SASKATCHEWAN School Boards ASSOCIATION

For information on
Trustee Education and
Board Development visit
www.saskschoolboards.ca
bbashutski@saskschoolboards.ca

Diversifying Program Delivery with Technology

Module 8

Participate in this seminar to learn more about online education programs for boards of education. Module 8 workshop and resource materials include these important topics:

- The use of technology to change where and when students learn;
- The power of technology in teaching and learning; and,
- Creating a community of learners.

Contents

Introduction

This is a time of accelerated innovation driven by the rapid pace of globalization, technological advancement, and social change. Individuals, families, communities, workplaces, and social institutions—all are challenged to adapt constructively. The education system is no exception.

In the mid-20th century, basic literacy and job skills were sufficient preparation for productive, satisfying positions in society. A minority of students completed high school, and a rare few sought further education. Today, grade 12 is the standard prerequisite for rewarding employment and higher education. Education levels for employment positions are rising, and life long learning is required to stay current in any field.

Though the need and demand for education is increasing, access and options in many of Saskatchewan's rural and northern communities have reached limits within traditional delivery. Organizing students by subject and grade and relying on group-based, on-site instruction is optimally designed for large-scale enrolments. With low enrolments and proportionally less program support (e.g., budget, staff, facilities, resources), delivery needs to be modified for optimal efficiency and effectiveness.

Meanwhile, despite the learning opportunities available in schools today, almost one-quarter of students leave school before completing Grade 12 (Saskatchewan Education, 1998). The number of students opting for home-based education, though small, has doubled. For a variety of reasons, some students do not adapt and thrive within learning environments presently provided for them. Flexible delivery adaptation may improve the success and retention of at-risk students.

From outward appearances, education delivery in Saskatchewan has not changed much since the 1950s. The vast majority of students are in classrooms with about two dozen peers and a teacher from 9:00 a.m. to 3:30 p.m. on scheduled school days. Unconventional approaches are noticeable rarities in a landscape of primarily traditional delivery. Traditional schooling, like any delivery model, has advantages and disadvantages. Its overwhelming familiarity, however, tends to eclipse other possibilities that are within the scope of Core Curriculum flexibility.

Many schools in Saskatchewan and beyond have already achieved positive results by reconfiguring space, resources, students, teachers, or time in some unorthodox way. Others have extended capacity by incorporating external expertise, resources, and facilities. These trailblazers have discovered first hand that learning need not be confined to any particular place, time, communication medium, or grouping of teachers and learners. The next step is to share expertise, ideas, and supports to promote diversifying learning opportunities on a province-wide scale.

Diversifying Learning Opportunities

Diversifying learning opportunity means creating a variety of delivery models to expand options, accommodate student diversity, and adapt to local conditions. It means demonstrating that quality learning opportunity can be constructed in many different ways. It means enhancing the capacity of the education system to respond to diverse individual needs and community contexts.

Adapting delivery for the best fit with learners and their environments is the primary focus. The guiding principle is to use all available resources most efficiently and effectively to optimize learning opportunity in each local circumstance.

Delivery adaptation, in a small or large way, may be focused on one or more of the following strategies:

- Enabling individual pacing and continuous progress;
- Moving students or teachers among learning sites;
- Modifying school day, week, or year schedules;
- Creating virtual schools to offer full programs;
- Augmenting on-site programs with distance delivery;
- Offering full support for home-based learning; or
- Integrating community facilities and expertise.

Variable Dimensions of Learning Environments

The traditional approach to schooling fits the popular "mental model" of what education should look like. It is difficult to imagine equally viable but different learning environments when the word education habitually triggers images of traditional schooling.

Seriously considering a proposal to diversify learning opportunity on a wide scale requires being able to imagine the many shapes that learning opportunity might take. Thinking of learning environments in terms of potentially variable dimensions may stretch the imagination and establish common reference points.

Learning environments can be defined by six dimensions. The four variable dimensions—who, where, when, and how—are open for creative adaptation. The two constant dimensions—why and what—are shaped by Saskatchewan's education goals, principles, and Core Curriculum which form the foundation for all public education delivery in the Province. While with whom, where, when, and how students learn may vary widely—what and why should always be consistent with the goals and philosophy of public education in Saskatchewan.

Who

Who participates in a learning activity could vary in terms of roles, number, and composition. Roles might consist of any mix of teachers, students, guest experts, mentors, tour guides, and so on. The number of participants engaged may vary from one person to a dyad, a small or large group, or a distributed network across virtually connected sites. A stable group of participants may work together over a long term through a series of learning activities, or group membership may fluctuate from one activity to another.

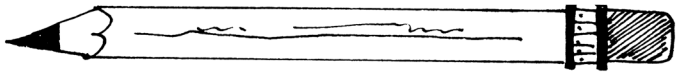
Where

Where learning activities are located could vary from a classroom to any school, home, workplace, community, or cyberspace setting—from one site to multiple sites in sequence or simultaneously. All participants could be present at one location or connect together from many different or distant locations.

When

When learning activities occur could vary in terms of scheduling, duration, and timing. Scheduling and duration can vary from fixed study periods and term deadlines to open schedules, flexible terms, and continuous progress. Timing of activities might be synchronous, meaning all participants engage at the same time, or asynchronous, meaning participants engage at different times. Participants in a half-hour, live video-conference, for instance, would have to tune in at the same time. Participants in a three-day electronic text conference could read and post comments at their convenience over the duration.

Notes



How

How learning occurs refers to the medium or media chosen to connect participants in a learning activity, not the essential design, or what, of an activity. That is, students can do collaborative planning together in a classroom corner, over the phone, or by electronic conferencing. Conducting guided research can be done in a library, on the Internet, or in a field setting. Most learning activities lend themselves to a range of interaction media.

The interactivity level of learning environments relates more to the nature of the activity than to the medium of interaction. Lecturing is basically one-way transmission of information, whether delivered to a live audience or a video camera. Debating controversial topics, on the other hand, invites dynamic interaction whether by face-to-face communication or through electronic text conferencing.

Many media support both synchronous (real time) and asynchronous (delayed time) interactions. For example, a teacher can guide a science lab activity as a synchronized, whole-class event or at delayed intervals as students circulate among lab stations. Electronic text exchange is usually delayed but becomes synchronous by using the real-time "chat" feature of electronic communication software. Telephone, primarily a medium for live conversations, can be used to exchange delayed messages.

The latest how possibilities for learning greatly expand the who, when, and where possibilities. Given ICT means now available, participants need not be in the same location or engaged at the same time to learn together. A student on a national concert tour could maintain continuous enrolment in one school. A specialized science teacher could facilitate learning with students in the next room, town, or province. A working student could log onto a delayed-time electronic conference after the evening shift. A home-based student could pursue studies from various sources near and far.

The classic configuration of the four variable dimensions is to situate one teacher and 20 to 30 students in a classroom for a scheduled 50 minutes of live interaction. Changing any one of these variable dimensions can create an equally viable but quite different learning environment.

Traditional Schooling	Options for Diversifying Program Delivery		
Who? One teacher with 20 to 30 students as age-peers	Teams of teachers work with groups of students. Older students help younger students.	Mentors, resource persons, parents, and community members participate in activities.	Independent students connect with teachers, mentors, and peers as needed.
Where? In a classroom	Learning facilities include individual workstations plus small and large group areas.	Learning environments are extended to other schools and community sites.	Learning opportunity is accessed online from the home, school, or elsewhere.
When? 50-minute periods over a year	In-depth study of thematic units occurs in longer time blocks over shorter terms.	Students can negotiate flexible attendance or choose day or evening classes.	Students can connect to online resources and courses 24 hours a day, 365 days a year.
How? Through face-to-face communications	Interactions with resources, teachers, peers, and mentors occur by various means.	Learning activities include online and on-site interactions with other participants.	Independent and collaborative learning activities are guided by online teacher support.

Envisioning Technology in Education

The Board of Saskatchewan's Educational Technology Consortium has developed a vision for Saskatchewan in which technology is used to expand opportunity and increase choices for Saskatchewan students (2003).

The Vision is that technology is part of all students' everyday learning experience. Students use technology in ways that support the achievement of educational goals and allow learners to develop their potential to the fullest extent.

The Dimensions of progress towards the vision include:

1. For Learners: Technology is part of all students' everyday learning experience. Students use technology in ways that support the achievement of educational goals and allow learners to develop their potential to the fullest extent.

2. For the Learning Environment: In every classroom, in every school, in every part of Saskatchewan, students are using online resources to learn. Because technology is fully integrated into teaching and learning in the regular classroom, all students master the skills essential for success in a highly competitive and rapidly changing world.

3. For Professional Competency: Educators are fluent in their use of technology and provide positive technological role models for students. They use technology to enrich, enhance and extend student learning. They also use technology to extend their own learning and professional growth.

4. For System Capacity: The complex system that delivers education through technology addresses the needs of everyone who wants to complete Grade 12 whether they be adult, teen or child; whether they are in a K-12 public, independent or First Nation school; whether they are being home schooled, enrolled in a post-secondary institution or working on their own.

5. For Technology Capacity: There are adequate technologies, networks, resources and courses, and school-level and provincial supports so that technology serves to develop each student's potential to the fullest extent.

6. For Community Connections: Schools, businesses, government agencies, and community organizations partner to use scarce resources in the most effective way and to expand opportunities for students. Parents and community support effective use of technology in learning.

7. For Accountability: There is agreement on what success with technology looks like and there are measures in place to track progress and report results. Use of technology is monitored to ensure a cost-effective and competitive alternative for delivering educational programs across Saskatchewan.

Instructional Technology and SchoolPLUS

SchoolPLUS involves responding to the educational needs of all students and helping them to achieve success in school and in life. It means:

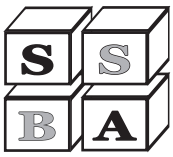
- Responding to the varying needs of students and accommodating their different learning styles;
- Reaching out to those who have not achieved success at school or who left school without attaining the minimal grade 12 standing required for employment nor having the knowledge and skills necessary to be successful in the workplace and in society;
- Meeting these needs in traditional and innovative teaching and learning;
- Ensuring greater success for students and young people of the community by looking at providing education programs that may be significantly different than the traditional school models; and,
- Providing diversity in program delivery with variations in location, format and time for learning.

Availability of versatile distance learning opportunities could significantly enhance responsive capacity at the local level.

Information technology can provide opportunities for students to attain the outcomes desired and required. Information technology offers the potential to support students and youth learning anytime and anyplace and to offer life-long learning and universal access to high quality E-learning content thereby overcoming the barriers of opportunity, resource capacity and accessibility. The Saskatchewan government has developed infrastructures, resources and a comprehensive support base to facilitate teaching and learning with technology.

Consistent standards and policies are necessary to ensure that distance learning opportunities are congruent with Core Curriculum, reasonably sustainable over time, and necessary to meet demand. This can be ensured by allocating resources for developing and implementing a technology plan that defines the goals to be achieved through the use of technology, integrates technology into instruction and learning, and provides for accountability to assess progress toward the desired goals.

Building Board Knowledge



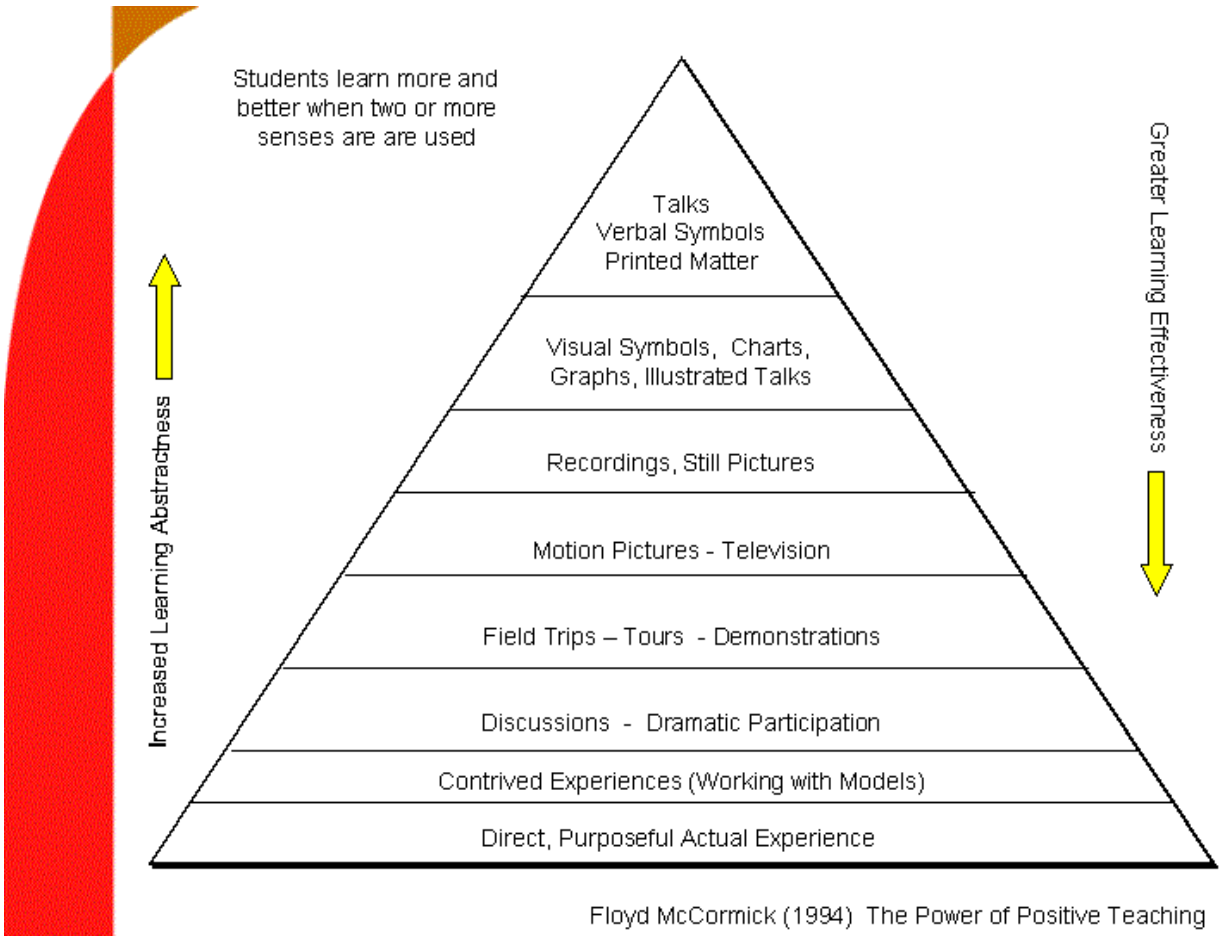
1. ***What do students need to know and be able to do to be successful?***

2. ***How current is your school division's technology plan?***

3. ***What key policies impact your instructional technology?***

4. ***At what spending levels is it possible to educate a child?***

What We Know



Becoming a Professional Learning Community

As school divisions strive to become professional learning communities, boards of education must ask themselves essential questions.

- What do we want student to learn?
- How will we know that they have learned it?
- How do we help those who have not learned so that they do learn?
- Spend more or less?
- Request evidence?
- Assign new roles?

Add to these questions – What are the board decisions that need to be made?

- Spend more or less?
- Request evidence?
- Assign new roles?

Rejection of Modern Media

- Alternatives for improved approaches for delivery have not been seriously considered;
- Emphasis on passive listening rather than active participation and interaction;
- Communication dominated by spoken word and writing;
- Leaders ignore or condemn the potential of modern media to transform the institution; and,
- When modern media is used – it is just another way to communicate what used to be communicated in other ways.

Pierre Berton (1965) The Comfortable Pew

The Mythology of Schooling

- Schools are best organized in a hierarchical and authoritarian structure that rewards conformity and obedience;
- Education is a uniform, linear, and lockstep process with age segregated activities for acquiring a body of 'right' information;
- The acquisition of content in discrete disciplines is highly valued. Present a fixed curriculum part to whole using textbooks;
- Learning is a product best measured by courses and years within a fixed time period;
- Timetable program delivery around teachers. Group students in age defined classrooms; and,
- School is a place where academic learning is presented to children aged 6-18 years for 185 days per year.

The Delivery of Educational Services

Many school divisions follow a traditional model of school organization as shown in the illustration below. However, changes are evident in school divisions as they embrace the promise of new technology to assist instruction or, in some cases, to be the vehicle of instruction.

Delivery of Education in the 21st Century

Research suggests that teachers are struggling:

- With the new technologies;
- With how to integrate new software applications; and,
- With their philosophy of education in light of these recent developments

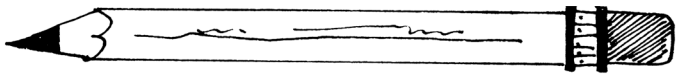
Computer technology and the Internet have the power...

- To transform schools;
- To liberate teachers; and,
- To offer students a higher quality education.

Current findings suggest that technology-assisted distance education is as effective as traditional classroom instruction and may offer students greater opportunities. Criteria are being developed for indicators of effectiveness.

FuturEd www.futured.com

Notes



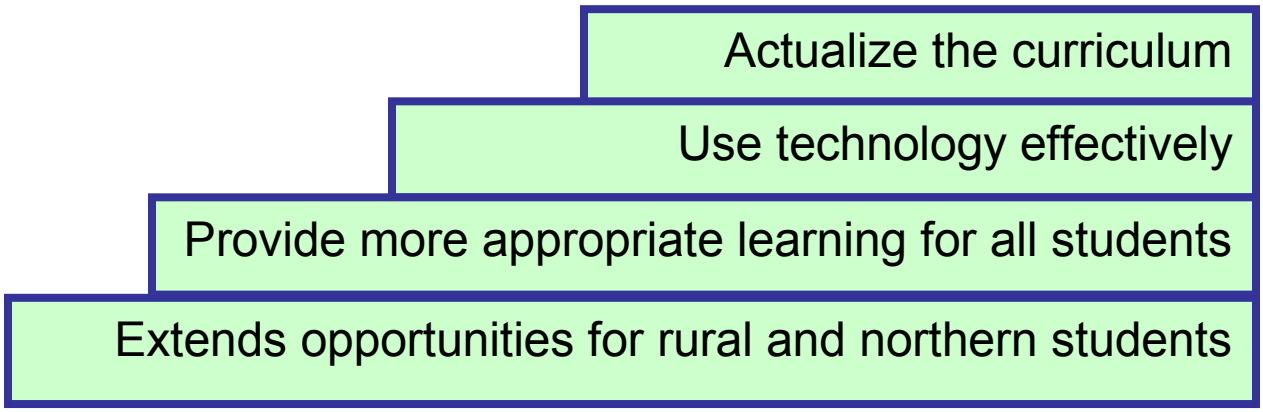
Instructional Information Technology

Instructional technology is redefining the roles of teachers and students. In the technology-enabled learning environment, the traditional view of teaching and learning changes from a traditional instruction approach to an extension of instruction to knowledge construction. This shift is outlined below.

Why diversify opportunities for learning?

Learning takes place all the time and everywhere. It takes place as long as our senses function and wherever that occurs. It is not restricted to time and place and it takes place differently for different people and depends on a variety of factors. Learning is individualized. In order to meet the differing needs, abilities and circumstances of individuals, learning and instruction must be individualized. New teaching methods and new technology can better respond to the diverse student needs.

Diversification of opportunities for learning helps:



Accountability

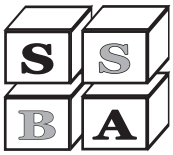
Accountability for instructional communication technology and distance education should be based on results rather than of approval of a school division technology plan. However, this raises some important questions for school board members.

- How will the school monitor program quality?
- How will the school monitor evaluations?
- How will the school strengthen capacity to ensure student learning needs are met?
- How will parent understanding and support be developed?

Online Learning

- What are the characteristics of a good site facilitator?
- Where should computers be located?
- How do you schedule and build structure for online learning?
- How does the program provide for reflection and discussion?
- How do students access other resources?
- What are the criteria and processes for student evaluation?

Building Board Knowledge



1. ***In planning an online education program, what factors are important for your school division?***

2. ***Do all students utilize online learning or just those students in remote areas?***

3. ***Do we focus our efforts on required areas of study or the optional courses?***

4. ***How do we decide which courses and resources are good?***

5. ***What should the student, the board and the province pay for?***

The Internet's Three Waves

First Wave

- Technology was TCP/IP;
- Application was text and data transfer;
- The network was an add-on to the computer; and,
- The organization remained real and local.

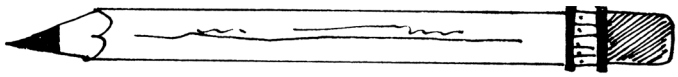
Second Wave

- Technology is HTTP;
- Application is widespread access to images, sound and video;
- The network and the computer are partners; and,
- The organization is beginning to become virtual.

Third Wave

- Will include web services, grids, P2P, repositories, open source, etc.;
- Applications will be built by linking services across the network;
- The network and the computer will become a single infrastructure; and,
- CoIs will become as important as organizations.

Notes



Online Learning Issues

Online learning offers the possibility of providing diverse learning opportunities to students with diverse learning needs. However, there are issues regarding online learning that need to be considered and addressed before embarking on such a course of action. These issues include:

- **Access**: There must be fair and equal access to learning technology and distance education courses for all Saskatchewan students. They should have equitable educational opportunity and benefit. Their diverse educational needs of students should be met. Technology should be part of every student's basic education.

- **Quality**: Determining what is a quality program or course of study can be a challenge and may require new mechanisms. Standards and evaluation criteria need to be developed to assist school divisions and schools to do this. It is the design of the instruction that impacts the learning and also what the students bring to the instructional situation. Determining whether our distance learners are achieving our intended outcomes no matter how they're getting it is critical.

- **Capacity**: Access to learning technology and distance education can take place in school, at home or in the community. Schools and teachers deter mine the best method of course delivery and educational partners work together for optimal E-learning.

- **Learning**: The way in which students learn online is significantly different than the way they learn in classrooms. However the research indicates that the must successful distance education programs are those that enable student cooperation, teamwork and interactivity. E-learning must support the diverse needs of all students, including Aboriginal, special needs, at-risk, Francophone and French immersion students.

- **Jurisdiction**: Saskatchewan Learning provides leadership to support, facilitate, manage and coordinate the effective and efficient provision and use of technology and infrastructure at the provincial level. There is a need for an organizational structure that provides central planning coordination, funding and framework; encourages participation and ownership among all partners, and provides core administration functions for learning technology and distance education.

- **Stability**: Provision of access to learning technology and distance education requires a commitment of human and financial resources and coordination of these resources in order to provide educational development and delivery stability. Funds are required for technology and distance education start-up, transition, course design and course delivery.

- **Supervision**: Students taking distance education courses will require support and supervision if they are to be successful in their studies. They will require supervision at school, at home, in the community or a combination of these locations depending on the determined site for receiving the course. Each of these has its unique implications and requirements.

- **Assessment**: Assessment and evaluation are integral parts of the cycle of planning, teaching, assessing and reporting. They involve gathering evidence of student knowledge, understanding and skills and interpreting the information to make judgments and decisions about the student's learning needs. These judgements are based on frequent and varied assessment. How authentic assessments will be made and reported in the distance education courses can have a direct impact on the learner. How curriculum, instruction and assessment are adapted to meet the individual needs of students is critical. How this is addressed in a distance education course needs to be established.

- **Curriculum**: Students should take online courses that are congruent with the learning outcomes of the Core curriculum. They should also have access to the best possible educational resources and courses and a variety of distance learning enabling mechanisms should be established for credit recognition of courses. Student and teacher interaction should be a component of distance learning. Courses of study should still be governed by overall professional and provincial expectations such as quality standards.

Canarie's Vision of an E-learning Society

A civil society based on using e-learning capability to support anytime, anyplace, life-long learning and universal access to high quality e-learning content, overcoming the barriers of opportunity, resource capacity and accessibility.

- **Partnerships**: Distance education enterprises are partnerships. They are characterized by the integration of a great many parts working toward a common goal. Identifying a common goal and gaining the support of the partners to work toward it may be a daunting task.

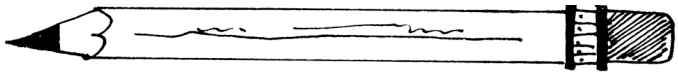
- **Human Resources**: Teachers and students require training in the use of technology and distance education courses. They also require support as they use the technology and develop or take online courses. Parents also require training in helping their child engage in this form of learning. The initial and ongoing support and associated costs present a challenge.

- **Acceptance**: Parents, teachers, the community, business and industry may have reservations about students taking distance education courses. They may be uncomfortable with the concept of instruction that is not face-to-face with a teacher or with structures that enable students to take courses away from school. They may not be willing to make the investment in time and resources to accommodate online education.

"Our schools thrive on information. In the ever-changing world filled with new technology, our teachers and students require the right information, from the right sources, today. Having direct access to industry information gives the competitive edge needed to succeed. Student performance can be improved when the enhancement of teaching and learning using technology is adopted as the norm."

National School Board Association

Notes



Reflection

Three key ideas from this module are:

-
-
-

My questions:

-
-
-

	Ideas I want to learn more about:	Ideas for my board to consider:
To be an effective trustee:		
To be an effective board:		

My Personal Plan of Action

In order to strengthen the governance of our board of education, I make a commitment to:

State the Area You Want to Improve	I Commit Myself to the Following	When Will I Do This?	How Will I Know I Have Been Successful