginal population projections indicate, “by 2026 the proportion of children and youth is expected to decrease to 41%.” (Indian and Northern Affairs Canada, 2007, p. 6)

- Over the last ten years total immigration to Canada has consistently been within the range of 220,000 to 250,000 persons per year (Manitoba Labour and Immigration, 2010).
- Since 2003, immigration to Manitoba has more than doubled. In 2009, the total immigration to Manitoba reached 13,520, which represents the highest level of immigration in the last 60 years. The source areas for new immigrants have been overwhelmingly from Asia and Pacific, Africa and the Middle East and South and Central America, although Germany has been a top source country for Manitoba (Manitoba Labour and Immigration, 2010).
- A recent study, *Projections of the Diversity of the Canadian Population 2006-2031*, by Statistics Canada indicate that the diversity of Manitoba's and Canada's population will only continue to grow, especially in terms of the percentage of citizens of visible minority origins, religious affiliation, and linguistic origins. A few selected highlights of the projections for 2031 from the report follow (Statistics Canada, 2010, p.1):
  - *Approximately three Canadians in ten (between 29% and 32%) could be a member of a visible minority group in 2031, regardless of the projection scenario. Canada would then have between 11.4 million and 14.4 million visible minority persons.*
  - *The visible minority population would be over-represented in the younger age groups. Thus, according to the reference scenario for these projections, 36% of the population under 15 years of age in 2031 would belong to a visible minority group, compared to 18% of persons aged 65 and over.*
  - *Arabs and West Asians are the visible minority groups that would grow the fastest between 2006 and 2031.*
  - *The number of persons having a non-Christian religion would more than double by 2031, reaching between 5.3 million and 6.8 million in 2031 compared to an estimated number of 2.5 million in 2006.*
  - *According to the scenarios developed for these projections, fewer than two Canadians in three would have a Christian religion in 2031.*
  - *Persons whose mother tongue was neither English nor French accounted for less than 10% of Canada's population in 1981. By 2006, that proportion had risen to 20%, and the projections indicate that it would reach between 29% and 32% in 2031.*
- The combined and cumulative effects of rapidly growing and much more youthful Aboriginal, immigrant, and Visible Minority populations has had and will increasingly have a significant impact on the K-12 educational system in Manitoba, but especially Winnipeg. Already in 2001, approximately 32% of children aged 0-5 years of age in were of Aboriginal and Visible Minority origins. (Manitoba Education, Citizenship and Youth, 2006, p.10). Based on the projections reported earlier in this paper of the rapid growth of Manitoba's Aboriginal and Visible Minority youth populations, is conceivable that within less than a decade the percentage of Aboriginal and Visible Minority students in Winnipeg's schools will approach or exceed the 50% mark.

### 2.1.2 Preparing Teachers for Diverse Classrooms: A Review of Some Key Themes

#### *Disproportionate Representation: Diversity in Teacher Candidates and the Teaching Force*

On of the key themes that one finds in the literature concerning the preparation of teachers with respect to diversity and equity perspectives is the need to develop a more inclusive and representative teaching candidates and force. Throughout Canada and the United States disproportionate numbers of native-born, White females of Christian, European backgrounds who are attracted to the teaching profession (Orlikow & Young, 1993; Canadian Teachers' Federation, 2004; Sleeter, 2001; Solomon, Portelli, Daniel, & Campbell, 2005). This imbalance in representation implies that the teaching force is not likely to have the have the linguistic and cultural knowledge, skills, and experiential insights that will assist them in responding to the needs of linguistically, religiously, and culturally diverse classrooms. Therefore the recruitment of teacher candidates from diverse backgrounds and especially underrepresented groups, must be a key strategy for developing a more inclusive and equitable education system (Orlikow & Young, 1993; Solomon & Levine, 2003).

#### *Critical Perspectives*

The need for teacher candidates to have a critical stance and be cognizant racial, cultural, linguistic, and class privileges is another important theme in the literature (McPherson, 2010; Marx, 2004; McLaren, 1995; McIntyre, 1997; Sleeter, 1993, 1994, 1995, 1996, 2001; Solomon et al. 2005; Dunn, 2009). Universities and faculties of education have developed courses that “regularly aim, either implicitly or explicitly, to develop students’ critical thinking by challenging them to think more deeply about their assumptions concerning race, ethnicity, gender, class, sexual orientation, or physical disabilities” (Chang, 2002, P. 22). However, some research suggests that courses in multicultural education have not affected the instructional practices of preservice teachers (Lenski, et al, 2005; Gibson, 2004). In part this may be a result of “token” or poorly construct and/or partially implemented programs and courses (Hickling-Hudson & McMeniman, 1993; Dunn et al, 2009).

Other factors that may limit the impact of programs and courses on preservice teachers may be related to resistance and denial. Sleeter, (1996) found that teachers in a professional in a multicultural education training program resisted questioning class, ethnic, and racial privileges. Solomon and Levine-Rasky (2003) in their national survey of teachers found that “ Forms and manifestations of resistance to MCE and ARE far outnumber forms and manifestations of accommodation.” (p. 72) Mujawamariya and Mahrouse (2004) found a similar problem with preservice teachers who were largely unaware of systemic barriers, or issues of power and social justice. Gladson-Billings (2001) found t

Solomon et al. (2005) in their work identified three strategies that teacher candidates use to resist critical reflection on issues of race, equity, and social justice. These are:

- ideological incongruence, which occurs when an individual supports a particular ideological stance but is, fails to support any measures designed to address that stance;
- negating white capital which by denying systems of white privilege;
- liberalist notions of merit that relate success of individuals to individual hard work and talent rather than group privileges or advantages.

Teacher candidates require programs that encourage questioning, recognition and understanding of their own worldviews and beliefs about race, culture, and ethnicity, as this is a critical step towards understanding the diverse students they will encounter in their classrooms. (Beardsley & Teitel, 2004; Conle et. al, 2000; Gibson, 2004; Lund, 1998; Marx, 2004; Solomon & Levine-Rasky, 2003; Solomon et al. 2005; Zeichner, 1996). This requires the provision of psychologically safe classroom environments where teacher candidates can work through their ideas, discomfort, emotions (anger, fear, etc;) and benefit from instructor support to help them process their experiences.

More recently, Chang (2002) found that mandatory diversity courses could have an important and significant impact on students' perceptions and reduce bias and prejudice. Solomon and Levine-Rasky (2003) found that a comprehensive and sustained model of teacher education could have a very significant impact on teacher candidates. Their research related to York University's Urban Diversity Teacher Education Program points to several factors that can make such programs effective.

### *Pedagogy and Teaching Styles*

While personal experience with diversity and intimate knowledge of diverse cultural and linguistic groups is important, some argue that the instructional styles and capabilities of teachers can be as important as their ethnicity or background. Teachers who are knowledgeable about and responsive to the cultural and linguistic diversity of learners and can provide appropriate educational experiences can have a significant impact on students from disadvantaged backgrounds and improve their academic performance, retention rates, and sense of belonging. (Kleinfeld, 1995; Sleeter, 2001; Friesen and Friesen, 2002, Kanu, 2007; Hogan, 2008)

Dunn et al (2009) drawing on their research into an imitative that attempted to infuse of intercultural inquiry into subject-area curriculum courses in a teacher education program found that "The findings indicate that most student teachers had limited prior experiences with diversity, leading to anxiety and uncertainty about their preparedness to work in diverse classrooms. Although many were receptive to intercultural inquiry and perceived its value, some resisted efforts to critically challenge social inequality and privilege." (p. 533)

Banks (1984, 1994) suggests that teachers may move through several stages to before arriving at a point where they are able to provide a transformative curriculum. Knowledge of the histories, experiences, and cultural perspectives of oppressed groups and a commitment to end oppression is an important aspect of developing a transformative approach.

However, preservice teachers may experience a disconnect or difficulties in linking the theory they explore in teacher preparation courses and programs and the reality of classrooms and practice. Often Preservice teachers feel inadequately prepared to alter curriculum and incorporate multicultural and antiracist perspectives and experiences. (Varus, 2002; Mujawamariya and Mahrouse 2004; Guo et al, 2009). Guo et al (2009) found that in their research with teachers in a masters program in Alberta that there is a need to go beyond teaching content about diversity and have a greater focus on learning processes. As well they argue that building strong linkages between professional education curriculum in post-secondary teacher education programs and the realities of school and practice should be given priority. They point to a great need for a closer connection between theory and practice in responding to diversity. In their view, this requires not only specialized courses but also the infusion of intercultural competencies across the whole the teacher education curriculum.

### *Teacher Preparation Programs Modeling Practice*

Teacher preparation programs and courses need to reflect a commitment to diversity and equity in their structure, content, practices, and staffing (Hickling-Hudson & McMeniman, 1993; Solomon & Levine-Rasky, 2003; McNeal, 2005). However, in many cases this is not achieved because of the resistance of teacher educators themselves and their own limitations in terms of theory and practice (Gladson-Billings, 2001).

### *The Possibilities and Limitations of Preservice Teaching Programs*

Teacher education programs vary widely across Canada and the United States, as do certification requirements. While teacher education programs are an important aspect of preparing teachers for classrooms, regardless of the nature and extent of training, ultimately there are limitations as to how much may be expected of these programs. For example, an extensive study of teacher preparation programs prepared for the Ewing Marion Kauffman Foundation by the Missouri Schools of Education Research Project 2005 found that there were eight areas in which a high proportion of teachers, 39 percent or more, felt somewhat or not at all well prepared by their preservice programs. These included four directly related to diversity:

- addressing the needs of students with limited English proficiency;
- working with parents;
- addressing the needs of students from diverse cultural backgrounds;
- addressing the needs of students with disabilities.

It is important to recognize that simple exposure to new ideas and perspectives will not be enough to change teacher candidates' beliefs, attitudes, and practices. Without the opportunity for reflection, application and contextualization, teacher candidates will not internalize values and knowledge about cultural diversity, and will likely not experience any significant transformation (Elabor-Idemudia, 2001; Levine-Rasky, 1998; Lund, 1998; Solomon et al. 2005).

## **2.2 Methodology**

In April 2010 some 198 questionnaires were mailed to all students graduating from the University of Manitoba's Bachelor of Education program. A total of 43 (22%) completed questionnaires were returned, and it is the responses contained in these questionnaires that are presented and analyzed in this research study.

Table III-1 shows the responses received by Program Stream (Early, Middle or Senior Years) and by Gender. Table III-1.1 provides similar data for the whole graduating class and provides a basis for assessing something of the representativeness of the returned questionnaires.

Table III-1: Responses by Stream and Gender

	Early Years	Middle Years	Senior Years	Total
Male	1 (11%) (7%)	3 (33%) (38%)	5 (56%) (25%)	9 (100%) (21%)
Female	14 (41%)	5 (15%)	15 (44%)	34 (100%)

	(93%)	(63%)	(75%)	(79%)
Total	15 (35%) (100%)	8 (19%) (100%)	20 (47%) (100%)	43 (100%) (100%)

Table III-1.1: Graduating Class by Stream and Gender

	Early Years	Middle Years	Senior Years	Total
Male	7 (11%) (13%)	16 (24%) (33%)	43 (65%) (44%)	66 (100%) (33%)
Female	46 (35%) (87%)	32 (24%) (67%)	54 (41%) (56%)	132 (100%) (67%)
Total	53 (27%) (100%)	48 (24%) (100%)	97 (49%) (100%)	198 (100%) (100%)

## 2.3 Findings

### 2.3.1 Teacher Candidates' Background Data

*Place of Birth:* Of the 43 teacher candidates responding to the questionnaire 42 (98%) were born in Canada.

*Cultural Origins:* Table III-2 reports on the cultural origins of the teacher candidates who responded to the questionnaire.

Table III-2: Responses Regarding Cultural Origins

<i>Cultural Origins</i>	
<i>Single Identities:</i>	
* Western European	11
* English	5
* Eastern European	3
* French	2
* Aboriginal	1
* Asian/South Asian	1
* Others	2
Sub-Total	25
<i>Dual Identities:</i>	
* French/English	3
* French/Eastern European	2
* English/Western European	4
* French/Franco-Manitoban	1
Sub-Total	10

*Multiple Identities:*

* Aboriginal/French/English/Western European	1
* Aboriginal/French/Western European	1
* Aboriginal/English/Irish	1
* Aboriginal/English/French/Western and Eastern European	1
* English/Western European/Other	1
* Western European/Eastern European/South American	1
* English/French/Western European	1
* French/English/Western European/African	1
Sub-Total	8
TOTAL	43

What is clearly shown in Table III-3 is the predominance of European cultural origins among the teacher candidates. 21 of the 25 (84%) respondents reporting single cultural identities reported European cultural origins, all 10 of the respondents reporting dual cultural origins (100%) reported only European origins, and 2 of the 8 graduates reporting more than two cultural origins reported only European origins. In all 77% of respondents reported only European culture origins.

Five respondents reported Aboriginal cultural origins (12%), one respondent reported Southern American origins (2%), and one respondent reported a single Asian/South Asian origin (2%).

**Faith** (Table III-3): When responding to the question about their faith/religious affiliations, 25 graduates (58%) identified themselves as Christians and 11 (26%) identified themselves as Agnostics or Atheists. No other religion was identified by more than one (2%) of the graduates.

Table III-3: Responses Regarding Faith

<i>Faith</i>	
* Christian	25 (58%)
Christian and Jewish	1 (2%)
Christian and Other	1 (2%)
* Atheist/Agnostic	11 (26%)
* First Nations Spirituality	1 (2%)
* Sikh	1 (2%)
* Others	2 (4%)
* Missing Data	1 (2%)
Total	43 (100%)

*Language* (Table III-4): The questionnaire asked graduates about their language fluencies. Of the 23 respondents reporting fluency in one language 22 (or 51% of the total respondents) reported fluency only in English, while 1 reported fluency only in German. A total of 15 respondents reported fluency in two languages (35% of all respondents). 12 of these reported fluency in English and French, and 1 English/Punjabi, 1 German/Russian, and 1 English/German. One respondent reported fluency in three languages – English/French/Portuguese.

Table III-4: Language Fluency

<i>Language Fluency</i>	
<i>One Language:</i>	
* English only	22 (51% of all respondents)
* German only	1
Sub-Total	23
<i>Two Languages:</i>	
* English/French	12
* English/Punjabi	1
* English/German	1
* German/Russian	1
Sub-Total	15
<i>Three Languages:</i>	
* English/French/Portuguese	1
Sub-Total	1
Missing Data	4
TOTAL	43

The data in Table III-4 reinforces a profile of the respondents/teacher candidates at the Faculty of Education that consists of largely English and French speaking students, born in Canada, with (multiple) European cultural origins. While 5 (12%) of respondents reported Aboriginal cultural origins, none reported fluency in any Aboriginal language. This background data would contrast quite dramatically with the backgrounds of the current Manitoba Kindergarten-Grade 12 student population and offers a justification for attention to cross-cultural and Aboriginal education courses in the Bachelor of Education program.

### **2.3.2 Teacher Candidates' Prior Experience with Diversity**

The questionnaire asked graduates about their personal experiences (i) with human diversity in general, and (ii) with Aboriginal peoples and cultures. Respondents were asked to assess their

levels of experience as either “little”, “moderate” or “extensive”. The results are summarized in Tables III-5 and III-6 below.

Table III-5: Prior Experience with Human Diversity

Little	Moderate	Extensive	Total
9 (21%)	21 (49%)	13 (30%)	43 (100%)

Table III-6: Prior Experience with Aboriginal Peoples & Cultures

Little	Moderate	Extensive	Total
21 (49%)	16 (37%)	6 (14%)	43 (100%)

Building on the data presented earlier Tables III-5 and add to the profile of graduates from the University of Manitoba Bachelor of Education as: (i) Canadian born, (ii) coming almost exclusively from European cultural backgrounds, (iii) fluent in English and/or French. Respondents, overall, reported a higher level of prior personal experience with human diversity than they did with Aboriginal peoples and cultures. The results suggest a range of different levels of experience (important in terms of not assuming that one programmatic response will ‘fit all’) but with only a minority of graduates reporting extensive prior experience with diversity or Aboriginal peoples and cultures, and a larger proportion reporting little prior experience.

Unless one rejects the notion that cultural/cross-cultural awareness is an important element of effective teaching (or that that can be effectively acquired ‘on the job’ and ‘on the fly’) then this data would support the importance of diversity education and Aboriginal content in the Bachelor of Education program.

### 2.3.3 Required Courses on Aboriginal and Cross-Cultural Education Taken

Prior to the Minister of Education making coursework in Aboriginal Education and Special Education/Diversity a requirement for certification, the Faculty of Education offered a number of such courses as elective courses for B. Ed students. The number of elective courses that students have room for in their programs varies from stream to stream. Tables III-7 and III-8 show how many, and which, courses were taken by the graduates who responded to the survey.

Table III-7: Aboriginal Education and Diversity Courses Taken

Course	Respondents
<i>Aboriginal Education</i>	
EDUA 1500 Aboriginal Education	26
EDUB 1602 Aboriginal Perspectives and the Curriculum	17
Sub-total	43
<i>Diversity/Cross-Cultural</i>	
EDUA 1540 Cross-Cultural Education	28
EDUB 1620 Principles and Procedures of Second Language Learning	5
EDUB 1820 Language and Content Instruction of ESL/	8

Bilingual Students	
Sub-total	41
TOTAL	84

Table III-8: The Number of Aboriginal Education and Diversity/Cross-Cultural Courses Taken by Students

	0	1	2	3
Number of Aboriginal Education Courses	3	35	4	-
Number of Diversity/Cross-Cultural Courses	2	39	1	

The common pattern shown in these tables is that of almost all students taking one Aboriginal Education course and one Cross-Cultural/Diversity course, which reflects both the new certification requirements and also something of the available space in students’ programs where there is very limited space for student choice/elective coursework.

**2.3.4 Teacher Candidates’ Perception of Diversity Courses**

*Course: EDUA 1540 Cross-Cultural Education*

This course was taken by 28 respondents. Graduates were asked whether the fact that this course was about to become required for certification influenced their decision to take the course. 19 (68%) responded ‘yes’ and 9 (32%) responded ‘no’. Table III-9 reports graduates’ responses to a number of possible factors influencing their decision to take this course.

Table III-9: Reasons for Taking EDUA 1540 Cross-Cultural Education

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	20 (78%)	5 (19%)	1(4%)	0	26 (100%)
Personal interest	5 (19%)	5 (19%)	10 (38%)	6 (23%)	26 (100%)
Employment advantage	3 (12%)	5 (20%)	8 (32%)	9 (36%)	25 (100%)
Schedule/ Convenience	2 (9%)	4 (17%)	8 (35%)	11 (43%)	23 (100%)
Instructor reputation	1 (7%)	2 (13%)	4 (27%)	8 (53%)	15 (100%)
Others			1 (Available via Distance]		1

Tables III-10, III-11 and III-12 report of the impact the course 1540 Cross-Cultural Education had on students’ *personal experience, level of knowledge, and perceived level of competency* related to learners from diverse backgrounds.

Table III-10: The Impact of EDUA 1540 Cross-Cultural Education on Candidates' Personal Experiences with Diversity

Limited Impact	Moderate Impact	Great Impact	Total
18 (69%)	5 (19%)	3 (12%)	26 (100%)

Table III-11: The Impact of EDUA 1540 Cross-Cultural Education on Candidates' Level of Knowledge of Human Diversity

Limited Impact	Moderate Impact	Great Impact	Total
16 (62%)	5 (19%)	5 (19%)	26 (100%)

Table III-12: The Impact of EDUA 1540 Cross-Cultural Education on Candidates' Level of Competency Teaching Learners from Diverse Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
14 (54%)	7 (26%)	5 (19%)	26 (100%)

Teacher candidates were asked if the course helped them in their practicum placement. Their responses are shown in Table III-13.

Table III-13: The Perceived Impact on EDUA 1540 Cross-Cultural Education on the Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
19 (73%)	3 (12%)	4 (15%)	26 (100%)

Teacher candidates were asked what they had learned from taking EDUA 1540 Cross Cultural Education and their responses are shown in Table III-14.

Table III-14: Students' Perceptions of What and How much They Learned from Taking EDUA 1540 Cross-Cultural Education

	Little or None	Some	A Great Deal	Total
Increased understanding of diverse learners	13 (50%)	7 (27%)	6 (23%)	26 (100%)
Valuable teaching skills	15 (58%)	5 (19%)	6 (23%)	26 (100%)
Met with students from different backgrounds	12 (48%)	8 (32%)	5 (20%)	25 (100%)
Increased awareness of diversity issues	11 (42%)	9 (35%)	6 (23%)	26 (100%)
Inspired me to learn more about diversity issues	11 (42%)	9 (35%)	6 (23%)	26 (100%)

*Course: EDUB 1620 Principles and Procedures of Second Language Learning*

This course was taken by 6 respondents. Graduates were asked whether the fact that this course was about to become required for certification influenced their decision to take the course. 3 (50%) responded ‘yes’ and 3 (50%) responded ‘no’. Table III-15 reports graduates’ responses to a number of possible factors influencing their decision to take this course.

Table III-15: Reasons for Taking EDUB 1620 Principles & Procedures of Second Language Learning

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	4 (67%)	-	1 (17%)	1 (17%)	6 (100%)
Personal interest	-	2 (33%)	1 (17%)	3 (50%)	6 (100%)
Employment advantage	-	2 (33%)	3 (50%)	1 (17%)	6 (100%)
Schedule/ Convenience	-	1 (17%)	1 (17%)	4 (67%)	6 (100%)
Instructor reputation	1 (17%)	-	-	5 (83%)	6 (100%)
Others	-	-	-	-	-

Table III-16: The Impact of EDUB 1620 Principles & Procedures of Second Language Learning on Candidates’ Personal Experience with Diversity

Limited Impact	Moderate Impact	Great Impact	Total
3 (50%)	3 (50%)	-	6 (100%)

Table III-17: The Impact of EDUB 1620 Principles & Procedures of Second Language Learning on Candidates’ Level of Knowledge of Human Diversity

Limited Impact	Moderate Impact	Great Impact	Total
3 (50%)	3 (50%)	-	6 (100%)

Table III-18: The Impact of EDUB 1620 Principles & Procedures of Second Language Learning on Candidates’ Level of Competence Teaching Learners from Diverse Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
2 (3%)	4 (67%)	-	6 (100%)

Table III-19: The Perceived Impact on EDUB 1620 Principles & Procedures of Second Language Learning on the Candidates’ Practicum Experience

Little or No Help	Some Help	A Great Help	Total
1 (17%)	2 (33%)	3 (50%)	6 (100%)

Table III-20: Students’ Perceptions of What and How much They Learned From Taking EDUB 1620 Principles & Procedures of Second Language Learning

	Little or None	Some	A Great Deal	Total
Increased understanding of diverse learners	4 (67%)	2 (33%)	-	6 (100%)
Valuable teaching skills	3 (50%)	(50%)	-	6 (100%)
Met with students from different backgrounds	3 (50%)	3 (50%)	-	6 (100%)
Increased awareness of diversity issues	3 (50%)	3 (50%)	-	6 (100%)
Inspired me to learn more about diversity issues	3 (50%)	3 (50%)	-	6 (100%)

*Course: EDUB 1820 Language and Content Instruction of ESL/ Bilingual Students*

This course was taken by 6 respondents. Graduates were asked whether the fact that this course was about to become required for certification influenced their decision to take the course. 5 (83%) responded 'yes' and 1 (17%) responded 'not applicable'. Table III-21 reports graduates' responses to a number of possible factors influencing their decision to take this course.

Table III-21: Reasons for Taking EDUB 1820 Language and Content Instruction of ESL/Bilingual Students

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	6 (100%)	-	-	-	6 (100%)
Personal interest	-	3 (50%)	2 (33%)	1 (17%)	6 (100%)
Employment advantage	1 (17%)	2 (33%)	1 (17%)	2 (33%)	6 (100%)
Schedule/ Convenience	-	-	2 (33%)	4 (67%)	6 (100%)
Instructor reputation	-	2 (33%)	-	4 (67%)	6 (100%)
Others	-	-	-	-	-

Table III-22: The Impact of EDUB 1820 Language and Content Instruction of ESL/Bilingual Students on Candidates' Personal Experience with Diversity

Limited Impact	Moderate Impact	Great Impact	Total
1 (17%)	5 (83%)	-	6 (100%)

Table III-23: The Impact of EDUB 1820 Language and Content Instruction of ESL/Bilingual Students on Candidates' Knowledge of Human Diversity

Limited Impact	Moderate Impact	Great Impact	Total
-	4 (67%)	2 (33%)	6 (100%)

Table III-24: The Impact of EDUB 1820 Language and Content Instruction of ESL/Bilingual Students on Candidates' Level of Competence Teaching Learners from Diverse Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
2 (33%)	3 (50%)	1 (17%)	6 (100%)

Table III-25: The Perceived Impact of EDUB 1820 Language and Content Instruction of ESL/Bilingual Students on Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
-	1 (17%)	5 (87%)	6 (100%)

Table III-26: Students' Perceptions of What and How much They Learned from Taking EDUB 1820 Language and Content Instruction of ESL/Bilingual Students

	Little or None	Some	A Great Deal	Total
Increased understanding of diverse learners	2 (33%)	3 (50%)	1 (17%)	6 (100%)
Valuable teaching skills	2 (33%)	3 (50%)	1 (17%)	6 (100%)
Met with students from different backgrounds	2 (33%)	2 (33%)	2 (33%)	6 (100%)
Increased awareness of diversity issues	2 (33%)	2 (33%)	2 (33%)	6 (100%)
Inspired me to learn more about diversity issues	1 (17%)	3 (50%)	2 (33%)	6 (100%)

#### *Combined Data for all Cross-Cultural/Diversity Courses*

A cross-cultural/diversity course was taken by 42 respondents. Graduates were asked whether the fact that this course was about to become required for certification influenced their decision to take the course. 27 (68%) responded 'yes', 12 (30%) responded 'no' and 1 responded "not applicable" (3%). Table III-27 reports graduates' responses to a number of possible factors influencing their decision to take this course.

Table III-27: Reasons for Taking One or More Cross-Cultural/Diversity Courses

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	30 (79%)	5 (13%)	2 (5%)	1 (3%)	38 (100%)
Personal interest	5 (13%)	10 (26%)	13 (33%)	11 (28%)	39 (100%)
Employment advantage	4 (11%)	9 (24%)	12 (32%)	12 ((32%)	37 (100%)
Schedule/ Convenience	2 (5%)	5 (14%)	11 (27%)	19 (51%)	37 (100%)
Instructor reputation	2 (7%)	4 (15%)	4 (15%)	17 (63%)	27 (100%)

Others	-	-	1 Available via Distance	-	-
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Table III-28: The Impact of Taking One or More Cross-Cultural/Diversity Courses on Candidates' Personal Experience with Diversity

Limited Impact	Moderate Impact	Great Impact	Total
22 (58%)	13 (34%)	3 (8%)	38 (100%)

Table III-29: The Impact of Taking One or More Cross-Cultural/Diversity Courses on Candidates' Knowledge of Human Diversity

Limited Impact	Moderate Impact	Great Impact	Total
19 (50%)	12 (32%)	7 (18%)	38 (100%)

Table III-30: The Impact of Taking One or More Cross-Cultural/Diversity Courses on Candidates' Level of Competence Teaching Learners from Diverse Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
18 (47%)	14 (37%)	6 (16%)	38 (100%)

Table III-31: The Perceived Impact of Taking One or More Cross-Cultural/Diversity Courses on Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
20 (53%)	6 (16%)	12 (32%)	38 (100%)

Table III-32: Students' Perceptions of What and How much They Learned from Taking One or More Cross-Cultural/Diversity Courses

	Little or None	Some	A Great Deal	Total
Increased understanding of diverse learners	19 (50%)	12 (32%)	7 (18%)	38 (100%)
Valuable teaching skills	20 (53%)	11 (29%)	7 (18%)	38 (100%)
Met with students from different backgrounds	17 (46%)	13 (35%)	7 (19%)	37 (100%)
Increased awareness of diversity issues	16 (42%)	14 (37%)	8 (21%)	38 (100%)
Inspired me to learn more about diversity issues	15 (39%)	15 (39%)	8 (21%)	38 (100%)

Graduates were asked to assess their current knowledge, preparedness, and competency related to teaching diverse learners, on a scale where 1 – Poor, 3 = Good, and 5 = Excellent. Their responses are shown in Table III-33.

Table III-33: Students Perceptions of Their Current Knowledge, Preparedness, and Competency to Teach Diverse Learners

Poor	[Fair]	Good	[Very Good]	Excellent	Total
-	7 (18%)	14 (37%)	14 (37%)	3 (8%)	38 (100%)

**2.3.5 Teacher Candidates’ Perception of Aboriginal Education Courses**

39 of the 42 respondents reported taking one of the two available Aboriginal education courses – 17 took EDUA 1500 Aboriginal Education and 22 took EDUB 1602 Aboriginal Perspectives and the Curriculum. When asked if the fact that the course was about to become required for certification influenced their decision to take the course 13 (76%) of those taking EDUA 1500 said that it did and 15 (68%) of those taking EDUB 1602 said that it did.

*Course: EDUA 1500 Aboriginal Education*

This course was taken by 17 respondents.

Table III-34: Reasons for Taking EDUA 1500 Aboriginal Education

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	16 (94%)	1 (6%)	-	-	17 (100%)
Personal interest	1 (6%)	4 (24%)	5 (29%)	7 (41%)	17 (100%)
Employment advantage	1 (6%)	5 (29%)	7 (41%)	4 (24%)	17 (100%)
Schedule/ Convenience	-	2 (12%)	7 (41%)	8 (47%)	17 (100%)
Instructor reputation	-	1 (6%)	3 (18%)	14 (82%)	17 (100%)
Others	-	-	-	-	-

Tables III-35, III-36 and III-37 report of the impact the course EDUA 1500 Aboriginal Education had on students’ *personal experience, level of knowledge, and perceived level of competency* related to learners from diverse backgrounds.

Table III-35: The Impact of EDUA 1500 Aboriginal Education on Candidates’ Personal Experience with Aboriginal People and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
10 (59%)	7 (41%)	-	17 (100%)

Table III-36: The Impact of EDUA 1500 Aboriginal Education on Candidates' Level of Knowledge of Aboriginal People and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
8 (47%)	8 (47%)	1 (6%)	17 (100%)

Table III-37: The Impact of EDUA 1500 Aboriginal Education on Candidates' Level of Competency Teaching Learners from Aboriginal Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
10 (59%)	6 (35%)	1 (6%)	17 (100%)

Teacher candidates were asked if the course helped them in their practicum placement. Their responses are shown in Table III-38.

Table III-38: The Perceived Impact of EDUA 1500 Aboriginal Education on the Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
12 (71%)	5 (29%)	-	17 (100%)

Teacher candidates were asked what they had learned from taking EDUA 1500 Aboriginal Education, and their responses are shown in Table III-39.

Table III-39: Students' Perceptions of What and How much They Learned from Taking EDUA 1500 Aboriginal Education

	Little or None	Some	A Great Deal	Total
Increased understanding of Aboriginal learners	5 (29%)	8 (47%)	4 (24%)	17 (100%)
Valuable teaching skills For Aboriginal learners	10 (59%)	5 (29%)	2 (12%)	17 (100%)
Met with students from Aboriginal backgrounds	13 (76%)	3 (18%)	1 (6%)	17 (100%)
Increased awareness of Aboriginal issues	7 (42%)	7 (42%)	3 (18%)	17 (100%)
Inspired me to learn more about Aboriginal education	8 (47%)	4 (24%)	5 (29%)	17 (100%)

*Course: EDUB 1602 Aboriginal Perspectives in the Curriculum*

This course was taken by 22 respondents.

Table III-40: Reasons for taking EDUB 1602 Aboriginal Perspectives and the Curriculum

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	18 (82%)	1 (5%)	1 (5%)	2 (9%)	22 (100%)

Personal interest	4 (18%)	4 (18%)	4 (18%)	10 (45%)	22 (100%)
Employment advantage	4 (18%)	3 (14%)	3 (14%)	12 (55%)	22 (100%)
Schedule/ Convenience	1 (5%)	3 (14%)	5 (23%)	13 (59%)	22 (100%)
Instructor reputation	1 (5%)	1 (5%)	1 (5%)	19 (86%)	22 (100%)
Others	-	-	-	-	-

Tables III-41, III-42 and III-43 report of the impact the course EDUA 1602 Aboriginal Perspectives and the Curriculum had on students' *personal experience*, *level of knowledge*, and perceived *level of competency* related to learners from diverse backgrounds.

Table III-41: The Impact of EDUB 1602 Aboriginal Perspectives and the Curriculum on Candidates' Personal Experience with Aboriginal People and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
8 (36%)	7 (32%)	7 (32%)	22 (100%)

Table III-42: The Impact of EDUB 1602 Aboriginal Perspectives and the Curriculum on Candidates' Level of Knowledge of Aboriginal Peoples and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
7 (32%)	10 (45%)	5 (23%)	22 (100%)

Table III-43: The Impact of EDUB 1602 Aboriginal Perspectives and the Curriculum on Candidates' Level of Competency Teaching Learners from Aboriginal Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
8 (36%)	7 (32%)	7 (32%)	22 (100%)

Teacher candidates were asked if the course helped them in their practicum placement. Their responses are shown in Table III-44.

Table III-44: The Perceived Impact of EDUB 1602 Aboriginal Perspectives and the Curriculum on the Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
4 (18%)	3 (14%)	15 (68%)	22 (100%)

Teacher candidates were asked what they had learned from taking EDUB 1602 Aboriginal Perspectives and the Curriculum and their responses are shown in Table III-45.

Table III-45: Students' Perceptions of What and How much They Learned from Taking EDUB 1602 Aboriginal Perspectives and the Curriculum

	Little or None	Some	A Great Deal	Total
Increased understanding of Aboriginal learners	10 (45%)	6 (27%)	6 (27%)	22 (100%)
Valuable teaching skills for working with Aboriginal learners	10 (45%)	5 (23%)	7 (32%)	22 (100%)
Met with students from Aboriginal backgrounds	14 (70%)	4 (18%)	4 (18%)	22 (100%)
Increased awareness of Aboriginal issues	6 (27%)	6 (27%)	10 (45%)	22 (100%)
Inspired me to learn more about Aboriginal education	8 (36%)	7 (32%)	7 (32%)	22(100%)

*Combined Data for all Aboriginal Education Courses*

39 respondents took an Aboriginal education course.

Table III-46: Reasons for Taking One or More Aboriginal Education Courses

	Major Reason	Very Important	Fairly Important	Not Important	Total
A program requirement	34 (87%)	2 (5%)	1 (3%)	2 (6%)	39 (100%)
Personal interest	5 (13%)	8 (21%)	9 (23%)	17 (44%)	39 (100%)
Employment advantage	5 (13%)	8 (21%)	10 (26%)	16 (41%)	39 (100%)
Schedule/ Convenience	1 (3%)	5 (13%)	12 (31%)	21 (54%)	39 (100%)
Instructor reputation	1 (3%)	2 (6%)	4 (10%)	32 (82%)	39 (100%)
Others	-	-	-	-	-

Table III-47: The Impact of Taking One or More Aboriginal Education Courses on Candidates' Personal Experience with Aboriginal People and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
18 (46%)	14 (36%)	7 (18%)	39 (100%)

Table III-48: The Impact of Taking One or More Aboriginal Education Courses on Candidates' Level of Knowledge of Aboriginal Peoples and Cultures

Limited Impact	Moderate Impact	Great Impact	Total
15 (38%)	18 (46%)	6(15%)	39 (100%)

Table III-49: The Impact of taking one or more Aboriginal Education Courses on Candidates' Level of Competency Teaching Learners from Aboriginal Cultural Backgrounds

Limited Impact	Moderate Impact	Great Impact	Total
18 (46%)	13 (33%)	8 (21%)	39 (100%)

Teacher candidates were asked if the course helped them in their practicum placement. Their responses are shown in Table III-50.

Table III-50: The Perceived Impact of taking One or More Aboriginal Education Courses on the Candidates' Practicum Experience

Little or No Help	Some Help	A Great Help	Total
16 (41%)	8 (31%)	15 (38%)	39 (100%)

Table III-51: Students' Perceptions of What and How much They Learned from One or More Aboriginal Education Courses

	Little or None	Some	A Great Deal	Total
Increased understanding of Aboriginal learners	15 (38%)	14 (36%)	10 (26%)	39 (100%)
Valuable teaching skills for working with Aboriginal learners	20 (51%)	10 (26%)	9 (23%)	39 (100%)
Met with students from Aboriginal backgrounds	27 (69%)	7 (18%)	5 (13%)	39 (100%)
Increased awareness of Aboriginal issues	13 (33%)	13 (33%)	13 (33%)	39 (100%)
Inspired me to learn more about Aboriginal education	16 (41%)	11 (28%)	12 (31%)	39(100%)

Table III-52: Students' Perceptions of Their Current Knowledge, Preparedness, and Competency Related to Teaching Aboriginal Learners

Poor	Fair	Good	Very Good	Excellent	Total
1 (3%)	9 (24%)	18 (49%)	5 (14%)	4 (11%)	37 (100%)

Table III-53: Students' Perceptions of Their Current Preparedness as a Beginning Teacher

Not Prepared		Moderately Prepared		Very Prepared	Total
-	2 (5%)	8 (21%)	23 (61%)	5 (13%)	38 (100%)

## 2.4 Discussion

The decision by the Manitoba Ministry of Education to make coursework in Aboriginal Education and Inclusive Education/Diversity a requirement of provincial teacher certification, reflects an important effort to ensure that new teachers are well prepared to work effectively with an increasingly diverse student population. The purpose of this research project was to attempt to obtain some initial data on graduating teacher candidates' perceptions of the impact of these courses on their development as beginning teachers through a questionnaire mailed out in April 2010.

Our discussion of the significance of the teacher candidate responses reported in the previous section for effective and inclusive pre-service teacher education needs to be prefaced by several limitations. Our data comes from a very limited source – the perceptions of a small sample of graduating teacher candidates at the University of Manitoba collected through a questionnaire. Much more could be done here in terms of a deeper and more complete exploration of teacher candidates' perceptions, and a more longitudinal study of teachers' perceptions as they enter the profession and become experienced teachers. Further, while teacher candidates, we believe, should provide an important source of information to guide program development in the Faculty of Education, they are only one source, and no attempt in this study was made to collect data from other important sources, such as the instructors teaching the courses. The study was designed and conducted by three researchers, all of whom have taught Cross-Cultural Education courses at the University of Manitoba and who have a longstanding commitment to multicultural and anti-racist education and teacher education and whose biases and perspectives have inevitably shaped the design of the study and the interpretation of the responses. Mindful of these limitations, in this section we highlight a number of themes that seem to us significant, with the hope that they will contribute to the Faculty's ongoing discussions about, and commitment to, high quality teacher education for sustainability and social justice.

### *Theme #1: The Ethno-Cultural Profile of Teacher Candidates:*

The background data collected from this research presents a profile of teacher candidates at the University of Manitoba as largely English and French speaking, born in Canada, with European cultural backgrounds. Some 12% of respondents reported Aboriginal cultural backgrounds, but none reported fluency in an Aboriginal language. This profile stands in sharp contrast to the current and projected Manitoba school population discussed earlier in this paper. This is especially true in Winnipeg and other urban areas. As discussed earlier, at a point in time when Aboriginal and Visible Minority students entering Winnipeg schools are quickly approaching the 50% of mark of the total student population, the findings from this research project suggest that current teacher candidates are not all representative of the great diversity that is present in the current and future student populations. This mismatch would seem to us to be important both as an admissions/recruitment issue, and in terms of the need for, and shape of, cross-cultural and Aboriginal Education in the Bachelor of Education program.

### *Theme #2: Teacher Candidates Varied Prior Experiences with Diversity and with Aboriginal Peoples and Cultures.*

While overall teacher candidates reported greater prior experience with "human diversity" than they did with "Aboriginal peoples and cultures" (not surprisingly since the former is a broader designation than the latter), the data showed, both (i) a wide range of responses – some teacher

candidates reporting extensive prior experience while some reporting moderate of little prior experience, and (ii) a considerable proportion of graduating Education students reporting little prior knowledge of human diversity (21%) and Aboriginal peoples and cultures (49%). This data, we would suggest, supports the importance of diversity education and Aboriginal content and perspectives as a central aspect of the Bachelor of Education program.

The range of prior experience reported provides a challenge for course construction when course offerings and options are limited with currently no provision for any sort of “introductory” and “advanced” coursework that would be reflective of the different levels of awareness brought to the program.

#### *Theme #3: The Pragmatic Character of Student Course Selection*

Like most other Canadian Bachelor of Education programs, the University of Manitoba program consists primarily of required coursework (and practica) with fairly limited opportunity for teacher candidates to select which courses they will take. Furthermore, since teacher candidates need to meet provincial certification requirements and need also to be sensitive to the perceived priorities to employing school divisions, it is not surprising that teacher candidates’ stated reasons for taking diversity and Aboriginal Education courses had a distinctly pragmatic bias. While there may be different ways of interpreting responses to the questionnaire items related to teacher candidates’ reasons for taking courses, it would seem to us that they give some support for the importance of mandating coursework in the area for all pre-service teacher candidates.

#### *Theme #4: What do Teacher Candidates See as Valuable in these Required Courses?*

A significant number of teacher candidates expressed frustration or difficulties with connecting the course content and experiences with the reality of classrooms and practice. This suggests that initial teacher preparation courses related to diversity need to balance critical inquiry and other aspects of the courses with focused explorations of the implications or models for practice. It also, points to the importance of supporting ongoing professional learning in this area as teachers progress from the novice and induction stage of their careers to become experienced and skilled professionals.

#### *Theme #5: Teacher Candidates’ Confidence as Beginning Teachers in Diverse Classroom Settings*

While some teacher candidates’ responses suggested resistance to unpacking white privilege and other aspects of a critical perspective, a significant number seemed to overestimate their ability to provide appropriate educational experiences for diverse learners. While the majority reported modes to limited personal experience with diversity, most rated their preparedness for diverse classrooms as moderate to high.

## **2.5 Conclusions**

This initial research project has pointed to some important issues and questions related to the diversity of teacher candidates and the impact and value of Aboriginal, cross-cultural, and other diversity and equity related courses on teacher candidates as identified in the five themes that emerged from the research, covered in the discussion section of this paper. Most importantly, this

research project has convinced us that a fuller, deeper, and longitudinal study would provide valuable insights into several of the themes and issues that emerged from our research and the literature.

## 3 Project 2:

### *Developing Scientific Literacy through Education for Sustainable Development in a Small School Network (Petites écoles en réseau)*

*Project Leader and Section Author:*

Rodelyn Stoeber (Collège universitaire de Saint-Boniface)

#### 3.1 Introduction

The study focused on how technological tools such as Wiki and Elluminate could be used by participants in a study to promote scientific literacy through the enrichment of teacher understanding of Education for Sustainable Development. Activities and problem-based scenarios were created in collaboration with teachers, a scientist at St. Boniface College (CUSB), and the science and sustainable development consultant from the Bureau de l'éducation française (BEF). The consultant responsible for middle years recruited the teachers for the project. The teachers received professional development with regards to the concepts of sustainable development, the issues, the use of scenarios to enhance student involvement and motivation and the use of Internet technologies to foster meaningful conversations centered on the learning contexts created. The concepts of sustainable development were explored around 2 different contexts – bodies of water in the community and composting. This study employed qualitative research strategies which included individual teacher interviews, discussions during professional development sessions and online communications such as email and discussion groups. The research questions for the study included the following:

1. What resources (problem-based scenarios, articles, Internet Web sites, etc) and technological supports are conducive to supporting the development of attitudes, competencies and understandings about sustainable development in Francophone science teachers?
2. What is the impact of this professional development on student engagement and learning for sustainable living?

In this pilot project, the first question was explored by the researchers. The second question will be studied in future work.

#### 3.2 Challenges

A number of challenges were encountered from the beginning of the project. There was a miscommunication with the teachers recruited for the project which resulted in a delay with the launch of the project which was supposed to start October 16, 2009. An alternative date was

planned for November 20, 2009 but problems in teacher availability resulted in the cancellation of this meeting. The first meeting with the participants finally took place on Dec. 11, 2009. This late project launch date affected the participation of CUSB students in the Faculty of Education since they only had 2 classes of one hour and a half each after this date and would not be able to really contribute to the project. Further challenges included finding other meeting dates where all participants would be present as well as problems with the technologies implemented. Despite involvement of the technology coordinator in the verification of the network and computers, technical issues with regards to the speakers, microphones and network connections were continued sources of stress for implementation of the project.

### **3.3 Project Implementation**

An interactive website or Wiki, describing the project, its objectives and ideas for introducing and teaching the concepts of sustainable development and how these concepts relate to the study of community bodies of water and the composting project was created prior to the professional development (PD) sessions. Pre-activity, activity and post-activity lesson ideas were provided for familiarizing students with the issues regarding community bodies of water such as Lake Winnipeg. A partnership with the group Ecokids led to the public posting of these activities in their database of activities on their website (<http://www.ecokids.ca/pub/index.cfm>). For the composting section, experiments were posted that were directly linked to outcomes from the Manitoba science curricula. These experiments were done using a “microcomposter”, a tool developed by Fernand Saurette, a scientist working with the project for the goal of studying biodiversity in this type of microecosystem. A more detailed description of the experiment is found in Stoeber, Saurette, Dubois-Jacques, and Gravel (2010).

During the first PD session, participants were introduced to the central concepts of education for sustainable development by the science and sustainable development coordinator from the BEF. The objectives of the project and the research were discussed and teachers received training on the use of the Wiki. They were invited to reflect on a possible plan for using the resources in the Wiki and to share their ideas with others in the group. Participants were encouraged to communicate with each other and with researchers and other experts using the Wiki as well as the traditional methods of E-mail and telephone.

Sharing of experiences took place during the second PD session. Participants discussed which resources they used as well as the ones they developed themselves. They also brought and discussed the student products for the project. The Communications Officer in charge of Education and Outreach from Riding Mountain National Park presented the activities that she had posted on the Wiki. Previous to this session, the officer and the biologist from Riding Mountain National Park received training on how to use the Wiki and how to communicate with participants using Elluminate. One of the teachers worked closely with this officer for his project and created a video depicting how to test water quality with his students. The context for composting and using a “microcomposter” for experimentation and exploration of biodiversity was also introduced in this session.

In the next PD session, teachers received training on composting, the different elements of composting and the experiments to be done using the microcomposter. They received training on how to post their data to the Wiki. Elluminate sessions for communication with the scientist were

planned with teachers so that students could discuss questions and concerns with him. Elluminate meetings were planned after school to discuss progress in the project.

During the final PD session, the objectives of the project were discussed in terms of challenges and successes. Teachers shared some of the products created by the students and reflected on how the project helped them professionally.

### **3.4 Concluding Comments**

We are in the process of transcribing and analyzing the data from this project in order to respond to the first research question. Further funding has been sought to continue the study of community bodies of water and issues with respect to education for sustainable development and to support teachers in their teaching endeavors. We plan on continuing work with the Wiki as a resource for teachers according to their needs and to develop a plan for addressing the second resource question. The school division is currently working on improving the technology tools and network for the use of Elluminate.



## 4 Project 3:

### *Sustaining Linguistic and Cultural Diversity in K-12 Schools: Immigrant Teachers as Agents of Change*

*Project Team:*

Clea Schmidt (University of Manitoba)

Subbalakshmi (Kala) Kailasanathan (Wellington School, Winnipeg School Division)

*Section Author:*

Clea Schmidt

#### 4.1 Background

Immigrant teachers are marginalized by systemic barriers facing them as newcomers and as teachers who differ from the predominantly white, middle class, English-speaking, Canadian born teaching force found in most Canadian schools (Canadian Teachers Federation, 2006). The main challenges facing immigrant teachers as documented in the Canadian education scholarship include barriers to credential recognition and employment discrimination (Schmidt, 2010; Schmidt & Block, 2010). Immigrant teachers also experience socio-economic barriers and challenges to personal and family well-being as they and their families settle and respond to the complex social, cultural, and linguistic demands of their new environments.

As part of the larger Education for Sustainable Development project led by Drs. Thomas Falkenberg and Gary Babiuk, a critical participatory action research project with immigrant teachers was carried out in 2009-2010, to document the contributions immigrant teachers make to K-12 communities from the teachers' perspectives. The project adopted a critical stance, assuming that to challenge the marginalization of immigrant teachers in the education system and advance an agenda of sociocultural sustainability, which promotes and affirms not only student diversity but teacher diversity, requires changes to dominant research approaches and epistemologies. In particular, immigrant teachers need space in which to individually and collectively explore issues they face as members of various sociocultural groups (e.g., minority teachers, immigrants, parents, EAL learners). It is the intention that with research of this kind among other advocacy efforts, those contributions can be recognized and affirmed in a sustainable manner that facilitates the intercultural engagement of all students in Manitoba.

#### 4.2 Methodology

Data were collected through background questionnaires, focus groups, and journals that the teachers and research team kept, to document critical incidents and perspectives around the role of immigrant teachers in MB schools.

Aligning with the participatory dimension of the project, the teachers felt comfortable shaping the focus and the structure of the sessions; they came forward with issues they wanted to address and when issues arose around timing of sessions they had no problems suggesting alternative ways of structuring the sessions.

Critical participatory action research is concerned with “what people do, how people interact with the world and with others, what people mean and what they value, and the discourses in which people understand and interpret their world” (Kemmis & McTaggart, 2005, p. 565). The critical aspect of the methodology challenges existing inequities that marginalize immigrant teachers in K-12 schools and works toward social change; the participatory dimension ensures that the immigrant teachers have ownership of the research process; and the action research component facilitates sustainable (i.e., ongoing) outcomes that will directly impact the teachers, their professional practices, and the schools and classrooms in which they work.

Six immigrant teachers holding a variety of school-based positions (e.g., full-time teaching positions, substitute or term teaching positions, paraprofessional positions) participated in the project. The teachers had been in Manitoba anywhere from a few months to over 30 years. In addition to the background questionnaires and journals, five focus group meetings were held. As one strategy for addressing the power relationships that affect the research process, focus group participants were invited to chair sessions on a rotating basis, with topics for discussion determined by consensus among the teacher participants. This helped to ensure that the research was genuinely participatory and not driven solely by the needs and interests of the research team.

### 4.3 Findings

The data revealed insights ranging from IETs’ challenges and experiences of discrimination to stories of hopes and success. Particularly poignant were IETs’ perceptions of the numerous positive contributions they make to the school communities in which they work. These contributions include an ability to respond well in intercultural situations, multilingualism, and rapport with learners and families from diverse backgrounds.

Teachers shared their perceptions of how they were making a difference in the lives of the students they have worked with. They talked about establishing meaningful relationships with children from a variety of backgrounds; many of these children were marginalized in some way and found that they were able to make connections with the immigrant teachers that were absent in their interactions with other school personnel. The immigrant teachers accounted for this by explaining that the children seemed to identify on some level with the fact that these teachers, too, were to some degree outside the mainstream, and that made the students feel they had something in common. IETs shared stories of reluctant and withdrawn learners “coming out of their shells”, feeling comfortable to talk with the immigrant teachers about their lives and challenges they were having. Having these insights enabled the teachers to develop appropriate programming and materials to facilitate students’ learning.

These findings make a significant contribution to the advocacy agenda supporting IETs’ integration in Manitoba schools. Sometimes the danger arises of suggesting that immigrant teachers are only suited to working with students from their own linguistic and cultural backgrounds but this project offered some compelling evidence that immigrant teachers have a great deal to offer children from a range of backgrounds.

#### **4.4 Implications for Education for Sustainable Development**

Some indicators of sustainability within the framework of the project include the fact that relationships were established that continued outside the scope of the focus group meetings. Connections were also made with the Educators of Colour professional development group recently launched in Seven Oaks School Division. As a means of giving back to the IET participants and the broader IET community, a professional development workshop series was launched. The first one addressed resumes and portfolios and the second one will look at interviewing skills and strategies. Next steps include establishing a professional organization for immigrant teachers that would be led by immigrant teachers (for example, in the form of a SAG group). The goals would be to bring together immigrant teachers to discuss challenges and solutions and also to implement more formal kinds of professional development than currently exist, such as supports for those IETs in substitute teaching roles.



## **5 Project 4:**

### ***Unite to Change***

#### *Project Leaders and Section Authors:*

Jacky Molyneux (Vice Principal, West St. Paul School, Seven Oaks School Division)

Peter Krahn (Vice Principal, Maples Collegiate, Seven Oaks School Division)

Allison Waskul (Teacher, Seven Oaks Middle School, Seven Oaks School Division)

Jolene McFadyen (Teacher, Governor Semple Elementary School, Seven Oaks School Division)

Daniel Leclair (Teacher, Elwick Community School, Seven Oaks School Division)

Fortunato Lim (Teacher, Maples Collegiate, Seven Oaks School Division)

### **5.1 The Project and the Research Questions**

The project leaders have been involved with the project since its conception in the fall of 2008. Resulting from participation in Unite to Change efforts, and/or an interest in ESD, the following people have joined the Unite to Change Teacher Team: Carol Moar, Special Education Coordinator, Craig Melanson, teacher, Victory School, and Barb Cerelli, Vice Principal, Edmund Partridge Middle School.

It is important to note that Unite to Change has become a grassroots movement within Seven Oaks School Division, serving to promote Education for Sustainable Living. The grassroots team includes teachers, students, school trustees, administration and support from the superintendent. For purposes of this report, only teachers/teacher leaders have been named.

Subsequent to attendance at a SEdA conference (Sustainability and Education Academy) in the fall of 2008, Jacky Molyneux and Peter Krahn, in conjunction with two Seven Oaks school trustees, became interested in working towards propelling forward ESD understandings of teachers and students within Seven Oaks School Division. Pursuant to a meeting with the superintendent, it was agreed that a group of teachers, students and teacher leaders would form a team in pursuit of collectively growing together in Education for Sustainable Development/Living. This desire gave way to the notion of creating a series of Youth Conferences bringing together students and teachers within the Seven Oaks School Division, as a way to make current successes transparent and to deepen understandings regarding the various pillars of ESD (environmental, socio-economic, socio-cultural, and health and well being.) The term Unite to Change was coined during one of the group meetings, as the name for the first of our conferences. As a result of being linked with Gary Babiuk and Thomas Falkenberg, the teacher team of Unite to Change became interested in researching the conference structure as a means of supporting teacher professional development within Seven Oaks School Division. Teacher professional development sessions were developed before, during and after the Youth Conferences to help discern ESD understandings and to ascertain, the knowledge, skills, resources and professional development opportunities necessary to elevate and deepen ESD understandings and teacher practise with Seven Oaks School Division. From conception, ESD was viewed as an embedded endeavour, as opposed to one more course for teachers to teach.

*Research Questions:*

- How can we assess teacher attitudes/commitment to Education for Sustainable Development/Living, through participation in the Unite to Change Conferences?
- How can the school division support teachers in their practise within the classroom based on this assessment?
- What professional development opportunities /resources can deepen ESD understandings?
- How does Unite to Change become sustainable?

**5.2 Implementation of the Project**

*Fall of 2008:* In response to an invitation from the superintendent to school leaders, two teacher leaders and two school trustees attended the SEdA Conference (Sustainability and Education Academy.)

*Fall of 2008:* A team of students, teachers and teacher/leaders formed out of an interest in Education For Sustainable development within Seven Oaks School Division. The idea of growing together a series of Youth conferences including students and educators, side by side, learning about ESD— evolved. The agreed upon name for these efforts became—Unite to Change.

*May, 2009:* The first Unite to Change Youth Conference was held on May 1, 2009 at the Garden City Inn. This conference brought together teacher/student teams from each of the Schools in Seven Oaks School Division in grades 4-12. A keynote address was given by Edward Schreyer, on the environment. Participants took part in a Tai Chi warm-up session. In the afternoon, Cameron Cross, art consultant from Pembina Trails School Division, lead us in an art activity which repurposed vinyl records into a collective art activity depicting themes of sustainability. Notions of recycling and composting were tied into lunch.

As a concurrent session, a teacher professional development opportunity was held in which teachers discussed their notions of ESD, their involvement in ESD on a school/class basis and ways in which sustainability could be fostered/sustained. This data provided insight into teacher understanding of ESD notions.

*Spring of 2009:* Responding to a call for research proposals, put forth by Gary Babiuk and Thomas Falkenberg, the Unite to Change teacher team seized the opportunity to think about the conferences as a divisional structure/lens through which to view teacher professional development and ESD.

*October, 2009:* A second Unite to Change conference was planned and held at Thunderbird House. Once again, teacher/student teams consisting of 2-4 teachers and 2-4 students were invited to the conference. Kevin Chief, from the University of Winnipeg, spoke to the group on student leadership. Our divisional elder presented an aboriginal perspective; lunch was catered by Elsie Bear's kitchen. This conference focussed more upon socio cultural components of ESD. In the afternoon a series of mini trips were offered to: Brady Landfill, Siloam Mission, Graffiti

Gallery, an Exchange District walking tour and an art session was held at Thunderbird House. Students were requested to provide feedback via a student survey.

*Pre-Conference Opportunity:* Prior to the fall conference, teacher participants were invited to attend a professional development ESD session, by Anne MacDiarmid, the ESD consultant from Manitoba Education, Citizenship and Youth. Anne articulated understandings of ESD, and navigated the group through ESD resources available via Manitoba Education, Citizenship and Youth. Teachers had time to navigate the Manitoba Ed website. Cathy Shaluk from the Nature Conservancy of Manitoba also made a presentation to this group of teachers. At this time, a pre-conference survey was given to teachers as a means of data gathering for the research team. Questions were asked in areas of interest, ESD understandings, professional development, resources and understandings of ESD embedded within school cultures.

*January, 2010:* Teachers having attended a previous Unite to Change event, were invited to bring students on a tour of the Brady Landfill site. Most teachers decided to bring students who have not yet been involved in a Unite to Change Event. At this time, teachers filled out a post conference survey, aiding the research team in the collection of data ascertaining benefits of participation in the Unite to Change conferences and PD opportunities.

*January, 2010:* The Unite to Change teacher and student team, continued to meet bi-weekly/monthly in preparation of future Unite to Change events. At this time, the notion of smaller earth summits evolved, utilizing the family of schools structure already present within Seven Oaks School Division. Each family of school subcommittee became responsible for coordinating a smaller Unite to Change forum on the environment to be held on Earth Day (April 22).

At this time, plans were also put in motion to begin planning the next Unite to Change Conference in the Fall of 2010.

The Unite to Change teacher teams met with Thomas Falkenberg in a discussion outlining the impact of Unite to Change upon the team's own professional development and ESD understandings.

*March 2010:* Project leaders attended a city wide green/sustainability forum with representatives from various City of Winnipeg departments and businesses. The focus of the forum was to discuss how goods are procured as a means of promoting sustainability. Jacky Molyneux and Peter Krahn, supported by the school division were fortunate to attend this seminar and connect with multiple stake holders, buyers and business from within Winnipeg. This opportunity offered the facilitation of understanding and communication between government, education, health and business and was worthwhile as a way of further elevating consciousness around environment, culture, social justice and well being of our city and local communities. Representing Unite to Change offered another means of networking and building community connections useful in the development of future conferences and professional development opportunities for teachers.

## **5.3 Observations**

### **5.3.1 Observations Concerning Sustainable Living:**

Data collected from the first Unite to Change Conference indicated that many ESD initiatives were already taking place within Seven Oaks School Division. Many examples of extracurricular class/school initiatives were listed and shared.

Via data collected through pre conference and post conference surveys, teachers responses indicated that they were already passionate regarding the teaching of ESD, and that they were already working on incorporating ESD learning opportunities into their teaching practise. Most teachers made comments to the effect that they had already been working on ESD initiatives without formally being aware of the terminology. Survey data indicated that involvement in the Unite to Change Conferences, and pre and post conference PD opportunities—deepened teacher understandings of the strands of sustainable living, and provided a common language for which to describe what teachers are already doing.

Pre and post survey comments indicate that most of the teachers involved in the Professional Development opportunities (session with Anne MacDiarmid, Brady Land Fill Tour, PD session at First Conference) believed that these opportunities helped them to make connections between the four strands of sustainable living and to do so with increased frequency within their classroom practise.

Many teachers have indicated that they are incorporating ESD components into teaching and learning, that ESD is not merely an add on in most instances.

Survey data and focus group discussion clearly indicates that the Unite to Change conference structure and PD opportunities contributed to raised levels of awareness/understandings regarding the principles of sustainable living and the strands of ESD. The ripple effects of the Unite to Change Project continue to immerge as stories are shared via meetings, conferences, websites etc. Groups devoted to ESD are being formed in Unite to Change schools at all levels, inspiring classes and staff within schools to delve deeper and more often into ESD topics of interest. Planning Committee members have all indicated, via journaling and a focus group setting—their emergence into areas of shared leadership as a result of their involvement with Unite to Change. Team members indicate that they are being invited to lead ESD initiatives at staff meetings, for example.

### **5.3.2 Observations Concerning Teacher Professional Development**

Unite to Change began as the result of two school administrators and two school trustees attending SEdA—the Sustainability and Education Academy run out of York University. The attendees were financially supported by the school division. This seminar deepened ESD understandings of the participants and provided collaborative time for the attendees to develop an action plan to take back to their perspective school divisions. Post SEdA, all four participants met with the Superintendent of Seven Oaks School Division, who further supported the formation of an interested group of teachers and students for the purpose of planning a conference that would bring together students and educators from within Seven Oaks School division in an effort to collectively grow in ESD understandings and to celebrate the many ways in which sustainable

living was already thriving within Seven Oaks School Division. Participation in the SEDa conference was inspirational and pivotal to the subsequent Unite to Change movement. Support from school trustees and the superintendent was fundamental in growing the Unite to Change network. Each of the Unite to Change Conferences brought together representation from most of the schools within Seven Oaks School Division. An initiative of 4 people has grown into a divisional structure in support of education for sustainable living. What began as 4 people, now includes a planning committee of administrators, school trustees and students (in excess of 15 members). Over 120 participants have been involved in each of two Unite to Change conferences. Increasingly, teachers are asking to bring more students to these conferences. Not only has Unite to Change grown in numbers, survey data highly indicates that participation in these conferences and in the pre and post pd conferences has deepened ESD understandings and notions of an embedded quality to ESD as opposed to “another activity or course to teach.” Repeatedly, the collected data has shown that Unite to Change has helped our schools to develop “common ground”, a “common language” in matters of ESD. Participation in Unite to Change has fostered a sense of community and collective urgency in matters of sustainability. Unite to Change has served to raised a collective Seven Oaks consciousness regarding ESD, sustainable living and the various strands of ESD.

Many positive teacher comments were made in regards to the pre conference PD session with Anne MacDiarmid as well as the guided tour of the Brady Landfill site. Several teachers commented that the PD session with Anne MacDiarmid was the spring board for the raising of ESD issues and knowledge of resources available in this regard. Several teachers advocated for subsequent sessions with Anne MacDiarmid at their school levels bringing ESD to forefront of professional development within individual schools.

During a focus group session with Thomas Falkenberg, members of the planning team articulated growth in their professional learning and development as a result of their involvement on the planning team. Asked about the impact of Unite to Change upon teaching practise, it was indicated many times, that passion/awareness for ESD was heightened, and issues were brought to the forefront as a result of participation in the Unite to Change Process. ESD was described as a lens through which to propel forth the curricular notions of environmental citizenship, social justice issues etc. Team members each told stories of their own development as leaders within their perspective schools, in matters of ESD. Passion, fuelled by deepened knowledge and understanding has created quite the ripple effect in many of the schools within Seven Oaks School Division. Support of administrators and superintendents has been viewed as critical. Several comments indicated that Unite to Change has sparked involvement of teachers who typically have not be drawn towards committees or endeavours of this kind.

Documentation collected via planning team journaling, indicates that the Unite to Change project has raised the level of ESD awareness for all who were involved from all levels within Seven Oaks School Division. Involvement in the research aspect of the project has proved to be a positive professional learning opportunity. Team members indicate that being part of the project has exposed them to a wide range of ESD initiatives, knowledgeable and energetic colleagues and research which in-turn has generated strong feelings of ownership. Involvement in Unite to Change has developed capacity amongst team members as advocates, researchers and leaders of ESD.

In terms of sustainability, planning team member indicate that the opportunity for sustainability in our division is very strong. With each passing conference, we have been invited new people to take part and are now creating smaller PD and networking opportunities through which to develop more intimate connections with educators whose schools are in close proximity.

Educators and students are excited about ESD with each additional conference and learning opportunity. Unite to Change has provided a collegial structure that has caused understandings of sustainable living to bloom and grow with Seven Oaks School Division.

### **5.3.3 Observations Concerning Students' Development**

Student surveys and participation on the Unite to Change planning team indicates that most students who participated on the Unite to Change journey conceptualize most strands of sustainable living very well. It appeared as though students at different ages, or from varying backgrounds, were able to draw upon the cultural capital that was gained through personal and/or school experiences and apply it to what they were being exposed to at Unite to Change conferences. Unite to Change conferences provided the opportunity for students in grades 4-12 to grow an ESD community of learners within Seven Oaks School Division. Student surveys indicate that participation in the conferences provided the opportunity to become school leaders in matters of social justice and environmental citizenship. As the conferences appear to be attracting already ESD savvy students, one might wonder if we are attracting likeminded people who already exhibit an understanding and desire to be a part of ESD initiatives be it locally or divisionally. If so, how can we make sure to be as far reaching as possible within all of our schools?

## **5.4 Questions that Arose During the Project**

The following questions arose during the projects:

- How do we continue to share what we are doing with others?
- How do we get more students/educators involved?
- Is it merely the “early adopters” that have championed the cause?
- Should Unite to Change be the only divisional response to ESD?
- How do we keep topics at the conferences relevant for K-12 students?

Our intention of inclusion, albeit a great endeavour, has lead to a few minor problems in that we are working with students and teachers who originate from a wide spectrum of grade levels. As this is the case, it does pose planning difficulties in that we must find ways to inspire, teacher and most importantly design activities that will resonate with all participants. This has been a challenge but one we are very happy to have as it suggests that ESD is important to all levels of educators and students within Seven Oaks School Division. The four strands not only transcend grade level but position be it teacher, superintendents, trustee, administrator, student or special education coordinator.

Another concern we encountered was our necessity and desire to live what we discuss and promote. We no longer have the luxury to be negligent in our planning, we must be sure to make every effort to plan conferences with the four strands of ESD in mind. The environment component is one area that is very prevalent. When providing lunch for the conferences, we need to ensure that we are using compostable or biodegradable plates, bowls, and cutlery. Drinks also need to be provided in a way that will lesson our environmental footprint. We have also

recognized that we must take transportation into consideration as fuel is being used by participants every time a Unite to Change conference is hosted. For this reason, we came up with a family of school summit structure which enables us to break down our division into three smaller areas and in doing so provides the schools that are close to the high schools the opportunity to walk. We are aware that this is but one solution and are therefore confident that issues such as this will continue to present themselves and we will need to work as a team to generate solutions.

Although survey data found a high level impact regarding the professional development offerings upon teacher practise and ESD understandings, teacher comments clearly indicate that these endeavours served a good beginning experience, and that there is much room for more professional development and networking opportunities as well as access to resources that will support classroom work.

## **5.5 Where to Go from Here**

- Planning of the family of school summits for Earth Day (April 22, 2010)
- Promoting the use of the internet/intranet to share division wide ESD activities, resources.
- Planning the fall Unite to Change Conference.
- Presenting at the Middle Year's SAG group in fall 2010.
- Development of a plan to continue teacher professional development and networking opportunities in the four strands of ESD, with particular attention drawn to the creation of school cultures that embed ESD principles into their beliefs and practises.
- Finding ways to ease teacher access to resource materials and local resources regarding all strands of ESD.

## **5.6 Final Comments**

Participation in the research of Thomas Falkenberg and Gary Babiuk was a great opportunity through which to take the Unite to Change work to deepened levels of teacher and student ESD understandings. Involvement in the project fostered a link through which to focus upon teacher practise and professional development. Although the first conference did include a teacher development piece, linking up with the research project, led to a more systematic and intentional approach to ESD professional development for teachers. The collection of data through pre and post surveys, focus groups and journaling indicates that the professional development opportunities provided through the Unite to Change structure, is a good start for Seven Oaks School Division. We are clear that our work is not done—simply beginning. The goal is to continue Unite to Change initiatives mindful of broadening participation in it. Taking part in this research project has been a great professional learning experience for all involved and for the project's teacher team in particular. Attending meetings at the University of Manitoba alongside other project participants has offered a very positive networking opportunity. We look forward to staying connected with the project members in some format.



## 6 Project 5:

### *Thinking Globally, Acting Locally: Building a Garden in Our Community Space*

#### *Project Leaders:*

Joey Robertson (Early Learning Support, West St. Paul School, Seven Oaks School Division)

Jessica Dilts (Teacher, West St. Paul School, Seven Oaks School Division)

Leanne Yeo (Teacher, West St. Paul School, Seven Oaks School Division)

Jaime Carpenter (Teacher, West St. Paul School, Seven Oaks School Division)

#### *Section Authors:*

Jessica Dilts, Leanne Yeo, and Joey Robertson

### **6.1 The Purpose of the Project**

- to provide children with opportunities to help them identify themselves as global citizens, to support their connections with the environment, and to help them realize the interconnectedness of communities around the world.
- to create an aesthetically pleasing outdoor classroom which will help to support the appreciation and connections of those involved with the surrounding environment.
- to build a monarch sanctuary on the grounds of West St. Paul School where it is accessible to the community of students and residents.
- to create a vegetable garden on the grounds of West St. Paul School with intentions to donate our harvest or to support the local community.
- to provide a compost for the school population to use so that we can be more environmentally sustainable and to help in the reduction of additional and unnecessary waste in our landfills.
- to support this educational and meaningful journey by integrating aspects of the Reggio Emilia approach.

### **6.2 Implementation of the Project**

#### *May 2009*

- Attended initial ESD meeting at the University of Manitoba

#### *June 2009*

- Team meeting held at the school to review timelines and begin planning phase
- Staff is informed of our project at staff meetings

- Garden meeting is held with intention to activate interests and get more involvement from staff

### *September 2009*

- Plans for building garden are outlined
  - 2 garden beds to be built each with the following dimensions: 10'×4'×2'
  - Garden meeting held to inform staff members of our project and to include them in the planning and execution of our garden beds
  - Note sent to community to inform them of our intentions, ask for support from available/interested community members, provide them with the dates of when the garden beds are to be built and our plant date for the tulip bulbs in the vegetable garden bed
  - Team meetings held throughout the month to update research and spend time reflecting on the project's progress, the planning and organizing that is occurring, and articles the group is reading
- Grade 5 class spends time inquiring into where the garden beds can be placed based on sunlight, areas available, aesthetics, and ground level
- Started researching prices, appropriate plants and vegetables for the garden beds
- Current research:
  - Contacted Tammy from Schreimers re: plant design
  - Determined tulip bulbs will be planted in the vegetable gardens and that pumpkins and squash will be planted in the vegetable gardens
  - Researched plants to be used for the butterfly garden and plant design
  - Pricing for the bulbs, plants, flower beds, and soil delivery
- Outlined the following dates:
  - Garden beds to be built by October 20, 2009
  - Plant dates set for October 26-28, 2009
- Hired a community member to build 2 garden beds

### *October 2009*

- Garden update put in the school's newsletter outlining the progress, connections to learning opportunities, and identifying next steps
- Attended a Parent Council meeting to inform them of our current project and our future goals for it
- Held Team meetings throughout the month
  - Questions: how can we sustain this project after the grant ends? How can we build more awareness and participation in and outside of the school?
  - Discussions have started about how to make others more aware of the project, how to make it more sustainable, and what that would/could look like
  - Conversations around how to generate excitement through the winter months where there will be very limited activity around the gardens
  - Composting updates discussed as a group
  - Began discussing opportunities to turn the gardens into more interactive, educational, and engaging spaces
    - Incorporating art – Alice
    - Visitation to the Discovery Centre set for November 18, 2009

- Attended Large Group Meeting at the University of Manitoba
- Revised dates:
  - Garden beds to be delivered by October 26, 2009
  - Soil delivery set for October 26, 2009
  - Garden beds to be filled with the soil by October 30, 2009
  - Plant date set for November 5, 2009 (planting tulips)
- Documentation of the Grade 5s experiences and learning around their research into the garden bed placements

#### *November 2009*

- Visited the Discovery Centre
- Provided staff with a garden project update at staff meeting
- Filled garden beds with soil and planted tulip bulbs with students
- Held Team meeting
  - Reviewed and reflected on the progress of the project
  - Discussed the visitation to the discovery centre, incorporated ideas for winter activities for the students (including snowhills, skating rinks, outdoor education opportunities, etc.)
    - Shared and discussed possible new school goals which coincide with our current project and beliefs
  - Continued brainstorming possible ways to increase participation, engagement, excitement, and sustainability of our project
  - Shared reflections on article: *Integrating Nature Experiences into Early Childhood Education* by Mary Sweatman and Alan Warner

#### *December 2009*

- Shared our experiences from the Discovery Centre with the staff at the Staff Meeting
- Attended the Large Group Meeting held at the University of Manitoba
  - Learned about Stony Mountain School reaching Earth IV status with the SEEDS program
  - Shared our goal with the large group: to embed ESD into the culture of our school thereby making it sustainable
    - How can we do this?
- Held Team meeting
  - Reflected on Large Group Meeting
  - Discussed challenges we are experiencing, successes we have had, and how to best document our project

#### *February 2010*

- Attended the Large Group Meeting held at the University of Manitoba
- Held Team meeting, discussed article *Criminalization of Natural Play* by Richard Louv in “Last Child in the Woods – Saving our Children from Nature-Deficit Disorder”

*March 2010*

- Team meeting cancelled due to conferences, and out-of-province PD

*April 2010*

- Held Team meetings throughout the month
  - Planning and organizing the final report due at the end of the month
  - Planning and organizing our final purchases for the garden beds: plants, tools, etc.
  - Outlining plant dates and design and the organization of this
  - Brainstorming ways to re-activate interests and engagement so that the garden beds can be used school-wide for a variety of activities
    - Planning a Garden Meeting for interested staff where we can generate ideas, activities, and educational opportunities that can be incorporated into a variety of classes

## 6.3 Observations

### 6.3.1 Observations Concerning Sustainable Living

- From our observations, we see that teachers are on a continuum of understanding ESD, that is to say that some teachers see connections between the 4 strands of sustainable living and see ESD as embedded within curriculum – whereas other teachers are at the beginning stages of moving away from conceptualizing ESD as a separate subject or curriculum to teach.
- As a school community, many of our conversations about ESD still tend to focus around the environmental strand – looking at waste, recycling, etc.
- Our project has contributed to the conversation about sustainable living at our school in a variety of ways:
  - Providing time and opportunity to meet and collaborate around the garden project
  - Contributing to the beginning of creating a culture of teaching in which notions of ESD are embedded in curriculum
  - Providing the ‘spark’ for conversations to occur between teaching staff around ESD

We understood that the garden had contributed to our growing understandings of sustainable living within our school when we made note of statements made by staff members at our last PD day in May. Using a SMARTBOARD as a visual tool, we began to work together to discuss different ‘projects’ that are happening within our school space. As we discussed those projects, we began to also show the connections between the projects and the different ESD strands. This activity made visible the work we are doing, and how it is all connected with one another within the context of ESD.

### **6.3.2 Observations Concerning Teacher Professional Development**

- We had difficulty with communication – with other teachers and classrooms in the school, and with the community. We kept noticing that despite our perceptions that we were effectively informing others about the project, situations would arise that would indicate that we were less than successful with our information sharing. Our efforts included regular updates at bi-weekly staff meetings, ongoing e-mail communication with members of the school community, and notices sent home to families with students on a regular basis.
- We discovered that placement of the gardens within the schoolyard was more complex and time-consuming than we had envisioned. Competing demands for space in the school playground meant that we had to consider and consult with many staff on multiple occasions about the location of each garden
- We noticed that we experienced difficulty in sustaining attention to the project during periods in which there were competing demands for our time.
- We came across a barrier to the project that we did not consider within the development of the garden – vandalism. Students began tossing dirt out of one of the gardens, as well as removing bulbs that were planted.
- Although the focus of our project was to consider how to ensure the gardens sustainability if all the primary participants of our garden project were to no longer be a part of the school, we feel that at this point in time the project is still highly vulnerable. In our opinion, our project sustainability is weak at this point in time.
- We had anticipated greater interest and participation from others within the school, but have not yet been able to expand the garden to an entire school endeavor.
- Our attempts at composting within two classroom spaces taught us a great deal about the feasibility of conducting composting on a grander scale.
- Data were collected in the form of a recorder joining our meetings on several occasions, as well as ongoing journaling after meetings. Based on our experiences, we noticed that having an ‘outside other’ to record our meetings regarding the garden increased our accountability to following through with meetings despite competing demands and supported us in staying focused throughout our meeting times.

### **6.3.3 Observations Concerning Students’ Development**

- We observed that students were interested and engaged with determining the proper location for a garden. They were able to brainstorm and research the requirements for a garden, and investigate the barriers to different areas on our playground to the garden’s development. The students interviewed adults that they felt had knowledge that they required in order to make an informed decision. They worked independently and collaboratively in deciding on potential locations, then formulated criteria which allowed them to come to a decision on where to place the vegetable garden.

## 6.4 Questions that Arose During the Project

- Communication
  - How can we ensure everyone knows what is going on with our project?
  - What is the best way to share what's going on with the community (including students, staff, parents, and surrounding community members)
- Sustainability
  - How can we maintain interest over the winter months?
  - What is the best way to document the project's progress for us and others?
  - How can we make this project sustainable?
- Participation
  - How can we get more people involved?
  - How can we help staff see that it isn't "just one more thing" they would need to include in their schedules?
- Composting
  - We did not experience any success with our composting attempts within the classroom. However, two of the Middle Years classrooms are investigating how we can now do this as a school-wide community, and we are in the process of sharing our experiences with the teachers and classrooms involved as context for the development of a different approach.

## 6.5 Where to Go from Here

- Plant vegetation into both gardens and engage children by using the gardens as educational tools (June 2010)
- Maintain gardens with support of the community (letter to be distributed to all families June 2010)
- Re-visit Discovery Centre (2010/2011 school year)
- Visit Stony Mountain School (2010/2011 school year)
- Build an outdoor adventure area for our students to become more actively engaged with the outdoors (2010/2011 school year)

## **7 Project 6:**

### ***Evaluating Cultural Proficiency Model: Impact on Teaching in Manitoba***

*Project Leaders:*

Gail Fishman (Principal, Stevenson-Britannia Adult Learning Centre, Winnipeg)  
Sandra Krahn (University of Manitoba)  
Tina Brown (Adult Education Centre)

*Section Author:*

Gail Fishman

#### **7.1 The Purpose of the Project**

The goal of this study is to examine the impacts of introducing the Cultural Proficiency Model to Manitoba UNESCO schools. The project will introduce members of the UNESCO network to Cultural Proficiency through filling in a Human Needs Assessment Survey and a Workshop on Cultural Proficiency. Through this study we hope to develop strategies to continue promoting and teaching the cultural proficiency model to teachers in Manitoba. We believe that this model provides tools for educators to carry out the objectives of UNESCO and education for sustainable development (EDS). The objectives of the survey and the workshop include to:

- develop awareness of how we work with others and how we respond to those different from us;
- introduce the concept of Cultural Proficiency to assist schools in responding in healthy ways to diversity;
- reflect on individual behaviours and organizational practices;
- guide participants in the use of tools for effectively describing, responding to and planning for issues that emerge in diverse environments;
- discuss policies and practices at the organizational level and the values and behaviours of leaders that enable effective cross-cultural interactions among students, teachers, administrators and the community; and
- develop the growth of educational leaders and policymakers to advance systemically sustainable changes

#### **7.2 Implementation of the Project**

*May 2009*

- Human Assessment Survey with members of the UNESCO network at the last meeting of the 2008-2009 school year.

*Sept 2009*

- As several new schools were added to the network we provided people the opportunity to do the Human Assessment Survey online.

*Oct. 2009*

- Deliver workshop on Cultural Proficiency to all Manitoba UNESCO schools and collected evaluation sheet from those present.

*Jan. 2010*

- We interviewed two teachers and two principals about the impact of the workshop and survey.

### **7.3 Observations Concerning Teacher Professional Development**

The first tool that was introduced to teachers and administrators in this project was the Human Relations Needs Assessment Instrument (HRNA). The Human Relations Needs Assessment Instrument was used to survey the respondents' opinions about cultural relations in their school on two separate occasions.

The completion of the pre-intervention Human Relations Needs Assessment Instrument in June 2009 assisted teacher and administrative participants as well as the workshop organizers to:

- collect information to guide planning
- contrast the opinions among groups
- become familiar with the subject matter
- clarify personal knowledge of the subject matter
- reflect on the areas under consideration
- deliberate about the areas under consideration
- clarify personal values related to the areas under consideration

The HRNA-1 reflected:

- Participants acknowledge an acceptance of diversity in the class/school
- Participants acknowledge a need to improve their cultural knowledge
- Participants acknowledge a need to improve their ability to manage difference
- Participants acknowledge their need to adapt to diversity
- Participants acknowledge their need to institutionalize cultural knowledge

The HRNA-2 survey available on line reflected in September

- The school should develop policies and practices that promote an inclusive, relational organization and culture
- The school should provide classes on different cultures for all students and staff
- The school should teach how to acknowledge differences based on ethnicity, gender and differences based on physical abilities to students and staff

Teacher professional development on Cultural Proficiency provided an opportunity for participants to:

- gain tools for assessing one's behavior and values on diversity
- gain tools for analyzing classroom and school policies and practices
- explore a model of standards for addressing change and reforms related to diversity
- learn personal strategies for coping with resistance to change that arises from issues related to diversity

The workshop establishes that Cultural Proficiency is an approach to diversity that starts with the educational leader's personal work. These leaders are guided to revisit their personal values and beliefs in a group setting and clarify what has informed their decision-making. This process can be very powerful and cathartic for both the individuals and the group. Additionally, the group has an opportunity to function as a Professional Learning Committee where relationships with people who have multiple perspectives are fostered and old assumptions can be surfaced in an attempt to move our thinking forward.

An equity and inclusive education strategy moves beyond tolerance to acceptance and respect. Students and staff who feel welcomed and accepted at school are more likely to succeed. Students and staff achievement will continue to improve as the barriers to inclusion are identified and removed.

- An equitable inclusive education system is fundamental to delivering a high quality of education
- Manitoba's diversity can be an asset to developing a cohesive society.
- We must ensure that all of Manitoba students are engaged, included and respected
- Schools support multiculturalism, human rights and diversity.
- Incidents of discrimination such as homophobia, cyber bullying and hate crimes require our attention. All school staff and students should enjoy the right to be free of harassment and violence.
- Introduction of curricular materials that supports diversity and inclusion

An equity and inclusive education strategy:

- Meets individual needs
- Is a foundation for excellence
- Identifies and eliminates barriers
- Promotes belonging
- Established a positive learning environment

Cultural Proficiency principals and elements are embedded in the workshop materials which challenge participants personally to understand, identify and eliminate biases and barrier that prevent learners from becoming fully functioning citizens of the 21<sup>st</sup> century. As workshop participants make progress related to diversity so also is progress made for student outcomes and organizational practices.

Cultural Proficiency provides a sustainable model for school improvement. Teachers and administrators can collaborate to develop C.P. skills and abilities, using a Professional Learning

Community Model, introduce changes to personal practice and work collaboratively to influence school policy and practice.

1. Some educators were initially apprehensive about sharing personal information. But everyone agreed it is good to look in the mirror once in a while.
2. Some educators were disturbed about some of the discussions
3. Some educators found the content amazing and powerful & thought provoking
4. Some educators found the info life-changing
5. Some educators found the workshop positive, and hopeful
6. One teacher found that the activities in the workshop empowered them to take a leadership role in his school as he lead the activities with his staff
7. Eye opener
8. The experience of the C.P Workshop resulted in personal growth for the educators, improved outcomes for the learners and the organization. Cultural proficiency becomes sustainable once it is embraced by teachers, students and the educational system. The policies and practices as well as the nature of the interactions are embedded in the school action plan and the change is institutionalized.

#### **7.4 Questions that Arose During the Project**

Many people that attended the workshop wished that the event could have been longer, more time would have given them a better grasp on the subject. When inviting to do the workshop at school professional development days, some schools were interested but many had their PD days already scheduled for the year.

#### **7.5 Where to Go from Here**

1. Offer C.P workshops to Manitoba educators and students in teacher training programs and school trustees
2. Recommend that a group take the C.P. workshop together and bring it back to their school
3. Review language usage and style of interaction in the class/school
4. Do CP activities in the classroom, staff meeting, dept meetings etc.
5. Know who is in your classroom/school
6. Perform a cultural audit of your organization
7. Develop a class/school plan to implement change based on the audit

## 8 Project 7:

### *Integration of Cultural Diversity within the Classroom Program*

*Project Leader and Section Author:*

Ira Udow (Principal, Brock Corydon School, Winnipeg School Division)

*Project Participants:*

Administrators:

Abed Mousa (Principal, Al Hijra Islamic School, Winnipeg)

Bill Yaworsky (Principal, St Emile School, Catholic Schools Commission, Winnipeg)

Rob Riel (Principal, Niji Mahkwa School, Winnipeg School Division)

Ted Stoesz (John Pritchard School, River East Transcona School Division)

Grade 5 Classroom Teachers:

Sabiha Durrani (Al Hijra Islamic School, Winnipeg)

Donna Burdy (St Emile School, Catholic Schools Commission, Winnipeg)

Paula Macpherson (Brock Corydon School, Winnipeg School Division)

Stacie Edgar (Brock Corydon School, Winnipeg School Division)

Deb Descoteau (John Pritchard School, River East Transcona School Division)

Karl Courchene (Niji Mahkwa School, Winnipeg School Division)

Grade 6 Classroom Teachers

Paula Dorsey (St Emile School, Catholic Schools Commission, Winnipeg)

Lisa Fostey (Al Hijra Islamic School, Winnipeg)

Tammy Klisko (John Pritchard School, River East Transcona School Division)

Karl Courchene (Niji Mahkwa School, Winnipeg School Division)

Leah Braemer (Brock Corydon School, Winnipeg School Division)

Others:

Brian Rochat (Regional Coordinator for the Canadian Centre for Diversity)

Cathy Holmes, UNESCO Lead Teacher (St Emile School; Catholic Schools Commission, Winnipeg)

Lori Hart (Language Teacher, Niji Mahkwa School, Winnipeg School Division)

### **8.1 The Purpose of the Project**

As members of the Manitoba UNESCO Associated School Network, Al Hijra Islamic School, St Emile Christian School, John Pritchard Public School and Brock Corydon Dual Track English and Hebrew Bilingual School have developed a partnership in learning that extends across our school boundaries and into the broader Winnipeg and global community. By providing opportunities for Grades 5 and 6 students from each of the schools to engage in a variety of activities together, we hope to help students to build knowledge of and respect for each other's cultures which make up the cultural mosaic of Canada.

The 4 schools have succeeded in developing a sustainable cultural diversity initiative in which the grade 5 and 6 students from each school participate in yearly activities. In addition, Niji Mahkwa Aboriginal School has joined this initiative to thus enabling all the students to explore the Aboriginal culture as well.

The purpose of this project was to take this initiative a step further, i.e. for the grade 5 and 6 teachers to enhance the events by integrating the theme of cultural diversity within their teaching practice. The Grade 5 and 6 teachers and administrators from each school wanted to come together as a professional learning community to engage in a shared action research project to answer the question, “How can they best integrate the theme of cultural diversity within their own teaching practice?” Specifically we were had the following questions:

- How do teachers/administrators conceptualize Cultural diversity?
- What are the teachers’/administrators’ understanding of Cultural Diversity?
- What are the teachers’ / administrators’ attitudes and competencies required for the implementation of this theme?
- Why did they volunteer to participate?
- Why do they feel this is important?
- What challenges do they foresee in integrating this theme in their practice?
- Are there resources and/or teaching strategies required?
- What kind of support is required from the administration?

It was our hope that this grant would help support the teachers with funds to release them from class to engage in professional dialogue exploring this topic in depth with each other. The goal of this on-going professional development opportunity would be to sustain the pedagogical and structural changes that will occur through this teacher education process.

## 8.2 Implementation of the Project

The following process was followed::

- October-November - Grade 5 and 6 teachers from each school met on their own in their respective schools. At that time, each school team discussed the action research topic as it pertains to its own classrooms and their respective schools. They were asked to reflect on what is driving them to explore this topic. Where is their commitment to this initiative coming from? What more can they be doing in their own classrooms?
- November 13 - Grade 5 and 6 teachers then met at Brock Corydon School to discuss this topic and share their thoughts and reflections related to how each teacher and each school will develop ways to sustain their efforts of integrating the theme of cultural diversity within their classroom program and school culture. (This session was audio-taped by members of the University research team.)
- January-March - Grade 5 and 6 teachers met again in their respective schools for a follow-up discussion.
- December 2 - Administrators from the five schools also met to discuss how they can best support the teachers’ efforts and how they can best help to integrate the

cultural diversity theme within their respective school cultures. This session was audio-taped by members of the University research team

- December 3 - Grade 6 students from each of the schools participated in an all day field trip to three houses of worship – a Synagogue, Church and Islamic Temple. In each of these locations, the students listened to the clergy give an explanation of their respective religions
- June 10 - Grade 5 students from each of the schools including Niji Mahkwa school participated in an all day cultural diversity workshop under the direction of Brian Rochat, Regional Coordinator for the Canadian Centre for Diversity
- The Grade 5 and 6 teachers will meet again in September 2010 to discuss their plans for integrating cultural diversity in their own classrooms and to determine how to include the Aboriginal cultural component in the December field trip.
- Remaining funds were used to purchase the same books related to the topic of cultural diversity for each school. This will form an avenue for further discussion amongst the teachers.

### **8.3 Observations**

#### **8.3.1 Observations Concerning Sustainable Living**

- This project enabled many of us to extend our practical understanding of ESD and the potential connections between the 4 strands. For example, teachers at our site were able to utilize art as a means of understanding and supporting cultural sustainability.
- Teachers and administrators began to realize that their school and classroom programs need to focus not only on socio –cultural sustainability/diversity but also on the larger ESD components.
- Teachers need to revisit ideas or develop initiatives on ESD

#### **8.3.2 Observations Concerning Teacher Professional Development**

- Sustainability has not been a topic for PD
- Teachers need support and guidance on how to incorporate the topic in their classrooms
- On a positive note, PD was enhanced by the networking opportunities teachers had within this project. Ideas, challenges, resources and connections were established and exchanged.
- This gave teachers and administrators the opportunity to begin thinking about the topic in relation to their own beliefs and their current teaching practice.

### 8.3.3 Observations Concerning Students' Development

- Over time, students have become more informed and understanding of other cultures and religions.
- Students will benefit from projects that are long term regarding impressions made and perceived ideas challenged.

## 8.4 Questions that Arose During the Project

- There is no specific curriculum on integrating cultural diversity.
- How do you evaluate something like “attitude”?
- It is important to have an administrator who supports the teachers' efforts.
- Recognize that there is a balance – when you add something, you take something away.
- Students are not taught “sustainability” explicitly.
- Time for all the teachers to meet to discuss this topic was difficult due to competing agendas in the classrooms and in each school.

## 8.5 Where to Go from Here

- Each school needs to come together as a staff to discuss sustainability and to develop more initiatives to incorporate into classrooms and school wide
- Send teachers to PD opportunities on Sustainability
- Increase/sustain the informal networking that occurred in the fall. This was valuable.
- Plan small steps to take over time
- Need to look into other 3 areas besides socio-cultural and how to integrate them
- Resources – search for people, books, materials, etc.

## 8.6 Other Comments

Some of the teachers' reflections on why they think this is important?

- Canada is a patchwork quilt or mosaic of cultures.
- We are proud that Canada is a multicultural nation.
- This is who we are and we believe in the importance of keeping the dream of freedom alive.
- We are responsible for teaching acceptance and respecting individual identity.
- It is the formative development of our students.

- Being in a bilingual program, we have even more of a responsibility to create opportunities for our students to experience other students from other cultures. If we want our students to be proud of their heritage, we also want them to want others to be proud of their. We want to build respect between communities.
- We also see Canada as an example to nations of the world. We are a mix of minorities that were or still are fighting each other. (in places out of Canada). Yet we make an effort to learn about each other, hoping that learning will lead to understanding and eventually to the allusive word called *peace*.

Winnipeg and Manitoba have been known since the very beginning for being a diverse, rich community of cultures living together. An example of a successful annual event that happens in our city is Folklorama. People who attend end up seeing similarities and differences of the different cultures and the result is people respecting each other and themselves at the same time. It is acceptable to be different and come from different countries and areas of the world.

Our own biases come into play as a result of our own lived experiences. To be able to teach in such a way that respects others, we need to examine ourselves first and be aware of our biases. It is not necessarily wrong that we feel that way, but being aware will help us to examine why we feel that way. Things that we disagree with or issues that we have problems with need to be flushed out.

Cultural Diversity is not a theme or unit of study. It is imbedded in our teaching every day. We need to be aware of what is going on in the world, current events, so that we can be prepared for students' questions. We need to be prepared to do a lot of research, to be aware, and to take advantage of learning opportunities as they present themselves—whether it's a play, like Binti's Journey or Hannah's Suitcase, or a special event eg. the Doctors Without Borders mock refugee camp.

More and more literature is now available that supports cultural diversity. Images in books and novels are more diverse than in the past. Filling our classroom libraries with these kinds of texts sends a powerful yet subtle message to our students and provides a springboard for discussions, questions etc....

Even in the simplest activities, culture diversity is there. For example, a lesson on pomegranates around Rosh Hashanah, the seeds of this particular fruit are a symbol to deeds that a Jewish person is supposed to perform during a year. It turned into lessons on what are good deeds. Are they universal or just cultural? Are they equal in value?

Integrating the Arts (visual art, music, dance, etc.) is a safe way to start conversations about cultural differences. We feel that children intrinsically identify and respond through and to The Arts.

Building community within the classroom improves acceptance of differences.

Understanding and valuing the importance of cultural diversity makes us the people, the educators that we are.

#### *One Administrator's reflection*

ESD needs to be embedded within the whole curriculum. The values, diversity, knowledge, languages and world views associated with culture, influence the way ESD issues are dealt with in specific contexts. Culture is not just a collection of particular manifestations as song, dress, dance but it is a way of being, relating, behaving believing and acting which people live out their lives; it is a constant process of change and exchange with other cultures. The concept

of Sustainable development continues to evolve, encompassing key areas such as society, environment, and economy with culture as a dimension. ESD is a tool for addressing questions on environment protection, climate change , human rights, health care and responsible sustainable consumption as these interact with the sustainable development initiatives.

# PART IV

## RECOMMENDATIONS

### 1 Introduction to Part IV

In this section we provide a number of recommendations that arose from what is presented in this Report in Parts II (Baseline Study) and III (the seven individual research projects).<sup>34</sup> The recommendations are intended to move education for sustainability further ahead in the school system of Manitoba in particular and, by extrapolation, other Canadian provinces. For each recommendation we provide a rationale that draws on the research findings of the Baseline Study and the seven individual research projects.

The set of recommendations is divided according to whom they are addressed<sup>35</sup>:

- Section IV-2:* Recommendations to the Government (Manitoba Education)
- Section IV-3:* Recommendations to School Divisions
- Section IV-4:* Recommendations to School-Based Educators
- Section IV-5:* Recommendations to faculties of education

The recommendations for action proposed in this Part IV are made under the assumption that those groups the recommendations are address to *have the intention of fostering education for sustainability within their respective domain* (government, school divisions, schools, or faculties of education). If a reader does not share this intention, the rationales to the recommendations, and thus the recommendations themselves, will not be convincing.

We recognize that deriving recommendations from what is presented in Parts II and III is an interpretive act and, thus, is subject to our own biases and pre-conceived notions about what is needed in education for sustainability, what the data we collected mean, and what action they suggest. Nevertheless, we hope that the rationale provided for each recommendation in which we make explicit references to relevant sections in this Report will convince some readers of the value of the respective recommendation.

In some cases a recommendation addressed to one group, for instance the government, might be also appropriate (sometimes in modified form) for another group. In such cases, the same recommendation (or a modified version thereof) would be listed in different sections addressed to different audiences.

In this section we use the term “education for sustainability” rather than the more commonly used term “education for sustainable development (ESD)”. In section II-1 (Introduction to Part II) we provide a rationale for this choice.

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<sup>34</sup> All recommendations are the sole responsibility of the Co-Principal Investigators of this Research Project.

<sup>35</sup> “Section IV-2” refers to section 2 in part IV; correspondingly, “section III-2.3.1” would refer to section 2.3.1 in Part III.



## 2 Recommendations to the Government (Manitoba Education)

### 2.1 Recommendations Concerning Education for Sustainability

#### **Recommendation 2.1:** *The Concept of Education for Sustainability*

We recommend that . . .  
. . . **Manitoba Education** conceptualizes “education for sustainability” as the central educational concern for schooling in Manitoba through which all other educational issues are understood.

#### *Rationale:*

- (1) The multi-strand notion of sustainability to which Manitoba Education has subscribed is grounded in a holistic, systems-theoretical view of the world (see sections, II-3.1, II-3.2, and II-4.5.1). Such a worldview, in turn, requires seeing any issue of human living in the light of this multi-strand notion of sustainability. Educators who share this view will, thus, need to view all issues of human living, to which all educational issues belong, in this integrated way, too.

#### **Recommendation 2.2:** *Promoting Education for Sustainability (1)*

We recommend that . . .  
. . . **Manitoba Education**

- (a) emphasizes more prominently its multi-strand notion of education for sustainability to counter the impression that the notion is mainly concerned with the natural environment.
- (b) reconceptualizes the “concern for the natural environment” as “responsibility for future generations”.
- (c) incorporates Aboriginal perspectives on living sustainably explicitly into its multi-strand notion of education for sustainability to (i) draw on a traditional perspective on sustainable living that is still relevant today and (ii) link the areas of Aboriginal education and education for sustainability.
- (d) considers utilizing the concept and vision of a UNESCO school in promoting education for sustainability.
- (e) promotes the idea that all aspects of sustainability, not just the environmental aspect, require personal and systemic change and supports this idea through its involvement with professional learning opportunities.
- (f) expands resource materials it provides for educators to include the socio-economic aspect of sustainability.

#### *Rationale:*

- (1) A common vocabulary and understanding of concepts are necessary for all stakeholders to be able to communicate and understand the goals and visions of education for sustainability in Manitoba. Many of the interviewees in the Baseline Study mention their concern for a lack

of focus on and understanding of education for sustainability across the province and in their own division; they see this lack of focus and understanding as hindering change toward implementing education for sustainability programs and curricula (sections II-5.2.2, II-5.2.5). Interviewees suggest that systems thinking and thinking in terms of sustainability need to become part of the culture of school divisions, schools, and classrooms (section II-5.2.5).

- (2) Responses by interviewees of the Baseline Study document the widespread notion that “Education for Sustainable Development (ESD)” is (primarily) concerned with the natural environment; issues like poverty, integration, and human development have (generally) not be seen as linked to education for sustainability (section II-5.2.5).

The scan of professional learning opportunities for education for sustainability within Manitoba reported on in section II-5.3 suggests as well that the primary focus of those opportunities is on issues around the natural environment.

- (3) Based on the arguments put forth in section II-3.1.1 the conceptualization of the “concern for the natural environment” is more accurately conceptualized as “concern for future generations” because the sustainability problem is a human problem more so than an environmental problem. A shift to the latter might also be more promising in terms of being of greater concern to Manitobans in general because the future for the children, grandchildren, etc. of Manitobans is put into focus.
- (4) The interviews of the Baseline Study with Manitoba educators suggest a lack of consideration of Aboriginal perspectives on living sustainably in their conceptualizing of education for sustainability (see section II-5.2.5). Thus, the school system in Manitoba generally misses out on drawing on a long tradition of education for sustainability right here in what is now Manitoba (see section II-3.3) and on incorporating an Aboriginal perspective into school education in Manitoba.
- (5) The recommendation to utilize the concept and vision of a UNESCO school in promoting education for sustainability does not suggest promoting the idea of making all schools in Manitoba UNESCO schools. Rather, the recommendation suggests that in promoting the multi-strand notion of sustainability (section II-3.1), the *concept and vision* of a UNESCO school might support promoting this notion because the concept of a UNESCO school integrates the different aspects of the concept of sustainability, including the socio-cultural aspect of sustainability. This could help balance the mostly environmental focus of many current sustainability programs in school divisions across the province and promote that all aspect of sustainability are given consideration in schools.

All interviewed educators of the Baseline Study from Manitoba UNESCO schools outlined a strong socio-cultural and socio-economic focus in their programs (section II-5.2.4). This focus is integrated into the overall four themes linked to being a UNESCO school. On the other hand, in many of the non-UNESCO schools, a socio-cultural and socio-economic focus was not integration into a larger view of sustainability (section II-5.2.5). Many of the socio-cultural programs in those schools were implemented in clubs outside of classrooms, and they were not seen as part of the curriculum per se or as part of a schools concern for sustainability.

- (6) A scan of resource materials and professional learning opportunities focused on sustainable living in Manitoba (see section II-5.1) suggests that the resource materials and professional learning opportunities linked to the environmental strand of sustainability consider the need for personal and systemic change, while those linked to the other strands, like the socio-economic and the health and wellbeing strand emphasize stronger the use of “strategies”, like strategies of working with particular groups, for example, incorporating Aboriginal

- perspectives into the curriculum (see section II-5.3.2). The scholarship on teacher change (see section II-4.1) and whole system change (see section II-4.3) suggests very strongly the need for personal and systemic change for try change to occur and to be sustainable.
- (7) The scan suggests as well a relative lack of particularly library material on matters relating to the socio-economic aspect of sustainability (see section II-5.3.2).

**Recommendation 2.3: *Promoting Education for Sustainability (2)***

We recommend that . . .

. . . **Manitoba Education**

- (a) links closely with other Departments to promote systems thinking at the governmental level to foster sustainable thinking and practices within governmental Departments and within the population and particularly the business communities of Manitoba.
- (b) makes systems-thinking a central aspect of the SEdA-like sessions recommended in Recommendation 2.7.
- (c) revisits the educational funding of school education under the notion of equitability (rather than equity).

*Rationale:*

- (1) Systems thinking is a central part of living sustainably, requiring a systems approach when moving toward a sustainable society (see section II-3.2). Such a systems approach requires that all domains of societal living (reflected in the departmental structure of a provincial government) are working toward a sustainable society.
- (2) The research literature on whole-system change in education suggests that all levels of government need to be actively supporting the system change (see section II-4.3).
- (3) Interviews of the Baseline Study suggest a lack of a systems perspective among all interviewees (see particularly section II-5.2.5).
- (4) Current governmental and school-divisional funding formulas were questioned by interviewees in the Baseline Study. One interviewee pointed to unequal access to professional development opportunities (see section II-5.3.1), and two other interviewees pointed to funding formulas based on equality despite unequal needs in schools, for instance in schools within an inner-city context (see section II-5.2.5).

**Recommendation 2.4: *Provincial Leadership Group***

We recommend that . . .

. . . **Manitoba Education** facilitates the formation of a provincial “guiding coalition for education for sustainability” of committed members of the highest level of government, teacher associations (MTS), superintendents (MASS), school boards (MSBA), and faculties of education that guides the whole-system change at the provincial level.

*Rationale:*

- (1) Literature on educational change (section II-4.3.1) suggests that substantial and sustained educational reform requires “a guiding coalition at the top”, the members of which
  - see the school educational reform toward education for sustainable development as an *enduring priority*
  - keep up the pressure for change at all times and are alert to deflecting distracters (like having too many ambitious reform goals)
  - are willing to invest new money into a positive momentum
  - use “intelligent accountability” toward the central reform objectives. (For the notion of “intelligent accountability” see section II-4.3.1.)
- (2) The interviews in the Baseline Study suggest that there is already a strong coalition of and collaboration between different educational groups in Manitoba, including Manitoba Education (see section II-5.2.2). The formation of a provincial “guiding coalition” can and should build on these already existing links.

**Recommendation 2.5:** *A Small Number of Focused and Ambitious Goals*

We recommend that . . .

. . . **Manitoba Education** refocuses its educational projects to a few, but ambitious long-term goals for implementing education for sustainability in Manitoba and that all other educational projects are integrated under these few goals.

*Rationale:*

- (1) Literature on educational change (section II-4.3.1) suggests that a small number of ambitious goals is crucial for successful whole-system educational change. Too many disconnected, fragmented and episodic projects undermine the chances of achieving the ambitious, long-term goals.
- (2) A number of interviewed divisional administrators in the Baseline Study suggested that Manitoba Education approaches educational change with too many disconnected, fragmented and episodic projects (see sections II-5.2.5).
- (3) Sustainability and human well-being provide *the* central concern for human living (see section II-3.1, thus, education for sustainability needs to be the overarching educational focus under which all other educational foci can and should be subsumed.

**Recommendation 2.6:** *Capacity Building for Educational Whole-System Change*

We recommend that . . .

. . . **Manitoba Education** supports capacity building for educational whole-system change toward education for sustainability at the school divisional level through

- the provision of resources to school divisions for whole-system educational change toward education for sustainability, and
- the provision of resources for focused research on such capacity building and whole-system educational change for sustainability in school divisions for the purpose of guiding future directions in capacity support.

*Rationale:*

- (1) Literature on educational whole-system change (section II-4.3.1) suggests that substantial and sustained educational reform
  - requires reculturation more than restructuring, including the alteration of beliefs in educators, both of which require a whole-system approach to change;
  - is hindered by teachers and administrators being caught up in day-to-day pressures of school life.

*Additional* resource support is needed for whole-system changes (see our recommendations to school divisions and school boards), including a school division's ability to relieve teachers from the day-to-day pressures of teaching.
- (2) Literature on educational whole-system change (section II-4.3.1) suggests that the collection and use of data to monitor reform process is a crucial component of successful whole-system educational change.
- (3) The interviews in the Baseline Study suggest that there has been only limited whole-system change toward education for sustainability in Manitoba school divisions (see sections II-5.2.2 and II-5.2.5).

**Recommendation 2.7:** *Facilitation of a Shift in School Divisions*

We recommend that . . .

. . . **Manitoba Education** continues to offer SEdA-like sessions to initiate and support school divisions to move toward education for sustainability. These sessions should be accompanied by on-going, data-supported follow-up sessions.

*Rationale:*

- (1) These sessions facilitate the *reculturation* at the leadership level in school divisions that literature on whole-system change says is needed for substantial and sustained educational change (section II-4.3.1).
- (2) The interview data of the Baseline Study suggest strongly a positive impact of the SEdA sessions on a school division's approach to education for sustainability:
  - (a) Many of the interviewees who attended a SEdA session stressed the importance and the value of those sessions as a starting point for the respective division's move toward education for sustainability and the importance and value of the follow-up meetings as helpful incentives to maintain the momentum for change.
  - (b) The interviews in the Baseline Study suggest that divisional administrators who attended the SEdA sessions were further ahead in terms of their awareness and understanding of education for sustainability compared to those who did not attend the SEdA sessions (see sections II-5.2.2 and II-5.2.4).
- (3) Literature on educational whole-system change (section II-4.3.1) suggests also that the collection and use of data to monitor reform process is a crucial component of successful whole-system educational change.

**Recommendation 2.8: Integrated and Interconnected Curricula**

We recommend that . . .

. . . **Manitoba Education**

- (a) develops future curricula using an integrated or interdisciplinary curriculum model combined with an inquiry stance in all grades. Rather than organizing curriculum and learning outcomes in isolated subjects the curriculum should be organized around big and essential questions. The curriculum objectives should be focused on deep and enduring understanding of those bigger and essential issues and their interconnectedness. The notion of ecological literacy (see section II-3.4.2) should play a central role in the integrated and interdisciplinary curriculum.
- (b) develops future curricula using integrated learning outcomes that focus on the development of *systems thinking* from different disciplinary perspectives.
- (c) facilitates and supports the development of teaching materials that connect with the emerging Internet resources and information around current issues.
- (d) employs or provides resources for school-division-based curriculum consultants who can support teachers in developing their pedagogy of inquiry and who are up-to-date with how to access the information needed by teachers and students to progress in their inquiry or research into the big and essential questions and urgent and unfolding current events.

*Rationale:*

- (1) The multi-strand notion of sustainability to which Manitoba Education has subscribed is grounded in a holistic, systems-theoretical view of the world (see sections, II-3.1, II-3.2, and II-4.5.1). In order to help students see the world holistically and as a system with a complex and interlinked structure, curricular learning outcomes need to be about developing a deep and enduring understanding of this complexity and interconnectedness. The notion of ecological literacy (see section II-3.4.2) has emerged as a way of capturing the attitudes, competencies and skills linked to this kind of understanding. Furthermore, the structure through which students develop this understanding (subject disciplines) need to reflect the holistic and interconnected nature of the curricular learning outcomes.
- (2) A number of schools and school divisions have started approaching the implementation of the mandated curriculum in the recommended way (as much as the mandate allows for that) through various initiatives. However, many of these initiatives move outside the classroom teaching and curriculum into clubs that only involve a small number of students (see sections II-5.2.3 and II-5.2.5). These kinds of initiatives need to also move into the course teaching and the whole-school context, and that is best supported through a re-structuring and re-focusing of the provincially mandated curriculum.
- (3) As outlined in sections II-4.4 and II-4.5, the study of topics around education for sustainability within the regular course of teaching can provide the foundations for all learning in the classroom and provide the substance for the development of all the literacies (reading, writing, numeracy, media, technology, artistic, etc) that are the general goal of education in Manitoba. As students inquire and investigate these sustainability topics, they develop the knowledge, skills, and attitudes outlined in the curriculum.
- (4) In section II-4.5 the argument is presented that the study of topics around education for sustainability within the regular course of teaching can contribute to student engagement. Some interviewees in the Baseline Study suggest that their students' engagement increased

- with their involvement in projects around sustainability issues (see sections II-5.2.3 and II-5.2.4).
- (5) A number of interviewees in the Baseline Study suggested the need for more open-ended topics that should be studied through an interdisciplinary and inquiry-based approach (see sections II-5.2.3 and II-5.2.5).
  - (6) Systems thinking has been recognized as one of the most important competencies for citizens for living sustainably (see section II-2.3). Holistic education focuses on the development of systems thinking (see section II-4.4.1).
  - (7) A number of interviewees in the Baseline Study emphasized the need for curriculum consultants that can support education for sustainability, which, based on the ideas presented in section II-4.5, includes inquiry-based teaching (see sections II-5.3.2, II-5.3.3, and II-5.3.4)

**Recommendation 2.9:** *Supporting Technology for Education for Sustainability*

We recommend that . . .

. . . **Manitoba Education** provides sufficient resources to school divisions so that all students have consistent and ongoing *access* to the Internet.

*Rationale:*

- (1) The central point of this recommendation is “access” to the internet, which does not require that one computer for every student. The latter situation might be unsustainable in terms of resource consumption.

Developing a deep and enduring understanding of essential issues and their interconnectedness (see Recommendation 2.8) requires access to a range of resources on a range of issues; the Internet provides the best way to access those resources. Furthermore, an aspect of effective inquiry and interdisciplinary curriculum and learning (see Recommendation 2.8) is access to up-to-date information and data. Characteristic for schools that engage student in sustainability projects was that all students had ongoing access to the Internet (section II-5.2.4).

The use of technology and the internet is not just a matter of using a tool, but requires the development of critical media skills for students and teachers.

- (2) In the Baseline Study, interviewees from rural school divisions emphasized the challenge to sustain rural education with declining enrolment; they suggested that the investment in high-speed internet connections can provide opportunities for student and teacher learning in rural settings, which can contribute to the alleviation of the funding challenges that rural schools face in terms of particularly transportation (see section II-5.2.5).
- (3) The experiences presented in the report of the individual research project 2 (see section III-3) illustrates the challenges of and suggests possibilities for using technology in addressing rural teachers’ learning needs.

## 2.2 Recommendations Concerning Professional Development

### **Recommendation 2.10:** *Role in and Form of Departmental Professional Development*

We recommend that . . .

. . . **Manitoba Education**

- (a) shifts all its contributions to teacher / administrator professional development toward education for sustainability through which all other educational issues are understood.
- (b) offers, facilitates, or supports teacher / administrator professional development only in accordance to the characteristics of effective professional development (section II-4.1.3).
- (c) offers or supports division-based professional development sessions that prepare teachers and administrators in the areas of the use of technology as an inquiry tool, critical media skills in order to teach and support student inquiry, using an integrated curriculum and forms of inquiry-based teaching.
- (d) collects data to monitor the impact of its professional development sessions on educational change toward education for sustainability.

*Rationale:*

- (1) Sustainability and human well-being provide *the* central concern for human living (see section II-3.1), thus, education for sustainability needs to be the overarching educational focus under which all other educational foci can and should be subsumed.
- (2) Literature on educational change (section II-4.3.1) suggests that a small number of ambitious goals is crucial for successful whole-system educational change.
- (3) The literature on professional development is quite unanimous on the central features of effective professional development (section II-4.1.3). Professional development that does not share those features is an ineffective use of resources.
- (4) The meaningful use of technology and an integrated curriculum together with inquiry-based teaching are directly linked to education for sustainability (see Recommendation 2.9).
- (5) Literature on educational whole-system change (section II-4.3.1) suggests that the collection and use of data to monitor reform process is a crucial component of successful whole-system educational change.

## 2.3 Recommendations Concerning Pre-Service Teacher Education

### **Recommendation 2.11:** *Sustaining Institutional Governance of Pre-Service Teacher Education*

We recommend that . . .

. . . **Manitoba Education**

supports and sustains the current institutional governance of pre-service teacher education in Manitoba (see section II-4.2.2), while at the same time develops and makes use of the current institutionalized links between the university, the teaching profession, and the government to co-construct approaches for a whole-system change toward education for sustainability.

*Rationale:*

- (1) The current institutional governance of pre-service teacher education in Manitoba is such that the university has in practice the strongest enacted authority over the different aspects of pre-service teacher education (see section II-4.2.2). Because the teacher certification authority lies with the provincial government and because of other legislation, the current institutional governance model of pre-service teacher education in Manitoba can be characterized as a *decentralized* model of governance, where the enacted authority lies with those who are working directly with those for whom the teacher education programs are designed rather the legislative authority. The literature on educational whole system change suggests that it is focused and committed practitioners, not programs – and in this context we want to add, not directives – that drive success in educational change (see section II-4.3.1). Rather, this scholarship suggests (see section II-4.3.1) giving preference to reculturation over restructuring, where reculturation involves intelligent accountability, which is build on *internally held* responsibility toward the overall goal of change.
- (2) The current institutional governance of pre-service teacher education in Manitoba promotes a view of the purpose of pre-service teacher education (see section II-4.3.1) that we consider more appropriate for developing a responsive and responsible teaching profession.
- (3) This recommendation implies that Manitoba Education does not mandate particular program features in pre-service teacher education programs, like particular courses, to achieve programmatic changes toward education for sustainability, but rather contributes to the co-construction of programmatic changes through the currently existing and potentially to be developed links between the three jurisdictions (university, teaching profession, government) in the governance of pre-service teacher education (see Recommendations 2.4 and 2.12).

**Recommendation 2.12:** *Impacting Pre-Service Teacher Education*

We recommend that . . .

. . . **Manitoba Education** influences pre-service teacher education programs toward preparation of teacher candidates for education for sustainability

- (a) by having faculties of education participate in the Provincial Leadership Group suggested in Recommendation 2.4.
- (b) by designing and mandating school curricula as suggest in Recommendation 2.8.
- (c) by providing resource support for teacher education research and teacher education practices that support the preparation of teacher candidates for education for sustainability.

*Rationale:*

- (1) Literature on educational whole-system change (section II-4.3.1) suggests that substantial and sustained educational reform requires reculturation more than restructuring, including the alteration of beliefs in educators. Involving faculties of education in the recommended Provincial Leadership Group and providing resources to teacher educators for research and implementing practices that support the preparation of teacher candidates for education for sustainability will greatly contribute to such reculturation efforts.
- (2) Interviewees from faculties of education participating in the Baseline Study suggested that it is though preparing teacher candidates for using the mandated curricula in their teaching that

teacher candidates are (partially) prepared for education for sustainability to the degree to which sustainability issues are incorporated into the current curriculum (see section II-5.4.2).

## 3 Recommendations to School Divisions

### 3.1 Recommendations Concerning Education for Sustainability

#### **Recommendation 3.1:** *Promoting Education for Sustainability*

We recommend that . . .

. . . **school divisions**

- (a) conceptualize “education for sustainability” as the central educational concern for schooling in the division through which all other educational issues are understood; for that purpose, school divisions should adopt and implement the commonly wider notion of education for sustainability promoted by Manitoba Education and UNESCO, which is based on the multi-strand concept of sustainability outlined in section II-3.1.
- (b) reconceptualize the “concern for the natural environment” as “responsibility for future generations”.
- (c) conceptualize health and well-being of educators as an important aspect of the divisions’ approach to education for sustainability.
- (d) incorporate Aboriginal perspectives on living sustainably explicitly into their notion of education for sustainability to (i) draw on a traditional perspective on sustainable living that is still relevant today and (ii) utilize this perspective to integrate Aboriginal perspectives into school education in Manitoba.
- (e) promote and programmatically support the idea that all aspects of sustainability require personal and systemic change.
- (f) expand resource materials provide for educators to include the socio-economic aspect of sustainability much stronger than is currently the case.
- (g) consider utilizing the concept and vision of a UNESCO school in implementing education for sustainability in the school division.

#### *Rationale:*

- (1) The multi-strand notion of sustainability to which Manitoba Education has subscribed is grounded in a holistic, systems-theoretical view of the world (see sections, II-3.1, II-3.2, and II-4.5.1). Such a worldview, in turn, requires seeing any issue of human living in the light of this multi-strand notion of sustainability. Educators who share this view will, thus, need to view all issues of human living, to which all educational issues belong, in this integrated way, too.
- (2) A common vocabulary and understanding of concepts are necessary for all stakeholders to be able to communicate and understand the goals and visions of education for sustainability in Manitoba. Many of the interviewees in the Baseline Study mention their concern for a lack of focus on and understanding of education for sustainability across the province and in their own division (see sections II-5.2.2 and II-5.2.5). They see this lack of focus and understanding as hindering change toward implementing education for sustainability programs and curricula (see sections II-5.2.2 and II-5.2.5). Interviewees suggest that systems

thinking and thinking in terms of sustainability need to become part of the culture of school divisions, schools, and classrooms (see sections II-5.2.2 and II-5.2.5).

- (3) Responses by interviewees of the Baseline Study document the widespread notion that “Education for Sustainable Development (ESD)” is (primarily) concerned with the natural environment; issues like poverty, integration, and human development have (generally) not be seen as linked to education for sustainability (section II-5.2.5).

The scan of professional learning opportunities for education for sustainability within Manitoba reported on in section II-5.3 suggests as well that the primary focus of those opportunities is on issues around the natural environment.

- (4) Based on the arguments put forth in section II-3.1.1 the conceptualization of the “concern for the natural environment” is more accurately conceptualized as “concern for future generations” because the sustainability problem is a human problem more so than an environmental problem. A shift to the latter might also be more promising in terms of being of greater concern to Manitobans in general because the future for the children, grandchildren, etc. of Manitobans is put into focus.
- (5) A number of interviewees in the Baseline Study talked about burnout of teachers and administrators as a problem in school divisions (see section II-5.2.5); also, the representative of the Manitoba Teachers’ Society (MTS) mentioned the need for MTS to provide health and wellness workshops to its members.
- (6) The interviews of the Baseline Study with Manitoba educators suggest a lack of consideration of Aboriginal perspectives on living sustainably in their conceptualizing of education for sustainability (see section II-5.2.5). Thus, the school system in Manitoba misses generally out on drawing on a long tradition of education for sustainability right here in what is now Manitoba (see section II-3.3) and on incorporating a particular Aboriginal perspective into school education in Manitoba.
- (7) A scan of resource materials and professional learning opportunities focused on sustainable living in Manitoba suggests that as one moves from the environmental aspect of sustainability to the socio-economic, the health aspect, etc. the resource materials and professional learning opportunities made available more from emphasizing the need for personal and systemic change to emphasizing “strategies”, for instance, strategies of working with particular groups, e.g., incorporating Aboriginal perspectives into the curriculum (see section II-5.3.2). The scholarship on teacher change (see section II-4.1) and whole system change (see section II-4.3) suggest very strongly the need for personal and systemic change for try change to occur and to be sustainable.
- (8) The scan suggests as well a relative lack of particularly library material on matters relating to the socio-economic aspect of sustainability (see section II-5.3.2).
- (9) The recommendation to utilize the concept and vision of a UNESCO school in promoting education for sustainability does not suggest promoting the idea of making all schools in Manitoba UNESCO schools. Rather, the recommendation suggests that in promoting the multi-strand notion of sustainability (section II-3.1), the *concept and vision* of a UNESCO school might support promoting this multi-strand notion because the concept of a UNESCO school integrates the different aspects of the concept of sustainability, including the socio-cultural aspect of sustainability. This could help balance the mostly environmental focus of many current sustainability programs in school divisions across the province and promote that all aspect of sustainability are given consideration in schools.

In the Baseline Study, all interviewed educators from Manitoba UNESCO schools outlined a strong socio-cultural and socio-economic focus in their programs (see section II-

5.2.4). This focus is integrated into the overall four themes linked to being a UNESCO school. On the other hand, in many of the non-UNESCO schools, a socio-cultural and socio-economic focus was not integration into a larger view of sustainability (see section II-5.2.5). Many of the socio-cultural programs in those schools were implemented in clubs outside of classrooms, and they were not seen as part of the curriculum per se or as part of a schools concern for sustainability.

**Recommendation 3.2: *A Small Number of Focused and Ambitious Goals***

We recommend that . . .  
 . . . **school divisions** refocus their educational projects to a few, but ambitious long-term goals for implementing education for sustainability in their respective school division and that all other educational projects are integrated under these few goals.

*Rationale:*

- (1) Literature on educational change (section II-4.3.1) suggests that a small number of ambitious goals is crucial for successful whole-system educational change. Too many disconnected, fragmented and episodic projects undermine the chances of achieving the ambitious, long-term goals.
- (2) Sustainability and human well-being provide *the* central concern for human living (see section II-3.1), thus, education for sustainability needs to be the overarching educational focus under which all other educational foci can and should be subsumed.

**Recommendation 3.3: *Systems Thinking***

We recommend that . . .  
 . . . **school divisions**  
 (a) employ systems thinking in the administering of school divisional education.  
 (b) revisit funding formulas for school-based education under the notion of equitability (rather than equity).

*Rationale:*

- (1) Systems thinking is a central part of living sustainably, requiring a systems approach when moving toward a sustainable system (see section II-3.2).
- (2) Interviews of the Baseline Study suggest a lack of a systems perspective among all interviewees (see particularly section II-5.2.5).
- (3) Current governmental and school-divisional funding formulas were questioned by interviewees in the Baseline Study. One interviewee pointed to unequal access to professional development opportunities (see section II-5.3.1), and two other interviewees pointed to funding formulas based on equality despite unequal needs in schools, for instance in schools within an inner-city context (see section II-5.2.5).

**Recommendation 3.4:** *Audit on the Current State of Education of Sustainability*

We recommend that . . .

. . . **school divisions** undertake an audit based on the multi-strand concept of sustainability (as suggested in Recommendation 3.1) in order to establish the respective division's current state of implementation of education for sustainability.

*Rationale:*

- (1) Establishing the current state of education for sustainability provides the initial data needed for monitoring a whole-system change toward education for sustainability (see section II-4.3.1).
- (2) Such an audit, made public to the different stakeholders in the division, would promote the wider notion education for sustainability (see section II-3.1 and Recommendation 3.1), and allow schools and teachers to understand that the many things they already do are a central part of education for sustainability.
- (3) Only very few school divisions have included any kind of focus on education for sustainability on their divisional website or their strategic plans (see the Appendix to this Research Report). Similarly, of the interviewed school divisional administrators in the Baseline Study only a few talked about a divisional focus on education for sustainability (see sections II-5.2.3 and II-5.2.5).
- (4) A number of schools and school divisions start approaching the implementation of the mandated curriculum in the recommended way (as much as the mandate allows for that) through various initiatives. However, many of these initiatives move outside the classroom teaching and curriculum into clubs that only involve a small number of students (sections II-5.2.3 and II-5.2.5). These kinds of initiatives need to become more integral to teaching and learning in the classroom and more integrated into the whole-school context, and that is best supported through a re-structuring and re-focusing of the provincially mandated curriculum.

**3.2 Recommendations Concerning Professional Development****Recommendation 3.5:** *School-University Partnerships for Teacher Development*

We recommend that . . .

. . . **school divisions** support meaningful school-university partnerships in their schools

- to support continuous teacher professional development with focus on student learning in the area of education for sustainability, and
- to strengthen whole-system educational change for education for sustainability by integrating the pre-service preparation of teachers.

*Rationale:*

- (1) Literature on teacher education reform suggests school-university partnerships, particularly professional development schools, as the structural framework for the practice of sustained

and effective teacher learning and for the preparation for such practice (see sections II-4.3.3 and II-4.1.3).

**Recommendation 3.6:** *Integrated Curriculum Implementation and Systems Thinking*

We recommend that . . .

. . . **school divisions**

- (a) promote and facilitate through professional development an integrated and interdisciplinary implementation of subject matter curricula, as long as those are mandated (see Recommendation 2.8 to the government).
- (b) promote and facilitates through professional development the development of teacher competencies in helping their students with developing systems thinking.
- (c) employ divisional or school-based curriculum consultants who can support teachers in developing their pedagogy of inquiry and who are up-to-date with how to access the information needed by teachers and students to progress in their inquiry or research into the big and essential questions and urgent and unfolding events.
- (d) promote and facilitate professional development that is effective (see section II-4.1.3).

*Rationale:*

- (1) The multi-strand notion of sustainability to which Manitoba Education has subscribed is grounded in a holistic, systems-theoretical view of the world (see sections, II-3.1, II-3.2, and II-4.5.1). In order to help students see the world holistically and as a system with a complex and interlinked structure, curricular learning outcomes need to be about developing a deep and enduring understanding of this complexity and interconnectedness. The notion of ecological literacy (see section II-3.4.2) has emerged as a way of capturing the attitudes, competencies and skills linked to this kind of understanding. Furthermore, the structure through which students develop this understanding (subject disciplines) need to reflect the holistic and interconnected nature of the curricular learning outcomes.
- (2) A number of schools and school divisions have started approaching the implementation of the mandated curriculum in the recommended way (as much as the mandate allows for that) through various initiatives. However, many of these initiatives move outside the classroom teaching and curriculum into clubs that only involve a small number of students (see sections II-5.2.3 and II-5.2.5). These kinds of initiatives need to also move into the course teaching and the whole-school context, and that is best supported through a re-structuring and re-focusing of the provincially mandated curriculum.
- (3) The report of the individual research project 4 (see section III-5) illustrates one particular and very successful division-wide approach to an integrated curriculum implementation and the promotion of systems thinking.
- (4) As outlined in sections II-4.4 and II-4.5, the study of topics around education for sustainability within the regular course of teaching can provide the foundations for all learning in the classroom and provide the substance for the development of all the literacies (reading, writing, numeracy, media, technology, artistic, etc) that are the general goal of education in Manitoba. As students inquire and investigate these sustainability topics, they develop the knowledge, skills, and attitudes outlined in the curriculum.

- (5) In section II-4.5 the argument is presented that the study of topics around education for sustainability within the regular course of teaching can contribute to student engagement. Some interviewees in the Baseline Study suggest that their students' engagement increased with their involvement in projects around sustainability issues (see sections II-5.2.3 and II-5.2.4).
- (6) A number of interviewees in the Baseline Study suggested the need for more open-ended topics that should be studied through an interdisciplinary and inquiry-based approach (see sections II-5.2.3 and II-5.2.5).
- (7) Systems thinking has been recognized as one of the most important competencies for citizens for living sustainably (see section II-2.3). Holistic education focuses on the development of systems thinking (see section II-4.4.1).
- (8) A number of interviewees in the Baseline Study emphasized the need for curriculum consultants that can support education for sustainability, which, based on the ideas presented in section II-4.5, includes inquiry-based teaching (see sections II-5.3.2, II-5.3.3, and II-5.3.4)
- (9) The reports of the individual research projects 5 and 7 (see sections III-6 and III-8, respectively) illustrate the value of professional learning communities for teacher learning. Professional Learning Communities (PLCs) are one particular way of addressing some of the central features of effective professional development (see II-4.1.3).

## 4 Recommendations to School-Based Educators

### 4.1 Recommendations Concerning Education for Sustainability

#### **Recommendation 4.1:** *Promoting Education for Sustainability*

We recommend that . . .

. . . **school-based educators**

- (a) conceptualize “education for sustainability” as the central educational concern for the educational vision of the school through which all other educational issues are understood; for that purpose, school-based educators should adopt and implement the commonly wider notion of education for sustainability promoted by Manitoba Education and UNESCO, which is based on the multi-strand concept of sustainability outlined in section II-3.1.
- (b) reconceptualize the “concern for the natural environment” as “responsibility for future generations”.
- (c) incorporate Aboriginal perspectives on living sustainably explicitly into their notion of education for sustainability to (i) draw on a traditional perspective on sustainable living that is still relevant today and (ii) utilize this perspective to integrate Aboriginal perspectives into school education in Manitoba.
- (d) promote and programmatically support the idea that all aspects of sustainability require personal and systemic change.
- (e) consider utilizing the concept and vision of a UNESCO school in implementing education for sustainability in their school.

#### *Rationale:*

- (1) The multi-strand notion of sustainability to which Manitoba Education has subscribed is grounded in a holistic, systems-theoretical view of the world (see sections, II-3.1, II-3.2, and II-4.5.1). Such a worldview, in turn, requires seeing any issue of human living in the light of this multi-strand notion of sustainability. Educators who share this view will, thus, need to view all issues of human living, to which all educational issues belong, in this integrated way, too.
- (2) A common vocabulary and understanding of concepts are necessary for all stakeholders to be able to communicate and understand the goals and visions of education for sustainability in Manitoba. Many of the interviewees in the Baseline Study mention their concern for a lack of focus on and understanding of education for sustainability across the province and in their own division; they see this lack of focus and understanding as hindering change toward implementing education for sustainability programs and curricula (sections II-5.2.2, II-5.2.5). Interviewees suggest that systems thinking and thinking in terms of sustainability need to become part of the culture of school divisions, schools, and classrooms (section II-5.2.5).
- (3) Responses by interviewees in the Baseline Study document the widespread notion that “Education for Sustainable Development (ESD)” is (primarily) concerned with the natural environment; issues like poverty, integration, and human development have (generally) not been seen as linked to education for sustainability (section II-5.2.5).

The scan of professional learning opportunities for education for sustainability within Manitoba reported on in section II-5.3 suggests as well that the primary focus of those opportunities is on issues around the natural environment.

- (4) Based on the arguments put forth in section II-3.1.1 the conceptualization of the “concern for the natural environment” is more accurately conceptualized as “concern for future generations” because the sustainability problem is a human problem more so than an environmental problem. A shift to the latter might also be more promising in terms of being of greater concern to Manitobans in general because the future for the children, grandchildren, etc. of Manitobans is put into focus.
- (5) The interviews of the Baseline Study with Manitoba educators suggest a lack of consideration of Aboriginal perspectives on living sustainably in their conceptualizing of education for sustainability (see section II-5.2.5). Thus, the school system in Manitoba misses generally out on drawing on a long tradition of education for sustainability right here in what is now Manitoba (see section II-3.3) and on incorporating an Aboriginal perspective into the school education in Manitoba.
- (6) A scan of resource materials and professional learning opportunities focused on sustainable living in Manitoba (see section II-5.1) suggests that the resource materials and professional learning opportunities linked to the environmental strand of sustainability consider the need for personal and systemic change, while those linked to the other strands, like the socio-economic and the health and wellbeing strand emphasize stronger the use of “strategies”, like strategies of working with particular groups, for example, incorporating Aboriginal perspectives into the curriculum (see section II-5.3.2). The scholarship on teacher change (see section II-4.1) and whole system change (see section II-4.3) suggests very strongly the need for personal and systemic change for try change to occur and to be sustainable.
- (7) The recommendation to utilize the concept and vision of a UNESCO school in promoting education for sustainability does not suggest promoting the idea of making all schools in Manitoba UNESCO schools. Rather, the recommendation suggests that in promoting the multi-strand notion of sustainability (section II-3.1), the *concept and vision* of a UNESCO school might support promoting this multi-strand notion because the concept of a UNESCO school integrates the different aspects of the concept of sustainability, including the socio-cultural aspect of sustainability. This could help balance the mostly environmental focus of many current sustainability programs in school divisions across the province and promote that all aspect of sustainability are given consideration in schools.

In the Baseline Study all interviewed educators from Manitoba UNESCO schools outlined a strong socio-cultural and socio-economic focus in their programs (see section II-5.2.4). This focus is integrated into the overall four themes linked to being a UNESCO school. On the other hand, in many of the non-UNESCO schools, a socio-cultural and socio-economic focus was not integration into a larger view of sustainability (see sections II-5.2.5). Many of the socio-cultural programs in those schools were implemented in clubs outside of classrooms, and they were not seen as part of the curriculum per se or as part of a schools concern for sustainability.

**Recommendation 4.2: Pedagogy of Education for Sustainability**

We recommend that . . .

. . . **school-based educators** move toward inquiry-based teaching and learning based on an integrate and interdisciplinary curriculum by

- engaging students in cross-grade projects in order to create a school-wide community of learning and student action;
- providing students opportunities to do relevant and authentic research and present their findings to authentic audiences from the communities in and out of the school; and
- restructuring the school's organizational structure from the traditional structure of one teacher teaching one class (one subject) to a structure that facilitates the cross-grade interdisciplinary projects and opportunities for authentic research just mentioned.

*Rationale:*

- (1) The recommendations are drawn from the understanding of teaching for sustainable living (section II-4.5), which is linked to holistic education (Section 2.4) and based on the holistic nature of education for sustainability (section II-4.5.1).
- (2) Schools that have been implementing education for sustainability in an exemplary way demonstrate a number of the recommended approaches (see sections II-5.2.1, II-5.2.3, and II-5.2.4).

**4.2 Recommendations Concerning Professional Development****Recommendation 4.3: School-University Partnerships for Teacher Development**

We recommend that . . .

. . . **school-based educators** engage in meaningful school-university partnerships to support continuous teacher professional development with focus on student learning in the area of education for sustainability.

*Rationale:*

- (1) Literature on teacher education reform suggests school-university partnerships, particularly professional development schools, as the structural framework for the practice of sustained and effective teacher learning and for the preparation for such practice (see sections II-4.3.3 and II-4.1.3).

**Recommendation 4.4: Role in and Form of Professional Development**

We recommend that . . .

. . . **school-based educators**

- (a) shift all their professional development toward education for sustainability through which all other educational issues are understood.

- (b) plan and engage in professional development primarily in accordance with the characteristics of effective professional development (section II-4.1.3).
- (c) collect data to monitor the impact of the professional development sessions on educational change toward education for sustainability.

*Rationale:*

- (1) Sustainability and human well-being provide *the* central concern for human living (see section II-3.1, thus, education for sustainability needs to be the overarching educational focus under which all other educational foci can and should be subsumed.
- (2) The literature on professional development is quite unanimous on the central features of effective professional development (section II-4.1.3). Professional development that does not share those features is an ineffective use of resources.
- (3) Literature on educational whole-system change (section II-4.3.1) suggests that the collection and use of data to monitor reform process is a crucial component of successful whole-system educational change.
- (4) There is clear evidence that an understanding of central features of effective professional development is widespread across Manitoba's school divisions and educational associations (see sections II-5.3.2 and II-5.3.3). There is also some evidence that a shift toward a more effective professional development approach has already been considered in several school divisions (see section II-5.3.4) and is promoted by the Manitoba Teachers' Society (see section II-5.3.1).

## 5 Recommendations to Faculties of Education

### 5.1 Recommendations Concerning Education for Sustainability

#### **Recommendation 5.1:** *Promoting Education for Sustainability*

We recommend that . . .

. . . **faculties of education**

- (a) review their current programs for ways in which teacher candidates can be appropriately prepared for education for sustainability and make changes to their program based on such review.
- (b) promote and use a multi-strand notion of “education for sustainability” to counter the impression that the notion is mainly concerned with the natural environment.
- (c) reconceptualize the “concern for the natural environment” as “responsibility for future generations”.
- (d) incorporate Aboriginal perspectives on living sustainably explicitly into their pre-service teacher education programs to (i) draw on a traditional perspective on sustainable living that is still relevant today and (ii) utilize this perspective to help teacher candidates integrate Aboriginal perspectives into their teaching.
- (e) integrate Aboriginal and diversity issues into their teacher education programs in a way that gives consideration to teacher candidates’ prior experiences or lack of experiences with Aboriginal and diversity issues.
- (f) promote and programmatically support the idea that all aspects of sustainability require personal and systemic change.
- (g) expand resource materials they provide for educators to include the socio-economic aspect of sustainability much stronger than is currently the case.

#### *Rationale:*

- (1) The data provided through the interviews in the Baseline Study suggest a range of understandings of the concept of sustainability, and that of all strands of the multi-strand concept of sustainability discussed in section II-3.1 the socio-cultural strand has received little, and the health and well-being almost no consideration (see section II-5.4.2). The data also suggest that education for sustainability as a comprehensive concept does not play any role in pre-service teacher education programs in Manitoba, with the exception of one faculty (see section II-5.4.2).
- (2) A common vocabulary and understanding of concepts are necessary for all stakeholders to be able to communicate and understand the goals and visions of education for sustainability in Manitoba. Many of the interviewees in the Baseline Study mention their concern for a lack of focus on and understanding of education for sustainability across the province and in their own division; they see this lack as hindering change toward implementing education for sustainability programs and curricula (sections II-5.2.2, II-5.2.5). Interviewees suggest that systems thinking and thinking in terms of sustainability need to become part of the culture of school divisions, schools, and classrooms (section II-5.2.5).

- (3) Responses by interviewees of the Baseline Study document the widespread notion that “Education for Sustainable Development (ESD)” is (primarily) concerned with the natural environment; issues like poverty, integration, and human development have (generally) not be seen as linked to education for sustainability (section II-5.2.5).

The scan of professional learning opportunities for education for sustainability within Manitoba reported on in section II-5.3 suggests as well that the primary focus of those opportunities is on issues around the natural environment.

- (4) Based on the arguments put forth in section II-3.1.1 the conceptualization of the “concern for the natural environment” is more accurately conceptualized as “concern for future generations” because the sustainability problem is a human problem more so than an environmental problem. A shift to the latter might also be more promising in terms of being of greater concern to Manitobans in general because the future for the children, grandchildren, etc. of Manitobans is put into focus.
- (5) The interviews of the Baseline Study with Manitoba school educators and teacher educators suggest a lack of consideration of Aboriginal perspectives on living sustainably in their conceptualizing of education for sustainability (see sections II-5.2 and II-5.4). Thus, the school system in Manitoba misses generally out on drawing on a long tradition of education for sustainability right here in what is now Manitoba (see section II-3.3) and on incorporating an Aboriginal perspective into school education in Manitoba. Pre-service teacher education programs can contribute addressing this issue.
- (6) The study presented in section III-2 suggest a varied level of prior experiences with diversity and Aboriginal peoples and cultures among student teachers, at least at the University of Manitoba (see section III-2.4). This could be a challenge when preparing teacher candidates for a culturally and linguistically diverse and Aboriginal student population. The individual research project 6 (see section III-7) inquires into one particular approach to developing “cultural proficiency”.
- (7) A scan of resource materials and professional learning opportunities focused on sustainable living in Manitoba (see section II-5.1) suggests that the resource materials and professional learning opportunities linked to the environmental strand of sustainability consider the need for personal and systemic change, while those linked to the other strands, like the socio-economic and the health and wellbeing strand emphasize stronger the use of “strategies”, like strategies of working with particular groups, for example, incorporating Aboriginal perspectives into the curriculum (see section II-5.3.2). The scholarship on teacher change (see section II-4.1) and whole system change (see section II-2.3) suggests very strongly the need for personal and systemic change for try change to occur and to be sustainable.
- (8) The scan suggests as well a relative lack of particularly library material on matters relating to the socio-economic aspect of sustainability (see section II-5.3.2).

**Recommendation 5.2: A Systems Approach to Whole-System Change**

We recommend that . . .

. . . **faculties of education**

- (a) work together with other faculties and the universities' central administrators toward a university-wide approach to sustainable living with the university and to education for sustainability as a central educational mandate of the universities.
- (b) consider effective ways to diversify the teaching force.

*Rationale:*

- (1) From a systems perspective, creating the conditions for sustainable living requires the understanding from all knowledge domains, while such understanding needs to be (transformed into) holistic understanding (see sections II-3.1 and II-3.2).
- (2) Interview data from the Baseline Study suggest how important leadership is for the change process in institutions to happen (see section II-5.4.3).
- (3) The findings of the individual research project 3 (see section III-4) suggests the value of a diverse teaching force for addressing the diversity of the student population in Manitoba.

**Recommendation 5.3: Teacher Candidates Self and Professional Identities**

We recommend that . . .

. . . **faculties of education** make working with teacher candidates' self (living sustainably) and professional identities (teaching and learning for sustainability) one of the central foci of their program.

*Rationale:*

- (1) Schooling and education has a normative aspect (the purpose of schooling and education) and faculty of educations need to address this critical aspect. It is a teacher candidates' self and her professional identity that are addressed when teacher education programs address the normative aspect of schooling and education (see section II-4.2.1). If one central purpose of schooling and education is to support students to contribute to the development and sustaining of a sustainable society, teacher candidates need to be prepared for that central purpose. The literature on learning to teach suggests that it is difficult to change pre-conceived notions about teaching and learning that teacher candidates bring with them into a teacher education program (see section II-4.2.1), so teacher education programs need to design programs and implementation strategies that can support the changing of pre-conceived notions if needed.

**Recommendation 5.4:** *Preparing Teacher Candidates for Education for Sustainability*

We recommend that . . .

. . . **faculties of education**

- (a) consider some of the suggestions discussed in sections II-5.4.2 and II-5.4.4 to start immediately with their work toward education for sustainability.
- (b) move toward an integrated pre-service teacher education curriculum and move toward preparing teacher candidates to implement a holistic and integrative curriculum.

*Rationale:*

- (1) Education for sustainability is linked with holistic education and integrative curricula (see sections II-4.4 and II-4.5). Teacher candidates need to be prepared to implement education for sustainability.
- (2) The arguments put forward for a holistic approach to teaching and learning in the K-12 school system apply equally to the education of adults (see section II-4.4 and II-4.5).

**Recommendation 5.5:** *School-University Partnerships*

We recommend that . . .

. . . **faculties of education** engage in meaningful school-university partnerships for their teacher education programs and their contributions to continuous teacher professional development in order to strengthen whole-system educational change for education for sustainability.

*Rationale:*

- (1) Literature on teacher education reform suggests school-university partnerships, particularly professional development schools, as the structural framework for the practice of sustained and effective teacher learning and for the preparation for such practice (see sections II-4.3.3, II-4.2.1, and II-4.1.3).

## 5.2 Recommendations Concerning Professional Development for Teacher Educators

**Recommendation 5.6:** *Professional Development for Teacher Educators*

We recommend that . . .

. . . **faculties of education** promote and offer opportunities for professional development for its teacher educators (professorial and non-professorial) to promote education for sustainability; faculties of education should particularly promote and support self-study of teacher education practices as an approach of self-directed professional development for teacher educators.

*Rationale:*

- (1) The argument presented in section II-4.2.3 suggests the importance of modeling by teachers in the educational process and, thus, the importance of teachers' on-going professional development particularly as it concerns teachers' way of living their lives.
- (2) Self-study of teacher education practices has been so far the most developed approach to teacher educators' professional development with a focus on changing teaching practice (see section II-4.2.3).

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