The Role of Technology Enhanced Learning in Academic Preparation

A Strategy and Action Plan

Phase 1:
Academic Preparation Learning Needs and Institutional Response

Phase 2:
Assessment of Existing TEL Resources

Phase 3:
Identification of Priorities for TEL in Academic Preparation

Phase 4:
Action Plan

September 2002

Report of the

Technology Enhanced Learning Academic Preparation Subcommittee

Representing Saskatchewan Institute of Applied Science and Technology, Regional Colleges, University of Regina, University of Saskatchewan, Gabriel Dumont Institute/Dumont Technical Institute, Saskatchewan Indian Federated College, and Saskatchewan Learning

with research and writing assistance provided by

Loraine Thompson Information Services Limited

401 – 2305 Victoria Avenue
Regina, SK S4P 0S7

Phone: (306) 757-3206   Fax: (306) 757-3206   E-mail: ltisl@sasktel.net

Executive Summary

Background to the Strategy and Action Plan

Academic preparation for adults is an area of priority for all of Saskatchewan's post-secondary institutions and for Saskatchewan Learning. Academic preparation is not a single program designed for a single group of students, but rather a category that includes many types of programs. All academic preparation programs are designed for students who want to improve their academic skills and/or obtain a credential in order to:

- participate in a higher level of education;

- enter the workforce;

- improve their chances of success and advancement in the workplace; and/or

- improve their quality of life.

Academic preparation needs range from life skills, to literacy and basic education, to qualifications for entrance into technical and university programs.

In 2000-01, the Technology Enhanced Learning (TEL) Steering Committee identified academic preparation as a priority, and some courses and other content were developed. This emphasis is continuing, but within the context of a plan that identifies system-wide priorities for new initiatives. A TEL Academic Preparation Subcommittee, representing Saskatchewan Institute of Applied Sciences and Technology (SIAST), the universities, the regional colleges, Aboriginal institutions, and the department, was formed in 2001-02 to develop a strategy and action plan for the use of technology to support various forms of academic preparation for adults.

The sub-committee reviewed the needs of learners for academic preparation and the current programs and services designed to respond to these needs. Based on this review, the sub-committee examined options for using or adapting existing resources for TEL and adult learners, and identified priorities for new developments.

The priorities identified by the TEL Academic Preparation Subcommittee and the actions needed to achieve those priorities are listed below.

The Strategy and Action Plan that follows will guide future development of priorities and future investments in TEL in the area of academic preparation.

Priority	Actions to be taken

1. Courses

Numerous courses are available for different purposes, but these may need to be adapted in order to address the unique needs of adult learners. Courses need to reflect common standards for quality and be accessible for people with special needs. Mechanisms are needed to enable program providers to coordinate and share in the development and use of online courses.

Priority 1.1: **Establish criteria to assess existing courses and to guide development of new courses for academic preparation.**	• Establish a group to develop criteria that can be used to assess availability and applicability of existing courses and to guide development of new courses. • Provide this group with appropriate resources.
Priority 1.2: **Offer a complete Adult 12 program and related bridging courses online.**	• Confirm subject area course priorities for adaptation or development for online academic preparation starting in 2002-03. Tentative priorities are English Language Arts, Math and Physics 20 and 30. • Prepare a request for proposals that outlines the process for developing Adult 12 courses and related bridging courses. • Include academic preparation courses in the annual review of provincial funding for TEL content development.
Priority 1.3: **Develop policies, protocols and procedures that enable and support sharing of resources.**	• Facilitate an agreement among institutions that allows for access to academic preparation course materials developed with public funds in Saskatchewan. • Establish a databank of learning objects containing a variety of online components, and make the database available for use in different ways, in different courses, and at different grade and age levels.

2. Learning Resources

Academic preparation students need access to supplementary learning materials for use on their own or in study groups to enrich, expand on or complement their courses. As with the courses, these resources need to reflect common standards for quality, integration and coordination, and suitability for adults. In addition, learning resources need to be readily available to learners across the province.

| **Priority 2.1:**

Provide academic preparation students with access to online learning resources. | • Develop guidelines that can be used to assess the quality and appropriateness of course-specific learning resources (see Priority 1.1).

• Ensure that all technology enhanced academic preparation courses are resource-rich with links to suitable course-specific resources.

• Add an "Academic Preparation" section to the Campus Saskatchewan Web site and provide links to existing lists of online reference materials. |

Priority	Actions to be taken

3. Student Support

Student support can include academic services such as tutoring, writing skills, discussion groups, and testing; personal and practical support such as financial aid, life skills coaching, counselling, daycare and transportation; and technical services such as a help desk and access to computers. Services directly related to studies may be built into the courses themselves, while other services need to be coordinated with support services provided by institutions and supporting agencies.

Priority 3.1: **Build student support into every technology enhanced academic preparation course.**	• Assist students in assessing their level of academic and technological readiness for each online course and provide the academic and technical support required as part of the course. • Counsel students about other support services available and refer them to appropriate training necessary to ensure their readiness prior to enrolment.
Priority 3.2: **Ensure that academic preparation students have the skills they need to succeed with technology enhanced learning.**	• Create a generic online questionnaire that enables students to assess their technological skills for online learning and place it on the Campus Saskatchewan Web site. • Ensure that TEL preparation and technological literacy courses being developed can be broken into small modules to address specific skills.
Priority 3.3: **Provide academic preparation students with information about TEL courses and programs available to them.**	• Add to the Campus Saskatchewan Web Site a catalogue of online academic preparation and GED preparation courses available at Saskatchewan post-secondary education institutions and other Canadian institutions.

4. Professional Development and Support

Instructors need specialized training, peer support and technical support in order to use technology effectively in teaching. Instructors working with students in academic preparation often have unique concerns that are not always addressed in services provided by institutions for mainstream faculty and instructors.

Priority 4.1: **Provide online support to adult educators who are using technology for academic preparation courses.**	• Consult practitioners to determine what type of online professional development and support would be most useful to them. • Identify online resources relevant to instructors, tutors, counsellors and others working with adults in academic preparation, and consolidate these in resources in related categories in the Campus Saskatchewan Web site. • Create a chat room, listserv, or discussion forum within the Campus Saskatchewan Web site to support an online community of practitioners working with adults in academic preparation.

Priority	Actions to be taken

5. Coordination of Future Work To Implement Priorities

Academic preparation programs offered by the universities and SIAST are designed to assist students in preparing for entry into degree, diploma and certificate credit programs. SIAST, the Regional Colleges, DTI and SIIT also offer Basic Education, Adult 12 and other academic preparation programs in their constituencies. All post-secondary institutions would benefit significantly from a more uniform and coordinated approach to academic preparation, through effective use of technology. Agreements and common operational procedures are needed in order to facilitate coordination and cooperation.

Priority	Actions to be taken
Priority 5.1: **Provide technology enhanced academic preparation within a framework that enables cooperation across the province.**	• Identify options for coordinating TEL in academic preparation across the province, outlining roles and responsibilities of partner institutions.
Priority 5.2: **Develop a model for funding that fosters greater coordination and sharing of resources and support for academic preparation among program providers.**	• Articulate and validate the issues related to costing/pricing and funding. • Review funding models and recommend a provincial approach to cost/pricing model that works for both K-12 and post-secondary institutions.
Priority 5.3: **Establish an ongoing TEL Academic Preparation Subcommittee.**	• Establish a mandate for the continuing work of this subcommittee to oversee the development of technology enhanced academic preparation. • Ask the post-secondary education institutions to confirm their present representatives on the TEL Academic Preparation Subcommittee or appoint new representatives to the ongoing subcommittee.

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Introduction

Introduction

This introduction contains the following sections:

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The TEL Action Plan

In today's world, technology permeates virtually every aspect of life. Education is no exception. Technology is used to support new ways of teaching and learning, both at a distance and in the classroom. It also can be used to enrich and enhance the quality of education programs.

Saskatchewan's post-secondary education institutions and the provincial government have worked together in establishing priorities for using technology enhanced learning to expand students' access to learning opportunities and to enhance the quality of education programming.

> *Technology enhanced learning means using a variety of information and communications technologies to provide flexible, high quality learning opportunities for both on and off-campus students. Technologies include, for example, the Internet and Web-based applications, video and audio conferencing, CD-ROMs, videotapes and interactive television. The use of technologies supports distributed learning where faculty and students can be located at different places and can interact at different times, enabling people to participate in education and training "anytime, anywhere". Technology enhanced learning can be used to offer wholly "virtual" online opportunities, can be multi-mode, employing a combination of technologies, or can be integrated with traditional classroom instruction or independent study courses* (Campus Saskatchewan Memorandum of Understanding, 2002).

The Technology Enhanced Learning (TEL) Action Plan provides a framework for the implementation of technology enhanced learning (TEL) within Saskatchewan's post-secondary system. It stems from a consensus among post-secondary institutions, government departments and related agencies about the need for province-wide, coordinated action to make effective use of technology in teaching and learning. The TEL Action Plan provides a forum for cooperation among Saskatchewan's post-secondary institutions (TEL Steering Committee, 2000).

The post-secondary education partners have identified four goals for working together to enhance the quality and accessibility of programs and services through technology.

> ***Technology enhanced learning will assist Saskatchewan's post-secondary institutions in:***
>
> - ***Developing and retaining*** *students, graduates and faculty for a knowledge-based society;*
>
> - ***Advancing*** *education and training for people in rural and northern communities;*
>
> - ***Enhancing*** *First Nations and Métis education and training; and*
>
> - ***Developing*** *Saskatchewan's intellectual capital.*
>
> (Campus Saskatchewan Memorandum of Understanding, 2002)

Within the framework of the TEL Action Plan, the partners are establishing Campus Saskatchewan (http://www.campussaskatchewan.ca) to achieve their common goals. The Campus Saskatchewan members have agreed on the following priorities for collaboration:

> - *Increase the availability of courses and programs using technology enhanced learning that respond to student demands and provincial economic and social needs.*
>
> - *Remove barriers to enable students to complete programs by taking courses, using technology enhanced learning and other alternative means, from more than one member institution within Campus Saskatchewan.*
>
> - *Enhance online and other technology enhanced learning services for students, including access to technology and technical services, advising and counselling, study supports, and library services.*
>
> - *Develop and maintain a shared Web site that provides information about members' courses available in alternative formats and links to the members' sites and services.*
>
> - *Develop and undertake inter-institutional initiatives to enhance faculty development and support in technology enhanced learning.*
>
> - *Pursue cooperative arrangements with consortia or institutions in other jurisdictions that enhance or support the technology enhanced learning programs and services offered by the member institutions.*
>
> (Campus Saskatchewan Memorandum of Understanding, 2002)

One of the key objectives for inter-institutional cooperation is to develop content and effective strategies for technology enhanced learning (TEL).

The goal is better service to students. Using technology to provide courses means that more students and a broader range of students can be served. Using technology to enhance the quality of programs and courses means developing content and teaching strategies that respond to a greater range of learning styles and are more engaging to students.

The TEL Academic Preparation Strategy and Action Plan

Background to the Strategy and Action Plan

Academic preparation for adults is an area of priority for all of Saskatchewan's post-secondary institutions and for Saskatchewan Learning. Academic preparation is not a single program designed for a single group of students, but rather a category that includes many types of programs. All academic preparation programs are designed for students who want to improve their academic skills and/or obtain a credential in order to:

- participate in a higher level of education;
- enter the workforce;
- improve their chances of success and advancement in the workplace; and/or
- improve their quality of life.

Academic preparation needs range from life skills, literacy and basic education to qualifications for entrance into technical and university programs.

In 2000-01, the TEL Steering Committee identified academic preparation as a priority, and some courses and other content were developed. This emphasis is continuing, but within the context of a plan that identifies system-wide priorities for new initiatives. An Academic Preparation Subcommittee was formed in 2001-02 to develop a strategy and action plan for using technology to support various forms of academic preparation for adults. A list of the members of the Academic Preparation Subcommittee appears in the box on the right.

Members of the Academic Preparation Subcommittee

Gabriel Dumont Institute/Dumont Technical Institute (GDI/DTI)

- Jackie Hunchak, Program Coordinator

Regional Colleges

- Bruce Probert, CEO, Prairie West Regional College (until March 15, 2002)
- Denise D'Amour, Northlands College (after March 15, 2002)

Saskatchewan Learning (K-12)

- Margaret Lipp, Executive Director, Curriculum and Instruction Branch

Saskatchewan Learning (Post-Secondary Education)

- Donna Krawetz, Executive Director, Technology Enhanced Learning Branch (Chair)
- Mary Seiferling, Director, Technology Enhanced Learning Branch
- Jeri Marchinko, Project Manager, Basic Education Redesign, Programs Branch

Saskatchewan Institute of Applied Science and Technology (SIAST)

- Brian Kraus, Dean, Basic Education
- John Foster, Head, Literacy Program, Woodland Campus

Saskatchewan Indian Federated College (SIFC)

- Esther Sanderson, Dean, Northern Campus

University of Regina

- Nancy Welta, Acting Coordinator/Manager, First-Year Services

University of Saskatchewan

- Doug MacLean, Professor, Mathematics and Statistics

Consultant

- Loraine Thompson, Loraine Thompson Information Services Limited, Regina

The mandate of the Academic Preparation Subcommittee is:

- to develop and oversee a strategy and an action plan for applying technology in academic preparation courses and programs; and
- to provide ongoing leadership in implementing the action plan.

The strategy and action plan will:

- provide a common understanding of what needs to be accomplished;
- build on existing capabilities and the findings from previous research studies (Frison, 2001; TEL Academic Preparation Task Team, 2001); and
- recognize the lead role of Saskatchewan Learning in establishing policy for basic education for adults, which is currently being redesigned (Basic Education Redesign Task Team, 2002).

The strategy and action plan developed by the Academic Preparation Subcommittee will be reviewed by the TEL Institutions Working Group and forwarded to the TEL Steering Committee for final approval.

Development of the Strategy and Action Plan

The key focus of this paper is to outline a strategy and action plan for using technology to prepare adult students for completion of Grade 12 and/or entry to post-secondary programs, or academic preparation for adults. The strategy and action plan was developed in four phases.

- **Phase 1 – Academic Preparation Learning Needs and Institutional Response**

  The purpose of Phase 1 of the TEL academic preparation strategy and action plan was to:

  - Identify current needs of adult learners for academic preparation;
  - Compile previous research on student demographics; and
  - Identify ways in which Saskatchewan's education institutions have responded to the needs of adult students for academic preparation.

- **Phase 2 – Assessment of Existing TEL Resources**

  The purpose of Phase 2 of the TEL academic preparation strategy and action plan was to:

  - Describe existing TEL resources for adult academic preparation within Saskatchewan;
  - Describe TEL resources available from other jurisdictions;
  - Identify best practices and effective approaches, based on experience in Saskatchewan and elsewhere;
  - Identify gaps in current TEL courses, programs, learning resources and services in relation to the learning needs of adult academic preparation students; and
  - Draw conclusions regarding applications of TEL to meet the identified learning needs of adult academic preparation students in Saskatchewan.

- **Phase 3 – Identification of Priorities for TEL in Academic Preparation**

  The purpose of Phase 3 of the TEL academic preparation strategy and action plan was to:

  - Identify priorities for developing/acquiring content and related learning resources (e.g. courses/modules, databases, adaptations);

  - Identify requirements for effective service delivery and learner support;

  - Identify required processes, mechanisms and policies for collaboration (e.g. agreement on sharing course materials and resources, learning object databases/repositories, standards for shared content, software compatibility, funding arrangements, ongoing planning); and

  - Recommend roles and responsibilities of various institutions, departments, agencies and Campus Saskatchewan.

- **Phase 4 – Completion of Entire Project**

  The purpose Phase 4 of the TEL academic preparation strategy and action plan was to:

  - Compile an action plan for collaboration to address each priority. The action plan includes:
    - action to be taken, by whom and when
    - lead institution and responsibilities
    - partners, including who is responsible for each action;

  - Revise the first three components completed in phases 1, 2 and 3; and

  - Compile all four components of the project into a unified, cohesive final report.

Basic Education Redesign

Academic preparation is a broad term. It is used informally to refer to different types of programs designed for adult students who want to improve their academic skills and/or gain the qualifications needed to participate in further education, increase their employability, or improve their quality of life.

Basic education is one type of academic preparation. Basic education includes not only the programs and services that lead to academic certification (up to Grade 12), but also non-credit programs that develop skills related to employment as well as family and community life.

Saskatchewan Learning sets curriculum policy for adult learning up to the Grade 12 level, which includes all basic education programs. Basic education credit programs are developed and offered by the regional colleges, SIAST, Dumont Technical Institute (DTI) and Saskatchewan Indian Institute of Technologies (SIIT).

Basic Education in Saskatchewan is currently being redesigned. A 1999 review (KPMG Consulting) recommended greater connections between basic education and employment and greater emphasis on the retention of Aboriginal students.

In response, Saskatchewan Learning made a commitment to redesign basic education. Phase 1 of this process is now complete (Basic Education Redesign Task Team, 2002).

Vision for Basic Education

The vision for basic education in Saskatchewan developed by the Basic Education Redesign Team is:

> *Basic education in Saskatchewan provides opportunities for adults to further develop academic, employability, and functional skills that contribute to life-long learning. It helps learners to speak with their own voice and enhances individual and community well-being.*
>
> *Basic education is accessible, responsive and supportive of adult learners. Integrated approaches and partnerships are used to address learner needs. The diversity of learners from all cultures and with varying abilities is respected. Success in basic education is measured by learners setting and progressing towards goals.*
>
> *Basic education incorporates adult learning principles and practices to ensure learner success. Curricula reflect a holistic approach to learning and are flexible in order to meet diverse regional needs. Basic education curricula are reviewed and updated regularly.*
>
> (Basic Education Redesign Task Team, 2002)

It is important that the TEL Academic Preparation Strategy and Action Plan be consistent with basic education redesign, so that policies, resources and programs developed for TEL promote the philosophy, vision and intent of basic education redesign.

Technology and Adult Learning

Imel (1998) has reviewed the literature on technology and adult learning and has identified four basic approaches to integrating technology into adult learning. These approaches are described below:

- **Technology as Curriculum** – Not only can adults learn content through technology, they can also learn about technology itself and develop the skills to use it competently. For example, many institutions offer "Exploring the Internet" courses.

- **Technology as a Delivery Mechanism** – A second approach for integrating technology into adult learning is to use it as a means to deliver instructional programs.

- **Technology as a Complement to Instruction** – In adult learning settings, technology is frequently used to complement and extend learning opportunities. In adult basic education, for example, a student might use a piece of software to practice a weak or underdeveloped skill area that has been the focus of classroom instruction. Another example is the use of CD-ROMs or Internet activities to support traditional paper-based distance education.

- **Technology as an Instructional Tool** – When technology is used as an instructional tool, it is integrated into instructional activities. For example, when students complete a writing assignment they are learning word-processing skills as well as composition skills. Although acquiring technological skills is not the primary focus in this approach, instructional activities frequently support the development of technological skills.

Imel (1998) emphasizes that like any other instructional tool, technology can be used to perpetuate poor practice in education or it can become a means for transforming learning.

The Strategy and Action Plan for TEL in Academic Preparation is intended promote effective use of technology in programs designed to help adult learners to acquire the knowledge and skills they need to succeed in further studies or to prepare for employment. The courses and programs described or recommended in this document may include technology skills as subject matter, as a delivery mechanism, or as an instructional resource or tool, such as the Internet and web-based interaction. The focus is primarily on enabling and supporting teaching and learning.

A Note About Terminology

Throughout this document the terms "courses" and "learning resources" are used to refer to activities designed to help students prepare for post-secondary studies. In the reference sources cited, related materials and activities are described in various ways for different levels or types of study. To help clarify the terminology, below are the definitions of the terms as they are used in the context of the Strategy and Action Plan for TEL in Academic Preparation.

A *course* is closely tied to a curriculum guide or program of studies. It is designed to teach specific prescribed knowledge and skills. A course is usually divided up into a series of lessons. Each lesson includes material that is intended to teach content and student assignments based on that content. A course usually includes review or self-test exercises. *Biology 30* is an example of a course.

A *learning resource* is supplementary material used by students to enrich, expand on or complement their formal study in a course. For example, when students are assigned a research project they often refer to learning resources. Students also use learning resources to pursue personal interests. An online resource called *The Life of Bugs* is an example of a learning resource. In the K-12 system, learning resources are sometimes called "instructional resources".

Occasionally the distinction between a course and a learning resource is vague. For example, some learning resources are not linked to any specific curriculum guide or program of studies but are still set up like a course with lessons, student assignments and review exercises.

Phase 1
Academic Preparation Learning Needs and Institutional Response
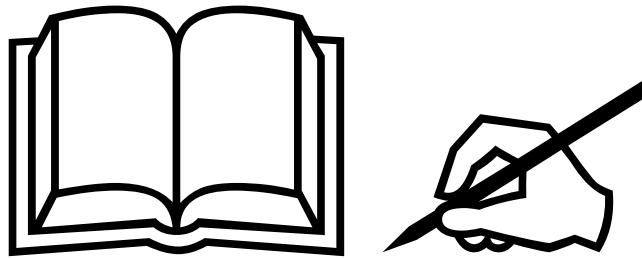
Phase 1 – Academic Preparation Learning Needs and Institutional Response

Phase 1 – Academic Preparation Learning Needs and Institutional Response includes the following five sections:

- Academic Preparation Learning Needs
- Characteristics of Students Needing Academic Preparation
- Institutional Response to Academic Preparation Needs
- Promoting Student Success
- Accessibility Issues in Saskatchewan

Academic Preparation Learning Needs

Within the general category of "academic preparation" there are several different types of learning needs. This diverse range of learning needs is displayed in Figure 1 below. It is important to note that these categories are not distinct. There is overlap among them.

As well, Figure 1 shows only the most common categories of academic preparation learning needs. There may be other learning needs that are not represented in this chart.

Figure 1: Description of Academic Preparation Learning Needs

Learning Needs	Description	Means for meeting need
Basic literacy	Students have limited or no reading, writing and numeracy skills. They want to learn to read, write and understand math well enough to make the transition to the workplace or further education and/or to improve their quality of life.	• Community-based organizations • DTI • Regional Colleges • SIAST • SIIT • Some employers • Some public libraries
Basic education	Students have limited reading, writing and math skills, and may lack personal and social skills. Basic education includes not only the programs and services that lead to academic certification (up to Grade 12), but also non-credit programs that develop skills related to employment and participation in family and community.	• Community-based organizations • DTI • Regional Colleges • SIAST • SIIT

Figure 1: Description of Academic Preparation Learning Needs (Continued)

Learning Needs	Description	Means for meeting need
Preparation for employment	Students want to develop skills for immediate employment. These skills may include basic skills, technical and literacy skills, and personal and social skills. Employment skills may also include intra-personal and interpersonal skills needed for success in the workplace such as following a schedule, interacting with other people and following instructions.	• DTI • Regional Colleges • SIAST • SIIT
Grade 12 completion	Students' goal is to complete Grade 12 and earn high school standing or equivalent. There are several different routes to this goal including standard Grade 12 courses taken at a high school or through the Saskatchewan Government Correspondence School, GED and Adult 12.	• DTI • Saskatchewan Learning (GED) • Regional Colleges • SIAST • SIIT • Saskatchewan Government Correspondence School • Saskatchewan school divisions
Bridging for university, technical education, apprenticeship, trades training	Students want to enter university or technical/vocational programs, but lack expertise, knowledge, skills and/or required courses in areas critical to academic success. This learning need is often addressed through non-credit bridging programs such as various math readiness or writing skills programs.	• Regional Colleges • SIAST • SIFC • U of R • U of S
Courses needed for entry into a specialized post-secondary education program	These students may already have a high school diploma, but they lack one or more high school courses needed for entry in a specialized university, technical, apprenticeship or trades program. For example, a student may want to enter a math, engineering or science program at university or SIAST, but lacks Physics 30, Chemistry 30, Biology 30, Calculus 30 or other prerequisites.	• Regional Colleges • Saskatchewan Government Correspondence School • Saskatchewan school divisions • SIAST
Raising Grade 12 average in order to enter a post-secondary education program	These students have a high school diploma, but their average is too low to qualify for entry into certain university or SIAST technical programs. They are taking some high school courses over again to raise their Grade 12 average.	• Regional Colleges • Saskatchewan Government Correspondence School • Saskatchewan school divisions • SIAST
English as a Second Language (ESL)	ESL students are those whose primary language is other than English. They want to improve their ability to speak, read and write English. They may be immigrants or speakers of an Aboriginal language. They may have strong literacy skills in their first language or they may have limited ability to read and write in any language. Some may have high levels of education in their own language. Some are only temporary visitors who come to Saskatchewan specifically to take ESL courses.	• Community-based organizations • For-profit businesses • Regional Colleges • SIAST • Some employers • Some public libraries • U of R • U of S

Characteristics of Students Needing Academic Preparation

Students requiring academic preparation have different needs and various options for meeting those needs. Academic preparation students range from individuals who cannot read to individuals who need a highly specific Grade 12 course to enter a university or SIAST program. They range in age from teenagers to seniors. Their goals and aspirations may also differ.

The following groups of students are described below:

- Basic Education Students
- General Education Development (GED) Applicants
- Bridging/Transition Students

Basic Education Students

Definition

Basic education students have limited reading, writing and math skills, and have not completed Grade 12. Basic education programs include not only the programs and services that lead to academic certification (up to Grade 12), but also non-credit programs that develop skills related to employment and participation in the family and community.

Funding of Basic Education

Basic Education programs are provided by SIAST, the regional colleges, Dumont Technical Institute (DTI), and Saskatchewan Indian Institute of Technologies (SIIT). The primary way of funding basic education is through a conditional grant provided by the Special Needs Programs Unit of Saskatchewan Learning. The amount of this grant is determined annually through the normal budgeting process. For convenience, the post-secondary education institutions sometimes express the value of this grant as seats per day. For example, if the grant is $1,000 and it costs $150 per day per student, this grant can provide 6.6 daily seats.

Other sources of funding for basic education include:

- **Tuition-paying students** – A small number of students pay tuition themselves or with the help of their families or First Nation community.

- **Canada-Saskatchewan Career and Employment Services (CanSask)** – CanSask provides funding for bridging, career, literacy, and employment programs to respond to particular groups. Most of this funding goes to community-based organizations, but occasionally the post-secondary education institutions will be funded to operate programs for specific groups of individuals.

- **Language Instruction for Newcomers to Canada (LINC)** – The federal government provides funding for ESL training for newcomers to Canada. ESL and basic education are different types of programs for different categories of students, but both are types of academic preparation.

It is important to note that all the funding sources described above cover only direct costs of courses and programs such as instructor salaries and benefits.

Infrastructure costs such as the building where courses are held, the library, the costs of administration, light and heat, etc. are borne by the post-secondary education institution and are covered by the institution's general operating grant.

Some basic education students may be eligible for the Provincial Training Allowance (PTA). This is a grant provided to low-income students enrolled in basic education and bridging programs. It assists with the cost of living. The amount of the Provincial Training Allowance depends on whether the student lives with parents or a spouse or independently, the number of children the student has and other factors. Provincial Training Allowance is paid directly to the student. Students must be attending full-time (20 hours per week or more) to qualify for the PTA and must be registered in a program approved by the provincial government.

Numbers and Characteristics of Basic Education Students

This report draws from several different studies to provide demographic information about basic education students (Basic Education Redesign Task Team, 2002; Frison, 2001; Rural Access Project, 2001; Statistics Canada, 2001).

Figure 2 provides information about the number and location of basic education students in provincially funded programs. This table provides only a partial accounting of basic education students in Saskatchewan. In addition, there are:

- Students who pay the tuition themselves (or it is paid on their behalf by their families or a First Nation);

- Students in programs funded by CanSask;

- Approximately 2,500 students per year enrolled in literacy programs; and

- Several hundred ESL students, some of whom may also be participating in basic education.

Identifying the exact number of basic education students in Saskatchewan is complex for a variety of reasons. For example, the various institutions maintain statistics in different ways. Students may be categorized differently depending on the funding source. There is a debate about whether enrollment should be calculated by counting number of students or number of students/hours. The numbers in Figure 2 are the best that can be obtained at this time.

The numbers in Figure 2 or any other count of basic education enrollment show only the number of students presently enrolled in these programs. They do not, in any way, reflect the demand for basic education. Enrollment is limited by the institutions' capacity to provide programming and by the financial support available for students. Most post-secondary education institutions have long waiting lists for basic education.

In this section, Figures 2 to 6 summarize information provided by SIAST, the regional colleges, DTI, and SIIT about basic education students in Saskatchewan. The information in Figures 2 to 6 applies only to basic education students. It does not apply to literacy or ESL students.

The information about basic education students that appears in Figures 2 to 6 may be summarized as follows:

- The largest proportion (60 percent) of basic education students is female.

- The largest proportion (60 percent) consists of those taking Adult 10 and related programs.

- Basic education students are geographically dispersed. There is a need for basic education in all parts of Saskatchewan.

- Most basic education students are studying to make themselves eligible for further education, to increase their employability or both.

- The greatest proportion (60 percent) of basic education students will finish the course.

Figure 2: Saskatchewan Basic Education Students – By Institution – 1999-2000

Institution	Number of Students	% of Students
Carlton Trail	68	1.5%
Cumberland	129	2.8%
Cypress Hills	157	3.5%
Lakeland	48	1.1%
North West	482	10.6%
Parkland	474	10.5%
Prairie West	64	1.4%
Southeast	147	3.2%
Northlands	644	14.2%
DTI	280	6.2%
SIAST – Kelsey	582	12.8%
SIAST – Palliser	273	6.0%
SIAST – Wascana	588	13.0%
SIAST – Woodland	519	11.4%
SIIT	78	1.7%
Total	**4,533**	**100%**

Source: Saskatchewan Learning, Post-Secondary Education and Skills Training, Programs Branch. *Basic Education Follow-up Survey, 1999-2000 Program Year*.

Figure 3: Saskatchewan Basic Education Students – Characteristics

Gender	Female – 61 % Male – 39%
Ancestry	52% Aboriginal (62% Treaty/Status, 31% Métis, 7% Other)
Marital Status	66% – single, divorced or widowed 34% – married or common-law
Average Age	30.5 years (with a range of 15 to 73 years)
Dependents	45% of students have dependents (with, on average, 2.36 children)
Last Grade Completed	Grade 9 (on average)
Last Attended School	11 ago years on average (with a range of 1 to 20 years)
Programs Attending	Adult 12/GED – 40% Adult 10 and related programs – 60%

Source: Saskatchewan Learning, Post-Secondary Education and Skills Training Database, 1998 and 1999.

Figure 4:   Saskatchewan Basic Education Students – Students' Reasons for Attending Basic Education Programs

□ **Further Education/Training (38%)**
■ **Increased Employability (24%)**
☰ **Personal Satisfaction (20%)**
▨ **Basic Skills (8%)**
Ⅲ **Other (10%)**

Source: KPMG Consulting, 1999.

Figure 5: Saskatchewan Basic Education Students – Completion Rate – 1999-2000

Institution	Number of Students	Total Completed		Not Completed	
Carlton Trail	68	45	66%	23	34%
Cumberland	129	87	67%	42	33%
Cypress Hills	157	100	64%	57	36%
Lakeland	48	39	81%	9	19%
North West	482	293	61%	189	39%
Parkland	474	305	64%	169	36%
Prairie West	64	42	66%	22	34%
Southeast	147	123	84%	24	16%
Northlands	644	447	69%	197	31%
DTI	280	147	53%	133	48%
SIAST – Kelsey	582	321	55%	261	45%
SIAST – Palliser	273	171	63%	102	37%
SIAST – Wascana	588	351	60%	237	40%
SIAST – Woodland	519	266	51%	253	49%
SIIT	78	38	49%	40	51%
Total	**4,533**	**2,775**	**61%**	**1,758**	**39%**

Source: Saskatchewan Learning, Post-Secondary Education and Skills Training, Programs Branch. *Basic Education Follow-up Survey, 1999-2000 Program Year*.

Figure 6: Saskatchewan Basic Education Students – Next Steps for Basic Education Completers – 1999-2000

Institution	Completers Contacted	Employed		Unemployed		Further Training		Homemaker	
Carlton Trail	43	10	23%	6	14%	25	58%	2	5%
Cumberland	78	17	22%	6	8%	46	59%	9	12%
Cypress Hills	94	37	39%	1	1%	51	54%	5	5%
Lakeland	26	12	46%	0	0%	7	27%	7	27%
North West	227	23	10%	33	15%	160	70%	11	5%
Parkland	259	95	37%	14	5%	140	54%	10	4%
Prairie West	41	10	24%	0	0%	27	66%	4	10%
Southeast	123	42	34%	16	13%	65	53%	0	0%
Northlands	357	67	19%	52	15%	162	45%	76	21%
DTI	139	24	17%	7	5%	93	67%	15	11%
SIAST – Kelsey	266	20	8%	9	3%	230	86%	7	3%
SIAST – Palliser	142	11	8%	6	4%	120	85%	5	4%
SIAST – Wascana	291	28	10%	13	4%	240	82%	10	3%
SIAST – Woodland	253	25	10%	10	4%	199	79%	19	8%
SIIT	38	0	0%	0	0%	38	100%	0	0%
Total	**2,377**	**421**	**18%**	**178**	**7%**	**1,603**	**67%**	**180**	**8%**

Source: Saskatchewan Learning, Post-Secondary Education and Skills Training, Programs Branch. *Basic Education Follow-up Survey, 1999-2000 Program Year.*
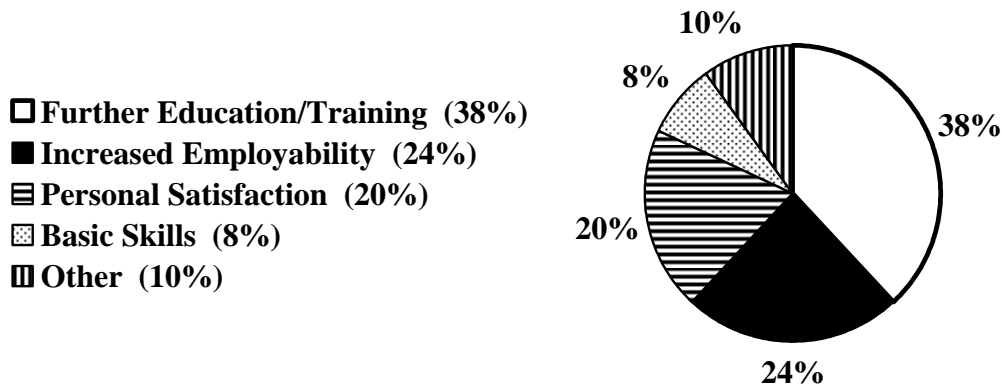
General Education Development (GED) Applicants

The General Education Development (GED) is an international program that tests high school equivalency for adults. The GED is composed of a series of five tests that evaluates participants' skills and knowledge in the following subject areas:

- Language Arts, Reading
- Language Arts, Writing
- Mathematics
- Science
- Social Studies

The GED tests are designed to measure the skills that correspond to those of recent high school graduates.

Figures 7 to 11 that follow provide information about individuals applying to take the GED test in Saskatchewan in 2001.

This information may be summarized as follows:

- Slightly more women than men take the GED test.

- The largest proportion of GED applicants is in the 20 to 39 age group.

- The largest proportion (38.5 percent) of applicants who wrote the GED test had completed Grade 10.

- Slightly more GED applicants focus on employment than on further education.

- The overall success rate of Saskatchewan people writing the GED test is 68 percent. The success rate is slightly higher for teenagers and middle-aged people and slightly lower for people in the 20-39 age group.

Figure 7: GED Applicants Tested – 2001 – Gender

Gender	Number of Applicants	% of Applicants
Female	1,426	52.7
Male	1,280	47.3
Total	**2,706**	**100%**

Source:　Saskatchewan Learning, GED Testing and GED Records.

Note:　Percentages may not total exactly 100% due to rounding.

Figure 8: GED Applicants Tested – 2001 – Age of Applicants

Age	Number of Applicants	% of Applicants
16 – 19	183	6.8
20 – 24	692	25.6
25 – 29	420	15.5
30 – 34	361	13.3
35 – 39	408	15.1
40 – 44	293	10.8
45 – 49	177	6.5
50 – 54	85	3.1
55– 59	37	1.4
60+	46	1.7
Unknown	4	.1
Total	**2,706**	**100%**

Source: Saskatchewan Learning, GED Testing and GED Records.

Note: Percentages may not total exactly 100% due to rounding.

Figure 9: GED Applicants Tested in 2001 – Highest Grade Completed

Highest Grade Completed	Number of Applicants	% of Applicants
6 or below	144	5.3
7	57	2.1
8	237	8.8
9	573	21.2
10	1,042	38.5
11	569	21.0
12	82	3.0
Unknown	2	.1
Total	**2,706**	**100%**

Source: Saskatchewan Learning, GED Testing and GED Records.

Note: Percentages may not total exactly 100% due to rounding.

Figure 10: GED Applicants Tested in 2001 – Reasons for Testing

Reason	Number of Applicants	% of Applicants
To qualify for further education	1,151	42.5
To qualify for employment	1,317	48.7
Unknown	238	8.8
Total	**2,706**	**100%**

Source: Saskatchewan Learning, GED Testing and GED Records.

Note: Percentages may not total exactly 100% due to rounding.

Figure 11: GED Applicants Success Rate by Age – 2001

Age	Number of Applicants	Number Who Received the GED Credential	Success Rate
16 – 19	183	130	71%
20 – 24	692	459	66%
25 – 29	420	283	67%
30 – 34	361	228	63%
35 – 39	408	280	69%
40 – 44	293	215	73%
45 – 49	177	127	72%
50 – 54	85	65	77%
55 – 59	37	28	76%
60+	46	21	46%
Unknown	4	3	75%
Total	**2,706**	**1,839**	**68%**

Source: Saskatchewan Learning, GED Testing and GED Records.

Note: Percentages may not total exactly 100% due to rounding.

Bridging/Transition Students

The description below provides statistical information about students in two types of bridging/transition programs: students in the University of Regina and SIFC Entrance Program, and students in University of Saskatchewan Math Bridging Programs.

The students enumerated, the description, and the tables that follow represent only part of the total number of bridging/transition students in Saskatchewan. The regional colleges, SIAST, SIFC, SIIT and DTI all provide bridging programs of various types. Because statistics about the students in some of these other programs are not readily available, these students are not described here.

Students in University of Regina and SIFC Entrance Program

Figure 12 provides information about University of Regina and SIFC students in the Entrance Program.

This table may be summarized as follows:

- Among University of Regina students, the number of females and males is approximately equal. Among SIFC students there are almost twice as many females as males.

- University of Regina students tend to be younger than SIFC students.

Figure 12: University of Regina and SIFC, Entrance Program Students, January to April 2001 and September to December 2001 Semesters Combined

Age	University of Regina			SIFC		
	Males	Females	Total	Males	Females	Total
19/20	1	0	1	0	1	1
21-25	187	132	319	55	96	151
26-30	96	97	193	63	141	204
31-35	45	50	95	48	84	132
36-40	28	58	86	32	63	95
41-45	23	31	54	22	43	65
46-50	7	31	38	15	32	47
51-55	8	6	14	6	19	25
56-60	2	2	4	5	9	14
> 60	0	0	0	0	1	1
Total	**397**	**407**	**804**	**246**	**489**	**735**

Source: University of Regina, Entrance Program.

Note: These students may be enrolled in courses anywhere in the province. A large number of the students enrolled in courses in the January to April semester will have been transferred to their faculty of choice by the September to December semester. A large number of students start their academic career in the fall and are ready for transfer after the January to April semester.

Students in University of Saskatchewan, Math Readiness and Math Foundations Programs

The University of Saskatchewan offers two courses for students who need to enhance their mathematics skills. Numbers of students in these courses are listed below.

- **Math Readiness Course** – A non-credit math review covering math topics used in university sciences, engineering and commerce programs. Approximately **150 students per year** participate in this program.

- **Math Foundations Course –** A non-credit math course for students who have never learned math skills or have been away from math for many years. There are about **50 students per year** in this course. However, it is a new course and numbers may increase in the years ahead.

Institutional Response to Academic Preparation Needs

Most of Saskatchewan's post-secondary education institutions have developed programs and services in response to one or more adult academic preparation learning needs. The K-12 system offers a limited range of responses as well. These responses are displayed in Figure 13.

Figure 13: Institutional Response to Academic Preparation Learning Needs

Institution	Response	Learning Needs Met *
Saskatchewan Government Correspondence School (a unit within the Curriculum and Instruction Branch of Saskatchewan Learning)	The Correspondence School offers Grade 9, 10, 11 and 12 courses. Students may complete a full high school program through this school. Adult students (16 years of age or older who are not registered with a school, school division or Indian band) can also study with the school for a fee. Two categories of participation are available: • full service – students submit their completed lessons to teachers at the Correspondence School and receive instruction, feedback and evaluation from the school • reference service – students purchase Correspondence School lesson materials and use them under the guidance of a local teacher or for self-study	• Grade 12 completion • Bridging for university, technical education, apprenticeship, trades training • Courses needed for specialized post-secondary education programs • Raising Grade 12 average
Saskatchewan School Divisions	*The Education Act* (1996) (Clause 142[1]) says that individuals who have not yet attained the age of 22 years have the right to attend school at the cost of the school division. Some students who have been out of school for a while, but are under the age of 22, go back to a public high school.	• Grade 12 completion • Bridging for university, technical education, apprenticeship, trades training • Courses needed for specialized post-secondary education programs • Raising Grade 12 average
Saskatchewan Learning	GED (General Education Development) – The GED Program is administered by Saskatchewan Learning. It measures knowledge and skills gained through life experience, reading and informal training.	• Equivalent of Grade 12 completion

* Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Figure 13: Institutional Response to Academic Preparation Learning Needs (Continued)

Institution	Response	Learning Needs Met *
SIAST (Saskatchewan Institute of Applied Science and Technology)	**SIAST** offers the following Basic Education programs: • Adult 10 • Adult 12 • GED preparation program • GED testing • Variety of employment readiness/bridging to employment programs • English language training • Basic literacy • Program for the deaf and hard of hearing • Transition to post-secondary education • Evening Adult 12 part-time high school credit **Virtual Campus** • BE Math Bridging – Phase 1 • BE Math Bridging – Phase 2 • BE Pre-Apprenticeship/Trade Applied Mathematics **Multi-Media Resources** • Academic Preparation for Science • Numeracy 1 • Numeracy 2	• Courses needed for entry into a specialized post-secondary education program • Grade 12 completion • Basic education • Preparation for employment • English as a Second Language • Basic literacy • Bridging for university, technical education, apprenticeship, trades training
Dumont Technical Institute (DTI) (the adult upgrading and technical training arm of Gabriel Dumont Institute of Métis Studies and Applied Research)	DTI offers the following academic preparation programs: • Adult 10 • Adult 12 • GED preparation • GED testing DTI offers courses in several locations in northern Saskatchewan and a few locations in the south. Thus students do not have to go far away from home to continue their education.	• Basic literacy • Basic education • Grade 12 completion • Preparation for employment

* Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Figure 13: Institutional Response to Academic Preparation Learning Needs (Continued)

Institution	Response	Learning Needs Met *

University of Regina	University of Regina offers:
	
	• Entrance Program – Students who do not meet regular admission requirements and are at least 21 years old may be admitted to the EP. EP students can take regular university classes.
	
	• First-year Services Program – This program offers two courses designed to promote academic success and retention:
	
	  ▪ UNIV-100 – Introduction to University
	  ▪ UNIV-110 – Writing for Academic Success
	
	The First-Year Services Program also offers three mathematics courses. Some students may qualify for the Faculty of Arts, but actually have a goal to achieve an Education or Administration degree. However, they lack the mathematics required for their faculty of choice. These students can take:
	
	  ▪ AMTH-001 – Mathematics 1 – Introduction to Algebra
	  ▪ AMTH-002 – Mathematics II – Continuation of Mathematics I
	  ▪ AMTH-003 – Mathematics III – Geometry and Trigonometry
	
	These courses do not replace Mathematics A30, B30 or C30 but meet the mathematics requirements at the U of R. Students can complete some or all of these mathematics courses while continuing with other university courses that are part of their degree.
	
	English as a Second Language – The ESL Centre at the U of R's Language Institute offers a range of full-term, short and custom-designed ESL programs. Programs are primarily for academic purposes.
		• Bridging for university
		
		• English as a Second Language

* Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Figure 13: Institutional Response to Academic Preparation Learning Needs (Continued)

Institution	Response	Learning Needs Met *
Saskatchewan Indian Federated College (SIFC)	SIFC students enroll at the University of Regina and are eligible to participate in the Entrance and First-year Services Programs offered by the University of Regina. SIFC also offers the Northern Health Sciences Access Program. This one-year program is designed to help students develop the skills and academic prerequisites needed for entry into a variety of health programs offered by SIFC, SIAST and U of S. After the access year, students are still required to meet the current entrance requirements for each health program.	• Bridging for university, technical education, apprenticeship, trades training
Saskatchewan Indian Institute of Technologies (SIIT)	SIIT offers the following in several small and large centres throughout Saskatchewan: • Literacy programming • Adult 10 and Adult 12 program • Post-secondary preparation programs	• Basic literacy • Basic education • Preparation for employment • Grade 12 completion • Bridging for university, technical education, apprenticeship, trades training
Regional Colleges (nine regional colleges)	Specific program details may vary slightly, but in general the regional colleges offer: • Academic Programs – Programs to help individuals gain the academic prerequisites for further training. These include: 　▪ Adult 10 　▪ Adult 12 　▪ GED preparation 　▪ GED testing • Employment readiness/bridging to employment programs – Several programs that help individuals develop job readiness skills as required by the labour market • English language training – Programs for people whose first language is not English • Literacy programs – Programs that help adults improve their academic skills for entrance into further education or employment, or to improve their quality of life	• Bridging for university, technical education, apprenticeship, trades training • Raising Grade 12 average • Grade 12 completion • Basic education • Preparation for employment • English as a Second Language • Basic literacy • Courses needed for entry into a specialized post-secondary education program

* Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Figure 13: Institutional Response to Academic Preparation Learning Needs (Continued)

Institution	Response	Learning Needs Met *
Saskatchewan's Public Libraries	Some of Saskatchewan's public libraries offer literacy programs, typically through volunteer literacy tutors trained by the library. Tutors are paired with adults who want to upgrade their literacy skills. Two kinds of programs may be offered: • Literacy for ESL students – who may or may not have a high degree of literacy in their first language • Basic literacy – for students whose first language is English, who have limited ability to read or write.	• English as a Second Language • Basic literacy
University of Saskatchewan	The University of Saskatchewan offers: • Provisions for academic deficiencies – Applicants who are deficient in a needed Grade 12 subject but whose average in the remaining subjects is sufficiently high, may clear the deficiency during their first year of university. In most cases, this means taking a Grade 12 course through the Correspondence School or at a regular high school. • Special (Mature) Admission – Available to students who do not qualify for regular admission and are at least 21 years old. • Open admission – Available to students who lack the academic requirements for regular admission and are not eligible for Special (Mature) Admission. • Math Readiness Course – A non-credit math review covering math topics used in university sciences, engineering and commerce programs. • Math Foundations Course – A non-credit math course for students who have never learned basic math skills or have been away from math for many years. • English as a Second Language – The U of S Centre for Second Language Instruction offers a variety of programs for students whose first language is not English. Programs are primarily for academic purposes.	• Bridging for university • English as a Second Language

• Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Figure 13: Institutional Response to Academic Preparation Learning Needs (Continued)

Institution	Response	Learning Needs Met *
Community-based Organizations	Most community-based organizations provide a narrow range of programming for specific categories of students, rather than broad-based programming. Some examples of community-based organizations are: • Regina Open Door – ESL for newcomers to Canada. • Circle Project (Regina) – literacy and basic education. Community-based organizations get most of their funding from provincial and federal governments. Some also do community and corporate fundraising.	• Basic literacy • Basic education • English as a Second Language

• Refer to Figure 1 on pages 11 and 12 for more information about learning needs.

Promoting Student Success

Courses and programs can enable adult learners to prepare for further studies and promote success by:

- Recognizing the characteristics of adult learners;
- Implementing practices that help adult learners persist; and
- Removing barriers faced by adult learners.

Each of these aspects of promoting success is discussed in the sections that follow.

Recognizing the Characteristics of Adult Learners

Most adult learners exhibit similar characteristics regarding learning patterns. Courses and programs for adult learners will be most effective if they take these characteristics into account.

Many different researchers have described the characteristics of adult learners (Imel, 1994; Imel, 1998; Some Characteristics of Learners…, 2000). The list presented by Stilborne and Williams (1996) is typical and is summarized below:

- **Adults must want to learn** – Adults learn most effectively when they have an inner motivation to develop a new skill or gain new knowledge. They resist learning material if it is forced on them, or if the only reason given is that the material will be "good for them to know". Adults need to know why they are being asked to learn something and what the benefits will be before they begin learning.

- **Adults will learn only what they feel they need to learn** – In the work world, adults are expected to evaluate the relative importance of information, to exercise personal judgement in setting priorities and allocating their time. This basic orientation of personal responsibility is also how adults approach the world of learning. Adults must feel that the material they are learning is relevant, and that it will have an immediate effect. They want to see how the objectives of the learning relate to real life situations.

- **Adults learn by comparing past experience with new experience** – Every adult learner has a lifetime collection of previous knowledge and experience. When learning something new, most adults need to see how it fits in with (or is different from) what they already know.

- **Adults need immediate feedback about their progress** – Adults want to know how they are doing all along the way. They are not content to continue plugging away at course material without knowing whether they are on the right track. Two kinds of feedback are useful: recognition for work well done, and guidance when improvement is needed.

- **Adults want learning to be practical** – Adults are willing to learn theories, but only if they can see how those theories apply in real life. Adult interest increases substantially when training is built around a clearly defined challenge or demand, rather than hypothetical problems and solutions.

- **Adults try to avoid failure** – Adults are much less open to the trial-and-error approach than children are. Many adult learners will resist trying something new if it involves the risk of making an error and feeling foolish. This is especially true if the person has had problems with learning in the past, or difficulties with the subject area being covered.

- **Adults do not all learn the same way** – By the time people become adults, they have settled into a learning style that has worked well for them in the past. One person may prefer reading, while another does best by trying out a practical exercise, for example.

Implementing Practices that Help Adult Learners Persist

Retention of adult students holds the attention of educators in every type of program. Although the reasons students leave and the strategies for keeping them may differ from adult basic education to higher education, the goal of retention is the same: to help students continue in programs until they achieve their goals (Kerka, 1995).

Kerka (1995) summarizes research on educational practices to improve retention of adult learners.

Practices That Help Adult Basic Education Students Persist

- Comprehensive strategies targeted for specific sub-populations;
- Curriculum based on learner culture;
- Material that is challenging for adults;
- Opportunities to succeed at something in every class meeting, including the first, no matter how small or simple; and
- Alternative arenas for success that enable students to display competence in other areas (e.g. meals prepared by students; peer tutors in English as a Second Language classes).

Practices That Help Higher Education Students Persist

- Pre-enrollment counselling to establish expectations and give a sense of the academic community;
- Personal attention from staff willing to listen and assistance with personal and financial problems;
- Managing the culture of the institution and recognizing adult anxiety about school; and
- Flexible, convenient scheduling and frequent contact with faculty (including electronic methods).

Practices That Help Adult Basic Education and Higher Education Students Persist

- High quality instruction;
- Student support systems; and
- Flexible structures to help motivate and sustain student commitment.

Removing Barriers Faced by Adult Learners

Numerous studies have discussed the barriers that academic preparation students face. These barriers are summarized below.

- **Academic Barriers** – low literacy levels; lack of study skills; gaps in learning; negative memories of earlier educational experiences; lack of technical skills; inability to handle demands of high school; lack of information about education programs available; little or no work experience; limited proficiency in English; incomplete or inadequate assessment of needs upon entering a program.

- **Personal Barriers** – lack of self-confidence; illness of self or family; child/family responsibilities; financial difficulties; abusive family situation; unresolved personal issues; learning disabilities.

- **Situational Barriers** – lack of community/family support; poor roads; unreliable vehicles; no transportation; lack of adequate study area; lack of computers; little or no access to childcare; lack of time (Frison, 2001; Rural Access Project, 2001; Statistics Canada, 2001).

Anything that education institutions can do to remove or reduce these barriers will promote student success. For example, education institutions can provide information about support services such as childcare, transportation and health care. They can also provide information about academic supports available such as tutorials, writing clinics and the like (Wonacott, 2001).

Accessibility Issues in Saskatchewan

Practices that promote student success and barriers to learning are described in general terms in the previous section. In addition, there are some issues of accessibility that have particular relevance to Saskatchewan. These include:

- Academic preparation students represent a continuum ranging from those who require basic literacy to those who need high-level math skills. Although basic education students make up a large proportion of students needing academic preparation, there are many other types of needs as well.

- Academic preparation students come from a variety of situations and circumstances. Many are older, have a low income, have children, and many also have work responsibilities. This is particularly true of basic education students and those in the Entrance Program at the University of Regina.

- Most post-secondary education institutions have a limited number of seats in basic education, bridging and transition programs and long waiting lists to fill those seats. Access is limited by institutional capacity and by funding available to students.

- Low-income people who wish to participate full-time in basic education may be eligible for the Provincial Training Allowance (PTA) which assists with living expenses. To be eligible for PTA, students must be registered in a program that has been approved by the provincial government and be taking at least 20 hours of classes per week. However, there is no financial support for people in other circumstances. For example:

  - Individuals who are working full- or part-time in a low-paying job and want to take one or two basic education courses usually are not eligible for Provincial Training Allowance, but can not afford to pay for the courses themselves.

  - A mother with young children who is on Social Assistance may want to take only one or two courses at a time in order to have time for her children, but faces the same problem. She is not eligible for Provincial Training Allowance, but cannot afford to pay for courses herself.

- Funding is also an issue for some people who want to take courses through the Saskatchewan Government Correspondence School. Individuals who are over 16 and not registered with a school, school division or First Nation have to pay for the courses themselves. Potential students who are employed at low-paying jobs or on Social Assistance cannot afford the tuition.

- Some academic preparation courses are offered only during the day. A person who is working full- or part-time may be at work when courses are offered. If courses are not available evenings and weekends, the potential student is not able to participate regardless of the funding available or his or her ability to pay.

- Some individuals who could benefit from academic preparation live on farms, in small towns or isolated communities. There may be family or financial restrictions that make moving to a larger centre very difficult. Sometimes programming has to go to the student, not vice-versa.

- Students may face various intra-personal barriers to learning. For example, they may have learning disabilities or dyslexia. Some students may have had negative experiences in the past and may believe they cannot learn. Also, most education programs are organized in a linear fashion and rely heavily on visual and auditory learning. Students who have a different learning style may fare poorly with a conventional program. Adult preparation courses and programs need to have enough flexibility to accommodate a wide variety of personal learning styles and situations.

- Many academic preparation students, particularly basic education students, need support from an instructor and contact with other students in order to succeed. Isolated, individualistic study is not for them; group learning and group interaction is far more effective. This is partly a matter of learning style and partly a need for support and encouragement. Courses and programs, whether face-to-face or online, need to provide for group work and group interaction.

Phase 2
Assessment of Existing TEL Resources
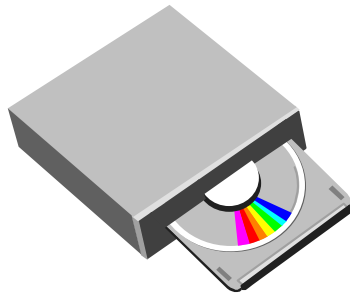
Phase 2 – Assessment of Existing TEL Resources

Phase 2 provides an assessment of existing TEL resources. It is organized into four sections:

- Description of Saskatchewan TEL Resources
- Description of Other Canadian TEL Resources
- Description of GED Preparation Resources Online
- Overview of Existing TEL Resources

The sections that follow on Saskatchewan and Canadian TEL resources consider only resources available from education institutions and government sources. In addition, hundreds of computer software packages and CD-ROMs, which may be suitable for academic preparation students, are available from commercial publishers. No attempt has been made to identify these many commercial products. Some American schools, community colleges and for-profit firms offer online high school courses or college preparation courses. No attempt has been made to identify these American resources.

In the last section on GED preparation online, American as well as Canadian resources are listed, because the majority of resources in this area come from the U.S. Online GED preparation courses from for-profit companies are listed as well as courses from education institutions.

Description of Saskatchewan TEL Resources

This section on Saskatchewan TEL resources has been organized into three components:

- Saskatchewan Adult Academic Preparation TEL Resources
- Saskatchewan K-12 TEL Resources
- Summary of Saskatchewan TEL Resources

Saskatchewan Adult Academic Preparation TEL Resources

This section describes TEL courses, programs and initiatives developed by the following institutions, groups and consortia:

- Dumont Technical Institute
- North West Regional College
- Saskatchewan Indian Federated College
- Saskatchewan Institute of Applied Science and Technology (SIAST)
- Saskatchewan Regional Colleges and SIAST Consortium
- Saskatchewan's Regional Colleges
- University of Regina
- University of Saskatchewan
- University of Saskatchewan, University of Regina and SIAST Libraries

Dumont Technical Institute

http://www.gdin.org/DTI.htm

Dumont Technical Institute
Upper Level, 917 – 22nd Street West
Saskatoon, SK   S7M 0R9
Tel: (306) 242-6070   Fax: (306) 242-8002

Métis Studies – Adult Basic Education 5-10 – This course presently exists in paper format, but is being adapted and enhanced for online delivery. It is available to all basic education students in Saskatchewan, not just those at DTI. Curriculum development is scheduled for completion in October 2002. The course is expected to be online by April 2003.

North West Regional College (on behalf of all post-secondary institutions)

http://www.nwrc.sk.ca

North West Regional College
10702 Diefenbaker Drive
North Battleford, SK   S9A 4A8
Tel: (306) 937-5100   Fax: (306) 445-1575   General E-mail: inquiry@nwrc.sk.ca

Adult 12 Math A30 Online – A Math A30 online course intended specifically for Adult 12 students is being developed by North West Regional College in partnership with other post-secondary education institutions. Course development will begin with a survey of existing online Math A30 content to determine its suitability for the adult learner. Once completed, the course will be stored on NWRC's Web site for use by any provincial institution hosting additional course offerings. Estimated timelines are:

- Completion of curriculum development – December 2002
- Pilots – June 2003
- Completion of course – October 2003

Saskatchewan Indian Federated College

http://www.sifc.edu   General E-mail: info@sifc.edu

Regina
Saskatchewan Indian Federated College, Regina Campus
College West 188
University of Regina
Regina, SK   S4S 0A2
Tel: (306) 546-8400

Saskatoon
Saskatchewan Indian Federated College, Saskatoon Campus,
710 Duke Street
Saskatoon, SK   S7N 0P8
Tel: (306) 931-1800

Northern Campus
Saskatchewan Indian Federated College, Northern Campus,
P. O. Box 3003
1500 – 10th Avenue East
Prince Albert, SK   S6V 6G1
Tel: (306) 763-0066

- **Math Readiness for Aboriginal Students** – An interactive multimedia CD-ROM to help First Nations students improve their skills in basic mathematics, in preparation for post-secondary studies. The CD provides lessons and exercises within an Aboriginal cultural context. Examples are drawn from everyday life, using visual cues to help students "see" and "think" mathematics.

- **English Readiness** – Uses an interactive Web site to help adult students improve their basic reading and writing skills in preparation for post-secondary education. A print package supplements the material available online. The program is designed to be individualized and interactive, within an Aboriginal cultural context.

Saskatchewan Institute of Applied Science and Technology (SIAST)

SIAST Virtual Campus **http://www.siast.sk.ca/virtualcampus/**	SIAST Woodland Campus 1100 – 15th Street East, P. O. Box 3003 Prince Albert, SK S6V 6G1 E-mail: bremner@siast.sk.ca

Preparatory and Bridging Programs – Online courses to increase access and enhance training for learners needing to acquire the skills and knowledge necessary for success in further education and prepare for a labour market with increased skill levels. The focus is on math and sciences preparation and culturally sensitive content that responds to the needs of learners in rural and northern Saskatchewan.

- **BE Math Bridging, Phase 1 –** Level I of a skill development and enrichment course to help prepare for Math A30 and assess their potential for continued math studies.
- **BE Math Bridging, Phase 2 –** Level II of math skill development and enrichment in preparation for Math A30. This course focuses on simplifying exponents and polynomials, and solving rational expressions and equations.
- **BE Pre-Apprenticeship/Trade Applied Mathematics, Phase 1** – a pre-entry web-based course designed to help learners prepare for apprenticeship and trade programs. It is focused on specific applications for motive power trades, and full- or part-time study.

Other TEL Initiatives

- **Academic Preparation for Science (APS)** – A multi-mode program designed to help prepare adult students for success in Grade 12 sciences and further academic science training. APS was designed with an Aboriginal focus and Canadian content. The package consists of a CD-ROM, print materials for students and instructors, and a supporting Web site.
- **Numeracy I** – An interactive CD-ROM that introduces basic numeracy skills.
- **Numeracy II** – An interactive multimedia CD-ROM that enables students to improve their numeracy skills in preparation for math study during advanced basic education and work-based training. Aboriginal content and examples are used throughout. Content of the CD is:
  - Part 1 – understanding, manipulating and comparing fractions.
  - Part 2 – addition, subtraction, multiplication and division and word problems.
  - Part 3 – using fractions to teach ratio, proportion, scale, probability and measurement.

  Tutorials, drills, practice and testing help students learn these numerical concepts and apply them to real-life situations.

Saskatchewan Regional Colleges and SIAST Joint Project

- **TEL Preparation Course** – This resource is in the development stage. It will help prepare students for learning with technology. All students who plan to take a technology-based course would first participate in the TEL Preparation Course. This resource will include a series of assessment tools to help students determine their level of expertise in using computers as tools for learning.

If students have adequate knowledge and skills, they would move directly to TEL programs. If they need more computer skills they would take this course. The primary audience for this resource is the basic education student, but it could be useful for other types of students as well. It is scheduled for completion in June 2003. At present, activity focuses on involving the universities and Aboriginal institutions in this project in addition to the regional colleges and SIAST.

Saskatchewan's Regional Colleges (on behalf of post-secondary institutions)

- **Mathematical Assessment Database** – This project is in the development stage. Saskatchewan's regional colleges have initiated the idea. It is likely that the universities and SIAST will also participate in the project. The goal of the project is to develop a framework for a Math Assessment Content Retrieval system. The framework will provide a blueprint for building an online database that will be shared by professionals throughout Saskatchewan. Content provided by these professionals will be applicable to skill levels ranging from ABE Math 10 to first year university. The partners will use this database to facilitate online assessment (self-assessment, program entrance, placement and/or existing assessment tools, etc.). It will also be a supplemental program resource for students, tutors and educators. Issues related to housing and maintaining the database will be resolved as it is being developed.

University of Regina

- **Math Central**

  http://mathcentral.uregina.ca

  Math Central
  c/o Department of Mathematics and Statistics

  University of Regina, Regina, SK   S4S 0A2

  General E-mail: The Centralizer@MathCentral.uregina.ca

  Math Central was designed as a resource for K-12 mathematics teachers. It has two main components:

  - The Resource Room contains resources, teaching ideas, lesson plans, etc. submitted by Saskatchewan teachers. It can be searched by keyword or browsed by elementary, middle or secondary level.

  - The Quandaries and Queries area provides a database of answers to common mathematics questions. Users can also submit new questions that will be answered by mathematicians.

- **AMTH 002 –** Three mathematics courses (AMTH-001, 002 and 003) are offered by First-Year Services at the University of Regina for students who do not meet the course requirements in mathematics. Since 1994, these courses have been delivered using a mastery approach with the assistance of computer-managed learning. A database of test problems has been compiled. Presently AMTH 002 is being redeveloped for delivery in an online format.

- **Web-Based Computer Literacy Repository** – Provides a variety of learning resources on a Web site for use in courses or programs that require basic computer literacy. The resources cover topics such as how to buy a computer, the history of computers, the use of computers in various professions, the nature of the Internet, and computer security and ethics. Visitors to the site learn how to use a computer by using the Web site and a variety of computer-based resources. The materials cover basic skills and knowledge for students enrolled in introductory computer science courses.

- **Training of Trainers: Supporting Learners Through First Class Software** – Integrates with the Common Platform: Computer Mediated Communication and File Transfer Program developed by the U of S. This is a workshop designed to train instructors and administrators to support students enrolled in courses using First Class computer conferencing software.

  - **Web-Based Introductory Computer Science Resources**
    http://tdi.uregina.ca/~flash/cs100/index.html – Provides Web-based learning resources to support face-to-face instruction in Computer Science 100: Introduction to Computers.

University of Saskatchewan

The University of Saskatchewan offers two courses for students who need to upgrade their math skills for further university studies in engineering and the sciences – Math Readiness and Math Foundations. These courses are offered in face-to-face format and also in online versions.

- **Math Readiness Course (MRC)** – A non-credit math review covering math topics used in university sciences, engineering and commerce programs. It emphasizes concepts important for understanding calculus at the university level. The course reviews algebraic skills, functions, graphing, trigonometric functions, and exponential and logarithmic functions. Students learn how to analyze problems and how to use different approaches to problems. In addition to developing specific skills, such as solving exponential equations, students focus on general abilities such as understanding mathematical writing and expressing ideas in mathematical notation.

  Students can check their progress on the quizzes at the Web site and leave messages for one another or the MRC staff at the site bulletin board. This online course is operational at the present time.

- **Math Foundations Course (MFC)** – A non-credit course for students who have never learned math skills or have been away from math for many years. It establishes foundational skills in arithmetic, geometry and elementary algebra. The interactive Web site enables students and the instructor to work with materials and to communicate with each other. Quizzes help students and instructors continuously gauge understanding and progress. This online course is operational at the present time.

- **Enhancing and Connecting MRC and MFC** – This project is under development. When completed it will have three outcomes:
  - Revision of the Math Readiness Course – Tutorials for the course will be revised and the textbook will be converted to electronic form.
  - Formal Trial of the Math Foundations Course – A trial will help to determine revisions needed.
  - Math Foundations Course, Phase II – A bridge between Math Foundations and Math Readiness.

- **Common Platform: Computer-Mediated Communication and File Transfer** – A cooperative effort among the U of R, U of S and SIAST to implement a common technical vehicle for courses using computer-mediated communication. The project provides access to the First Class server and client software, as well as instructional guides that have been developed, pilot-tested and evaluated for instructors, students and technical support staff. The common platform helps the institution expand their online instructional capacity by ensuring system-wide compatibility.

- **Virtual Writing Centre** – This program is currently under development. It is intended to improve the writing skills of post-secondary students and others. The first phase will focus on grammar and sentence structure. It will provide content, exercises, tests and discussion/feedback on the subject of basic grammar in a web-based environment. Completion date for phase 1 is March 2002.

- **IT Ready Program –** IT Ready is designed to help students acquire technological skills at three stages of their academic career:
  - IT Ready I: Core IT skills for university
  - IT Ready II: Discipline-specific IT skills and tools for the upper year/graduate student
  - IT Ready III: Advanced IT skills for the modern workforce

  Each stage includes several modules on various topics. All modules are voluntary and non-credit.

- Student technology assistants are a key feature of the IT Ready Program. Students in the program who have an aptitude for and interest in IT are being given extra training. Then they work with other students and with faculty who want assistance incorporating IT into their courses.

University of Saskatchewan, University of Regina and SIAST Libraries

- **Information Literacy Program –** This resource is currently in the planning stages. When completed it will deliver information literacy instruction in an online environment. It will be developed in modular format.

  The learner goals for Module One will be:

  - to locate and use electronic full-text content with confidence; and

  - to develop critical thinking skills in order to evaluate the quality of the content found in the electronic environment.

  Other modules have yet to be defined. The target audience is students at the U of R, U of S and SIAST. The project is to be completed in spring of 2004.

Saskatchewan K-12 TEL Resources

The Saskatchewan TEL resources described in this section were developed for use in the K-12 system. It would be necessary to examine each of these resources individually to determine whether they are appropriate for adult academic preparation students or could easily be adapted for this group of students. In addition, none of the resources have been evaluated in terms of quality. Detailed review of each one would be needed to determine if individual resources are of excellent, average or poor quality.

TEL courses, programs and initiatives developed by the following institutions are described below:

- Central iSchool
- Saskatchewan Government Correspondence School
- Saskatoon Catholic Cyber School

Central iSchool

http://www.centralischoool.ca/

Learning Technology Unit
1500 – 4th Avenue
Regina, SK   S4P 3V7

Tel: (306) 787-0862
Fax: (306) 787-6054

Central iSchool is a branch of the Learning Technologies Unit of Saskatchewan Learning. All materials stored in the Central iSchool database have been developed by Saskatchewan teachers. Teachers are invited annually to submit proposals for development of Web-based resources to the Central iSchool. A committee of educators selects those proposals that have merit and will receive funding. All of the resources that have been completed are online and can be accessed by the public. Teachers who are developing resources work independently, and thus there is wide variety in course design and visual appearance and the commands used to maneuver the course.

All of the Web-based resources are online and available for use by students and teachers. Sue Amundrud, Director of the Central iSchool, comments on material developed so far:

All of our Web-based materials are available for use. We don't tend to think of them as "courses" per se, but as resources that could support delivery of a course online. We encourage teachers to use them wherever they seem appropriate. We would recommend that the teacher use his/her own good professional judgement as to which pieces would best support achievement of a given curricular objective – some are definitely better than others, and we have not done a complete curriculum "fit" evaluation on them yet. That is a future plan – to "chunk" the material and hook it to specific curriculum objectives, activities, etc. as appropriate. At this point, we consider these resources to be like the binder that the experienced teacher down the hall shares with the novice teacher or even with colleagues looking for new ideas and approaches.

The Web page that has the completed resources has a button at the bottom for downloading a copy of a project – teachers may wish to have the material on their own server, rather than fighting Internet connections. That way, as well, they can make revisions they might deem appropriate.

Additional projects that are under development this year will be posted on the Central iSchool site as soon as they have gone through at least technical screening.

To sum up : we consider these to be resources, for the use of all teachers in assisting students in meeting the objectives of a curriculum – whether online or not.

Web-Based Resources – 2001-02

This list represents the courses and resources available in 2001-02.

Resources for Classes

- Accounting 10
- Accounting 20
- Biology 20
- Biology 30
- Career Education and Guidance
- Career Work Experience Exploration (French)
- Chemistry 20 in English
- Core French 10, 20, 30 (Cypress Hills Incident)
- Creative Writing 20
- Drafting 10
- Drafting 20
- Grade 9 Soil Science
- History 10 Unit
- K-5 Physical Education
- Learning Modules for ELA Grades 4-9
- Learning Modules for Health Grades 4-9
- Learning Modules for Science Grades 4-9
- Life Transitions 20 in French
- Math in the Real World
- Math 20
- Math A30
- Media Studies 20
- Native Studies Grades 4-9 online materials and support
- Practical and Applied Arts – Survey Course
- Science for French immersion – STSE Grades 1-5
- Visual Arts 10, 20, 30

Resources for Teachers' Professional Development

- Adaptive Dimension Handbook
- Alternative Education
- Computer and Network Maintenance Online
- Cree Language Family Life Unit
- Driver Education
- Integrating Technology in the Curriculum and Using Multitype Library
- Online Professional Development Support Materials
- Online Professional Development Materials for Catholic Teachers
- Online Readiness for Teachers for Use of Digital Resources
- Online Resources Related to Integration of Computer Technology in Grades 1-4
- Technology Mentorship
- Test Bank Management System
- Several units at various levels to integrate use of technology in instruction

Central iSchool (Continued)

Web-Based Resources – 2002-03

The courses are currently in the pilot stage and will be available, when completed, from the school divisions that are developing them.

- Accounting 10
- Accounting 20
- Arts Education 20
- Biology 20
- Biology 30
- Career and Work Experience
- Communication Production Technology 20
- Creative Writing 20
- Drafting 10
- Drafting 20
- English Language Arts B30
- History 20
- Math 9
- Math A30
- Math B30
- Math C30
- Media Studies 20
- Native Studies 30
- Practical and Applied Arts Survey "A"
- Practical and Applied Arts Survey "B"
- Science 10
- Social Studies 9
- Social Studies 30

Saskatchewan Government Correspondence School

http://sgcs.sasked.gov.sk.ca

Saskatchewan Government Correspondence School
1500 – 4th Avenue, Regina, SK   S4P 3V7

Tel: (306) 787-6024 / 1-800-667-7166
Fax: (306) 787-7223
E-mail: sgcs.info/@sasked.gov.sk.ca

The Saskatchewan Government Correspondence School is a unit within the Curriculum and Instruction Branch of Saskatchewan Learning.

In 2002-2003, the Saskatchewan Government Correspondence School is offering the following 12 high school courses online:

- Chemistry 30
- Computer Science 20
- Computer Science 30
- English Language Arts A9
- English Language Arts A10
- English Language Arts 20
- English Language Arts A30
- French 20
- Law 30
- Physics 30
- Practical and Applied Arts Survey 10
- Psychology 20

The online courses offered by the Saskatchewan Government Correspondence School are developed and taught by certified teachers who are on staff at the school.

Saskatchewan Government Correspondence School (Continued)

The Correspondence School's fee structure for full service courses follows. Full service means that students submit their completed lessons to teachers at the Correspondence School and receive instruction, feedback and evaluation from the school.

- **Students under the age of 16 or 16 years of age and older registered with a school, school division or First Nation:**

Regular Service	Enhanced Technology Service
(Regular service refers to printed course materials supplemented by multi-mode resources such as CDs, videotapes and kits.)	(Enhanced Technology Service refers to courses offered online, by audio-teleconference, or through television.)
Full Credit – $ 377.10	Full Credit – $ 520.00
Half Credit – $ 214.60	

- **Students who are 16 years of age or older and are not registered with a school, a school division or a First Nation:**

Regular Service	Enhanced Technology Service
(Regular service refers to printed course materials supplemented by multi-mode resources such as CDs, videotapes and kits.)	(Enhanced Technology Service refers to courses offered online, by audio-teleconference, or through television.)
Full Credit – $ 162.10	Full Credit – $ 270.00
Half Credit – $ 107.10	

In addition, the Correspondence School offers a reference service. Students can purchase printed lesson materials and multi-mode resources, and use them for self-study or under the guidance of a local teacher.

The Correspondence School requires payment before any course materials are sent out. Payment comes from a variety of sources – from students themselves, their families, boards of education, First Nations or Social Services. When boards of education pay for a correspondence course, they submit a form to the School Grants Office in order to receive recognition under the Foundation Operating Grant for the money they spent. The amount of recognition they receive depends on a variety of factors including their tax base and enrollment.

The Saskatchewan Government Correspondence School is funded through a Revolving Fund. The details of this Fund are specified in Section 11 of *The Education Act, 1995*. Money taken in as tuition goes into this Fund. Any surplus in this Fund may be paid to the Government of Saskatchewan General Revenue Fund. Money from the General Revenue Fund may be used to subsidize operating expenses of the Correspondence School if necessary.

Saskatoon Catholic Cyber School

http://www.scs.sk.ca/cyber/home.htm

Cyber School

2115 McEown Avenue, Saskatoon, SK   S7J 3K8

Phone: (306) 668-2981

Fax: (306) 668-7921

E-mail: General Mail cyber@scs.sk.ca

This online school is a branch of the Saskatoon Catholic School Division. The Saskatoon Catholic School Division is funded partially by the provincial government under the Foundation Operating Grant program and partly through tax revenues raised locally.

All courses follow the Saskatchewan K-12 curricula. Courses are developed and taught by certified teachers employed by Saskatoon Catholic School Division.

Courses are free to students of the Saskatoon Catholic School Division. In other situations, courses are priced at $500 each. If a student under 22 is enrolled with a school division or First Nation elsewhere in Saskatchewan, the Cyber School invoices the school division or First Nation the appropriate amount. The school division that pays for the course receives recognition under the Foundation Operating Grant. Saskatchewan Learning provides 75 floating registrations for students who are under 22 but not registered with a school division. The Saskatoon Catholic School Division receives recognition under the Foundation Operating Grant for the 75 floating registrations. Students who are 22 or over can pay the cost of courses themselves. (Sometimes their families or a First Nation will pay).

However, the situation is problematic for students over 22 who cannot afford to pay themselves. The Cyber School began negotiations with SIAST to work out an arrangement in which the Cyber School teaches the course and SIAST gives the credit. However, these negotiations are now on hold because the Saskatoon Catholic Superintendent who was responsible for them is retiring.

The courses offered vary somewhat from one semester to the next. Courses planned for 2002-03 are:

- Calculus 30
- Chemistry 20
- Chemistry 30
- English A30
- English B30

- Information Processing 10
- Math 90 (Grade 9)
- Mathematics 20
- Physics 20
- Physics 30

Summary of Saskatchewan TEL Resources

This summary includes two tables. Figure 14 breaks Saskatchewan TEL resources down into five categories. Figure 15 is a further breakdown of the items listed in the "courses" category of Figure 14. Figure 15 breaks courses down into subject areas.

Figures 14 and 15 include information about both adult academic preparation TEL courses and K-12 TEL resources.

Figure 14: Summary of Existing Saskatchewan Resources That May Be Relevant to Technology Enhanced Academic Preparation

Type of Resource	Available Resources
Courses	• *Central iSchool* – Approximately 15 high school courses from Grades 9-12 available in 2001-02. Approximately 22 courses will be available in 2002-03. • *Dumont Technical Institute* – Métis Studies. • *North West Regional College* (on behalf of all post-secondary education institutions) – Adult 12 Math A30. • *Saskatchewan Government Correspondence School* – In 2002-03, 12 on-line courses are available at the Grade 9-12 level. • *Saskatoon Catholic Cyber School* – In 2002-03, five 30-level courses, three 20-level courses, one 10-level course and one Grade 9 course. • *SIAST*: **Virtual Campus** ▪ BE Math Bridging – Phase 1 ▪ BE Math Bridging – Phase 2 ▪ BE Pre-Apprenticeship/Trade Applied Mathematics **Multi-Media Resources** ▪ Numeracy 1 ▪ Numeracy 2 ▪ Academic Preparation for Science • *SIFC* – Math Readiness for Aboriginal Students and English Readiness. • *University of Regina* – AMTH 002 – mathematics preparation for university study. • *University of Saskatchewan* – Math Readiness Course, Math Foundations Course, Math Foundations Course – Phase 2.
Learning Resources	• *Central iSchool* – Approximately six packages of online resources and support materials, most for Grades 1-9. • *Saskatchewan Government Correspondence School* – over 70 high school courses available for reference purposes as print packages. • *University of Regina* – Web-based Computer Literacy Repository, Web-based Introductory Computer Science.
Student Support	• *Regional Colleges* and *SIAST* – TEL Preparation Course. • *University of Saskatchewan* – Virtual Writing Centre, IT Ready Program. • *University of Regina*, *University of Saskatchewan* and *SIAST Libraries* – Information Literacy Program.
Professional Development and Support	• *Central iSchool* – Approximately 18 instructor support/information packages. Some deal with specific subject areas, others deal with general topics like test bank management. • *University of Regina* – Math Central – Training of Trainers: Supporting Learners Through First Class Software.
Operational Issues to Implement Priorities	• *Saskatchewan's Regional Colleges* (on behalf of all post-secondary education institutions) – Mathematics Assessment Database.*University of Saskatchewan* – Common Platform: Computer-Mediated Communication and File Transfer.

Note: A "course" is a series of lessons designed to teach prescribed knowledge and skills, using content, assignments and review or self-test exercises. A "learning resource" is supplementary material for group or individual use, such as a research project, to enrich, expand on or complement formal study.   A few of the courses above might also be considered as learning resources depending on the user's perspective.

Figure 15 below is a subject breakdown of the items listed in the "courses" section of Figure 14. It includes only "courses" not learning resources, student support materials or professional development support materials.

Figure 15: Saskatchewan Online and Multimedia Courses by Subject Area

Subject Area	Available courses
Biology	• Biology 20 (Central iSchool) • Biology 30 (Central iSchool)
Calculus	• Calculus 30 (Saskatoon Catholic Cyber School)
Chemistry	• Chemistry 20 in English (Central iSchool) • Chemistry 20 (Saskatoon Catholic Cyber School) • Chemistry 30 (Correspondence School) • Chemistry 30 (Saskatoon Catholic Cyber School)
Computer Science	• Computer Science 20 (Correspondence School) • Computer Science 30 (Correspondence School)
English Language Arts	• English Language Arts A9 (Correspondence School) • English Language Arts A10 (Correspondence School) • English Language Arts 20 (Correspondence School) • English Language Arts A30 (Correspondence School) • English Language Arts B30 (Central iSchool) • English A30 (Saskatoon Catholic Cyber School) • English B30 (Saskatoon Catholic Cyber School) • English Readiness (SIFC)
French	• French 20 (Correspondence School) • Core French 10, 20, 30 (Central iSchool)
Mathematics	• Adult 12 Math A30 (NWRC) • BE Math Bridging – Phase 1 (SIAST) • BE Math Bridging – Phase 2 (SIAST) • BE Pre-Apprenticeship/Trade Applied Mathematics (SIAST) • Numeracy 1 (SIAST) • Numeracy 2 (SIAST) • Math 9 (Central iSchool) • Math 9 (Saskatoon Catholic Cyber School) • Mathematics 20 (Saskatoon Catholic Cyber School) • Math 20 (Central iSchool) • Math A30 (Central iSchool) • Math B30 (Central iSchool) • Math C30 (Central iSchool) • Math Readiness for Aboriginal Students (SIFC) • AMTH 002 (U of R) • Math Readiness Course (U of S) • Math Foundations Course (U of S) • Math Foundations Course – Phase II (U of S)
Physics	• Physics 20 (Saskatoon Catholic Cyber School) • Physics 30 (Correspondence School) • Physics 30 (Saskatoon Catholic Cyber School)

Figure 15: Saskatchewan Online and Multimedia Courses by Subject Area
(Continued)

Subject Area	Available courses
Science	• Academic Preparation for Science (SIAST) • Science 10 (Central iSchool)
Social Sciences	• Law 30 (Correspondence School) • Psychology 20 (Correspondence School) • Social Studies 9 (Central iSchool) • Social Studies 30 (Central iSchool)
Miscellaneous	• Accounting 10 (Central iSchool) • Accounting 20 (Central iSchool) • Arts Education 20 (Central iSchool) • Career and Work Experience (Central iSchool) • Career Education and Guidance (Central iSchool) • Career and Work Experience (English) (Central iSchool) • Career Work Experience Exploration (French) (Central iSchool) • Creative Writing 20 (Central iSchool) • Drafting 10 (Central iSchool) • Drafting 20 (Central iSchool) • Grade 9 Soil Science (Central iSchool) • History 20 (Central iSchool) • Information Processing 10 (Saskatoon Catholic Cyber School) • Media Studies 20 (Central iSchool) • Métis Studies (DTI) • Native Studies 30 (Central iSchool) • Practical and Applied Arts Survey 10 (Correspondence School) • Practical and Applied Arts Survey Course (Central iSchool) • Practical and Applied Arts Survey A (Central iSchool) • Practical and Applied Arts Survey B (Central iSchool) • Visual Arts 10, 20, 30 (Central iSchool)

Note: A "course" is a series of lessons designed to teach prescribed knowledge and skills, using content, assignments and review or self-test exercises. A "learning resource" is supplementary material for group or individual use, such as a research project, to enrich, expand on or complement formal study.   A few of the courses above might also be considered as learning resources depending on the user's perspective.

Description of Other Canadian TEL Resources

This section on Canadian TEL resources has been organized into two components:

- Canadian Adult Academic Preparation TEL Resources
- Canadian K-12 TEL Resources

Canadian Adult Academic Preparation TEL Resources

TEL adult basic education, bridging and other academic preparation courses, programs and initiatives developed by the following institutions are described in the selections that follow:

- Keyano College
- Northern Lakes College
- Okanagan University College
- Open Learning Agency
- Selkirk College

Some of these institutions also offer college or university courses online not listed here.

The institutions described in this section are a sampling only. Other Canadian institutions offer online academic preparation courses as well. However, the number of online adult basic education, bridging and literacy courses and programs is very small compared to the number of high school, college and university courses online. Figure 16 at the end of the section categorizes other Canadian online academic preparation courses by subject area.

Keyano College

http://www.keyanoc.ab.ca/

Keyano College
8115 Franklin Avenue, Fort McMurray, AB   T9H 2H7
Tel.: (780) 791-4800   Toll Free: (800) 251-1408
Fax: (780) 791-1555   E-mail: Registrar@keyano.ca

Online Courses

- **Chemistry 030** – A Review of Chemistry 25, followed by a study of enthalpy energy changes, acids and bases, relative acidity, acid-base reactions, oxidation and reduction, redox reactions, and electric potentials of redox reactions. Alberta Education Course Equivalency: Chemistry 30.

- **English 030** – This course completes the 010, 020, 030 sequence and prepares students for post-secondary university study in English. It includes the study of composition and all major literacy forms: poetry, essay, short story, novel, Shakespearean and modern drama. A substantial writing component is included. Alberta Education Course Equivalency: English 30.

- **Math P 010** (Pure Mathematics) – Students will analyze the numerical data in table for trends, patterns and interrelationships. Using technology, students describe and apply arithmetic operations on tables to solve problems. Students are expected to represent algebraic expressions in multiple ways using rational expressions and operations on polynomials. Students engage in making and analyzing decisions using expected gains and losses based on probabilities of simple events, solving coordinate geometry problems involving lines and segments, solving problems involving triangles including those found in 3-D and 2-D applications, examining the nature of relations with an emphasis on functions. Alberta Education Course Equivalency: Pure Mathematics 30.

Northern Lakes College

http://www.northernlakescollege.ca/index/html

Northern Lakes College
Bag 3000, Grouard, AB   T0G 1C0
Tel.: (780) 849-8600

Northern Lakes College operates a Distance Learning High School.

Presently, courses are delivered through telewriting, but they are all being switched over to CentraOne which means that all high school distance courses will be online by the end of 2003.

Courses offered are:

- English 10
- English 13
- English 20
- English 23
- English 30
- English 33
- Cree 10
- Cree 20
- Cree 30
- Financial Management
- Pure Math 10
- Applied Math 10
- Pure Math 20
- Applied Math 20
- Math 23
- Pure Math 30
- Applied Math 30
- Math 33
- Science 10
- Biology 20
- Biology 30
- Chemistry 20
- Chemistry 30
- Physics 20
- Physics 30
- Social Studies 13
- Social Studies 23
- Social Studies 33

Okanagan University College

http://www.ouc.bc.ca/
http://www.ouc.bc.ca/abe/

Okanagan University College
3333 College Way, Kelowna, BC   V1V 1V7
Tel.: (250) 762-5445

The adult basic education department at Okanagan University College offers the following online:

- **Computer Science 012** – This programming course is intended for students continuing on to technical or degree programs. Problems are solved using structured programming concepts.

- **English 012** – English 012 is compulsory for all students in the Provincial Level program. Concepts developed in English 011 will be continued. Development of literal, inferential and critical comprehension of various works is emphasized using short stories, novels, drama and poetry.

Open Learning Agency (OLA)

http://www.ola.bc.ca/

Open Learning Agency
Student Services, Box 82080, Burnaby, BC   V5C 6J8

Go to: http://www.ola.bc.ca/services/contact.html for a detailed listing of phone and fax numbers, and e-mail addresses for OLA's various departments.

High School and College Preparation Courses Online from OLA

- EASC 024 Earth Science
- ENGL 028 Advanced English Skills
- ENGL 030 Introduction to Literature
- SOST 024 Exploring Canadian Issues

Selkirk College

Web site: **http://www.selkirk.bc.ca/**
ABE Web site: **http://distance.selkirk.bc.ca/college.htm**

Selkirk College
301 Frank Beinder Way, Box 1200,
Castlegar, BC   V1N 3J1
Tel.: (250) 365-7292   Fax: (250) 365-6568

The adult basic education department of Selkirk College offers one online course:

- **CHEM 050-3 Basic Principles of Chemistry** – Chemistry is introduced as an experimental science. Chemical symbols, nomenclature and the quantitative aspects of chemical reactions are emphasized. The fundamentals of classical atomic and molecular structure are presented. Organic and biochemistry are briefly introduced. The laboratory experiments provide opportunities to work with standard lab ware and apparatus, to observe a variety of chemical reactions and to carry out some quantitative measurements on these systems.

**Figure 16: Canadian Adult Basic Education / Bridging Online Courses by
Subject Area**

Subject Area	Available courses
Biology	• Biology 20 (Northern Lakes College) • Biology 30 (Northern Lakes College)
Chemistry	• Chemistry 050-3 Basic Principles of Chemistry (Selkirk College) • Chemistry 20 (Northern Lakes College) • Chemistry 30 (Northern Lakes College) • Chemistry 030 (Keyano College)
Computer Science	• Computer Science 012 (Okanagan University College)
English Language Arts	• English 030 (Keyano College) • English 012 (Okanagan University College) • English 028 (Advanced English Skills) (OLA) • English 030 (Introduction to Literature) (OLA) • English 10 (Northern Lakes College) • English 13 (Northern Lakes College) • English 20 (Northern Lakes College) • English 23 (Northern Lakes College) • English 30 (Northern Lakes College) • English 33 (Northern Lakes College)
Mathematics	• Pure Math 10 (Northern Lakes College) • Applied Math 10 (Northern Lakes College) • Pure Math 20 (Northern Lakes College) • Applied Mat 20 (Northern Lakes College) • Math P 010 (Pure Mathematics) (Keyano College) • Math 23 (Northern Lakes College) • Pure Math 30 (Northern Lakes College) • Applied Math 30 (Northern Lakes College) • Math 33 (Northern Lakes College)
Physics	• Physics 20 (Northern Lakes College) • Physics 30 (Northern Lakes College)
Social Studies	• SOST 024 (Canadian Issues) (OLA) • Social Studies 13 (Northern Lakes College) • Social Studies 23 (Northern Lakes College) • Social Studies 33 (Northern Lakes College)
Science	• EASC024 (Earth Science) (OLA) • Science 10 (Northern Lakes College)
Miscellaneous	• Cree 10 (Northern Lakes College) • Cree 20 (Northern Lakes College) • Cree 30 (Northern Lakes College) • Financial Management (Northern Lakes College)

Note: A "course" is a series of lessons designed to teach prescribed knowledge and skills, using content,
assignments and review or self-test exercises. A "learning resource" is supplementary material for group or
individual use, such as a research project, to enrich, expand on or complement formal study.   A few of the
courses above might also be considered as learning resources depending on the user's perspective.

Canadian K-12 TEL Resources

Most Canadian provinces offer some type of distance learning to K-12 students. Below is a brief description of some of these provincial services and one national program. Specific courses offered by each agency are not listed, since some provide more than 100 courses. Detailed information about the courses available is provided in each agency's web site.

The sample institutions/agencies described below are:
- Alberta Distance Learning Centre (ADLC)
- Canada's SchoolNet GrassRoots Program
- Open School (British Columbia)

Alberta Distance Learning Centre (ADLC)

http://www.adlc.ca/

Alberta Distance Learning
Box 4000, 4801 – 63 Avenue, Barrhead, AB   T7N 1P4
Tel: (780) 674-5333   Fax: (780) 674-6686
List of online courses: http://www.adlc.ca/home/registration/registration2.htm

The Alberta Distance Learning Centre is a branch of Alberta Learning. It offers some Grade 4-6 courses partially online, and some junior high courses totally or partially online. ADLC also offers about 100 online high school courses.

Canada's SchoolNet GrassRoots Program

http://www.schoolnet.ca/grassroots/e/index.asp

The GrassRoots Program
155 Queen Street, 4th Floor, Ottawa, ON   K1A 0H5
Tel: 1-800-268-6608 Fax: Fax: (613) 941-1296
E-mail: gr@schoolnet.ca

The GrassRoots Program is part of Industry Canada's Connecting Canadians Program. Its Web site provides access to more than 100 teacher-created online resources related to themes or areas of study. Although these resources are designed for K-12 students, some may be useful for adult basic education students as well. The individual resources vary in quality from excellent to poor, and each resource would have to be evaluated individually to determine its quality and its suitability for adults.

Open School

http://www.ola.bc.ca/

Open Learning Agency
Student Services, Box 82080, Burnaby, BC   V5C 6J8
OLA departments: http://www.ola.bc.ca/services/contact.html
The Open School is a K-12 distance education school that operates as a division of British Columbia's Open Learning Agency (OLA). OSCAR Online is the School's online high school courses and resources.

Description of GED Preparation Resources Online

A sampling of online GED preparation resources appears below. This list is not comprehensive. There may be other online GED preparation resources in addition to those identified below. The list below is divided into two sections: Canadian resources and American resources.

Canadian GED Preparation Online Resources

New Brunswick Community College – Saint John

New Brunswick Community College – Saint John
P. O. Box 2270, Saint John, NB E2L 3V1
Tel: (506) 658-6600   Fax: (506) 658-6792

The Consortium for Information Technology in Education (CITE) is an initiative of the New Brunswick Community College – Saint John.
http://cite.telecampus.com.

The following GED preparation courses are available online from New Brunswick Community College, Saint John. For detailed information about these courses and system requirements, go to
http://cite.telecampus.com/courses/index.html

- GED Preparation 1
- GED Preparation 2: Writing Skills
- GED Preparation 2: Arithmetic
- GED Preparation 2: Geometry and Algebra

Saskatchewan's Regional Colleges

Most of Saskatchewan's Regional Colleges offer online GED preparation through ED2Go (an American company that sells fully-developed online courses).

All courses run for six weeks, with a two-week grace period at the end. Two lessons are released each week for the six-week duration of the course. Students must complete each lesson within two weeks of its release. There is a cost for this course. Lessons are as follows:

- Week One: Lesson 1 – GED Basics and Reading Strategies
                     Lesson 2 – Writing Skills
- Week Two: Lesson 3 – Writing the Essay
                     Lesson 4 – Social Studies
- Week Three: Lesson 5 – Science
                     Lesson 6 – Literature
- Week Four: Lesson 7 – Whole Numbers and Steps to Solving Word Problems
                     Lesson 8 – Fractions
- Week Five: Lesson 9 – Decimals
                     Lesson 10 – Percentage, Ratio and Probability
- Week Six: Lesson 11 – Measurement and Geometry
                     Lesson 12 – Algebra

American GED Preparation Online Resources

Below is a representative listing of American Online GED Preparation Resources. This list may be incomplete. There probably are other American GED preparation resources online in addition to those listed here.

Free-Ed.Net (For-profit corporation)

Free-Ed.Net
1814 Walden Drive, Columbus, OH   43229
Tel: (614) 846-3875   Fax: (614) 846-2392

Free-Ed.Net is a corporation that offers free online courses, tutorials and activities including GED preparation. The Web site contains a great deal of advertising which subsidizes the courses.

For information about Free-Ed.Net go to http://www.free-ed.net/. For information about their free GED preparation courses go to http://www.free-ed.net/fr10/default.asp.

GED Online (Government program)

http://www.gedonlineclass.com/

North Kansas City Adult Education and Literacy
GED Online Program
3100 NE 83rd Street, Suite 2450, Kansas City, MO   64119
Tel: (816) 413-5497   Fax: (816) 413-5465   E-mail: gedonline@nkcsd.k12.mo.us

GED Online is a program sponsored by the Missouri Department of Elementary and Secondary Education. The online program is free to Missouri residents and includes:

- Assessment tests
- Instructors
- Worksheets and assignments
- Communication tools
- Web links

GEDonline (For-profit corporation)

http://www.gedonline.org/

c/o Diversified Computer Services
P. O. Box 2199, Kenosha, WI   53141-2199
Tel: (262) 652-2492

A for-profit company that provides online GED practice tests, assistance with practice, and opportunities for students to chat with each other online.

Lane Community College

http://www.lanecc.edu/

Lane Community College
4000 E. 30th Avenue, Eugene, OR   97405
Tel: (541) 747-4501

For more information on GED preparation, go to http://slint.lanecc.edu/users.lamoreauxa/ or contact the instructor: Alise Lamoreaux (e-mail at Lamoreauxa@lanec or phone (541) 747-4501, ext. 2969).
An online GED preparation class with five components:

1. Language Arts, Writing
2. Language Arts, Reading
3. Social Studies
4. Science
5. Math

Each of the GED content areas is considered a class in itself. Some students prefer to take more than one area at once; while others prefer to concentrate on one subject at a time.

Online Training Institute (For-profit corporation)

Online Training Institute
2669 Forest Hill Boulevard, Suite 207, West Palm Beach, FL   3340
Fax: (561) 357-4957
GED preparation courses: http://www.oltraining.com/be_ged/ged.html.

The GED test consists of five parts. Online Training offers a course in each. Each course costs $150 US.

- Part 1: Writing skills – including the elements of standard English, sentence structure and the parts of speech. A composition of approximately 200 words is also requested.

- Part 2: Mathematics – including basic arithmetic, algebra, and geometry.

- Part 3: Science – including life sciences such as biology and physical sciences such as physics, chemistry, and earth science.

- Part 4: Interpreting Literature and the Arts – including popular literature, classical literature, and commentary on literature and the fine arts.

- Part 5: Social Studies – including behavioural science, U.S. history, political science, economics, and geography.

Rio Salado College (Community College)

Rio Salado College, Maricopa County Community College District
2323 W. 14th Street, Tempe, AZ   85281
Tel: (480) 517-8000 or 800-729-1197
http://www.rio/maricopa.edu/

For information about online GED preparation, go to http://www.rio.maricopa.edu/ci/programs/ged/ or contact Connie Armstrong at (480) 517-8036 or connie.armstrong.faculty@email.rio.maricopa.edu.

A 14-week online GED preparation course.

Overview of Existing TEL Resources

A review of online courses, programs, learning resources, student support materials and instructor support materials for academic preparation has led to the following observations.

- There are hundreds of online university and college courses from Canadian and American institutions, but there are very few online literacy, adult basic education or bridging-type courses designed specifically for adult students.

- Dozens of standard high school courses are available online. In Saskatchewan, the Saskatchewan Government Correspondence School, the Central iSchool and the Saskatoon Catholic Cyber School all develop courses like Biology 30, English A30 or English B30. Existing online courses should be evaluated to determine the potential for utilization or adaptation for an adult audience prior to new development being supported.

- Each institution is developing online courses and programs in isolation. In some cases, individual developers within an institution are working in isolation. These observations apply both to post-secondary institutions and institutions developing high school courses. They apply to Saskatchewan and to other provinces. There is little standardization among courses. Most have a different visual "look", different ways of maneuvering from page to page and section to section, different buttons and commands.

- There are few online resources for instructors of adults. Instructors have to search long and hard to find curricula, ideas for responding to various types of learners and instruction methodologies for adults. There are a few online resources for literacy instructors (Centre AlphaPlus Centre; National Adult Literacy Database) but no existing Web site draws together and provides links to existing resources for adult basic education or literacy instructors.

- Numerous institutions provide GED preparation online. Some of these institutions are Canadian, but most are American. Institutions that offer GED preparation online include both publicly funded and for-profit institutions. In most cases, there is a charge for online GED prep courses, but in a couple of instances, the courses are offered free of charge.

- Students taking online courses need opportunities to ask their instructors questions by phone or e-mail and to get quick responses. This is particularly the case when a student encounters a problem or difficulty, for example, if the student doesn't understand an assignment. Students also need to be able to call a help desk if they run into technical problems. In many programs, instructors and help desk personnel work during regular office hours. This is inconvenient for students with job and family responsibilities who do their course work in the evenings and on weekends.

- There are thousands of reports, documents and tools relating to program evaluation on the Internet and several Web sites devoted to program evaluation. Most are somewhat similar in that they advocate assessing program outcomes against program objectives and describe various tools and processes for doing this. Most of the program evaluation documents describe processes which can be applied to virtually any type of program ranging from education programs, to public health programs, to child welfare programs. At least some of these models could be applied to adult academic preparation programs.

- Student evaluation is another matter. Student evaluation can have three purposes: formative, summative and diagnostic. Although a great deal of information is available about using evaluation for these purposes with K-12 students, there is little information about using evaluation for purposes other than summative with adult academic preparation students.

  There is little information about how current student evaluation practice can be applied to adult academic preparation students. For example, one approach to student evaluation includes writing rubrics that describe the characteristics of student achievement at various levels, selecting exemplars that illustrate actual student work at each level, and training teachers so that they grade consistently on the basis of rubrics and exemplars. This is the approach used by Saskatchewan Learning in the K-12 Provincial Learning Assessment program, by several Saskatchewan school divisions, including Regina Public, and by the Council of Ministers of Education Canada in the School Achievement Indicators Program (SAIP).

  A relatively thorough Internet search uncovered no rubrics that describe the characteristics of achievement at various levels by adult academic preparation.

  Two other contemporary approaches to student evaluation are performance evaluation and the use of student portfolios. Little research has been done on how these approaches can be used with adult academic preparation students.

Phase 3
Identification of Priorities for TEL in Academic Preparation

Phase 3 – Identification of Priorities for TEL in Academic Preparation

The foregoing analysis of need and existing online resources reveals a wide variety of materials from many different sources that could be used to prepare adults for post-secondary study. In principle, the TEL Academic Preparation Subcommittee advocates the use or adaptation of existing materials wherever possible for technology enhanced academic preparation.

In order to benefit from such use, educators need to ensure that these materials meet quality standards and can be applied effectively in addressing the needs of adult learners in Saskatchewan settings. In addition, there is a need to ensure consistency and coordination in the development or acquisition of courses and resources, student support, and instructor support across the province, so that learners can be assured that their achievements will be recognized.

The Subcommittee proposes a broad framework for province-wide coordination in all aspects of learning, teaching, and program delivery for online academic preparation. This framework builds on a model recommended in the Regional Colleges' *Distance Delivery of Adult 12* report (Frison, 2001) and the TEL Action Plan overall. It has five key components, summarized below:

1. **Courses** – A "course" is a series of lessons designed to teach prescribed knowledge and skills, using content, assignments and review or self-test exercises. Existing course materials may need to be altered to suit the unique needs of adult learners. All materials need to reflect common standards for quality and usability for people with special needs. Program providers also want to coordinate and share in the development and use of online courses.

2. **Learning resources** – A "learning resource" is supplementary material for learners to use on their own or in study groups to enrich, expand on or complement their courses. As with the courses, other resources need to reflect common standards for quality, integration and coordination. Resources need to be readily available to learners across the province.

3. **Student support** – Student support refers to a broad range of services that enable people to succeed in their studies. Student support can include academic services such as tutoring, discussion groups, and testing; financial assistance; life skills training and support; personal and career counselling; and technical services such as a help desk and online tutors. Services directly related to studies may be built into the courses themselves, while other services need to be coordinated with support services provided by institutions and supporting agencies.

4. **Professional development and support** – Instructors need specialized training, peer support and technical support in order to use technology effectively in teaching. Instructors working with students in academic preparation often have unique concerns that are not always addressed in services provided by institutions for mainstream faculty and instructors.

5. **Coordination of Future Work to Implement Priorities** – Academic preparation programs offered by the universities and SIAST are designed to assist students in preparing for entry into degree, diploma and certificate credit programs. SIAST, the Regional Colleges, DTI and SIIT also offer Basic Education, Adult 12 and other academic preparation programs in their constituencies. All post-secondary institutions would benefit significantly from a more uniform and coordinated approach to academic preparation, through effective use of technology. Agreements and common operational procedures are needed in order to facilitate coordination and cooperation.

The members of the TEL Academic Preparation Subcommittee have identified priorities in each of the five categories described above. The selection of priorities was based on the following criteria:

- Bridging – based on specific goals to cover gaps and provide upgrading in knowledge, skills, and curriculum content;
- Basic education prerequisites – based on need for accessibility related to time and location;
- Need for distance delivery – dependent on demand in any given location and across the province;
- Availability and suitability of existing resources; and
- Ability to develop what is needed.

Phase 3 of the strategy and action plan for technology enhanced academic preparation outlines in detail the priorities selected for each of the five categories described above. Taken together, the priorities present a broad picture of framework for coordination and future development in Saskatchewan.

1. Courses

A "course" is a series of lessons designed to teach prescribed knowledge and skills, using content, assignments and review or self-test exercises. Numerous courses are available for different purposes, but these may need to be adapted in order to address the unique needs of adult learners. Courses need to reflect common standards for quality and be accessible for people with special needs. Mechanisms are needed to enable program providers to coordinate and share in the development and use of online courses.

This section outlines three priorities relating to courses.

Priority 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation.
Rationale	Courses are available for different academic preparation needs from a variety of sources within Saskatchewan and elsewhere. As well, numerous Grade 9-12 online courses have been or are being developed by Saskatchewan's K-12 educators. Some of these courses may be useful as they are, but many need to be adapted in order to be effective in meeting the needs of adult learners.
	Good course design begins with an assessment of existing resources before new development is undertaken. Common criteria are needed both to assess the quality and suitability of existing resources and to guide the development of new content for adults. This will also provide the foundation for ongoing development and renewal of TEL content for academic preparation.
	For assessing existing courses, or a summative evaluation, common criteria would enable instructional designers to determine whether all or specific elements or a course are suitable for adults and what adaptations would be necessary. For new content, a formative evaluation with common criteria would enable designers to judge various elements of a course and revise these as they are developed before they begin implementation.
Key Elements	**Dimensions of Criteria** Criteria that address all aspects of course development and delivery would help to ensure that TEL courses for adult academic preparation meet the highest quality standards. The criteria should include the following dimensions:
	a) Similar Format – A similar format and appearance for all courses will make learning easier for adults and enable them to concentrate on mastering content and skills, rather than on technical aspects.
	Ideally, the navigation system and layout would be the same for all courses. For example, SIAST uses WEB CT learning management software for all courses, with a common navigation system and interface and a built-in template for a uniform layout. Other post-secondary education institutions are adopting similar measures. Although a variety of platforms may be needed to support specific subject matter applications such as math formulas, a consistent structure overall would help to coordinate and share courses among the various program providers and support greater access for learners.

Priority 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation. (Cont.)
Key Elements (Continued)	**b) Suitability for Adults** – A course that is suitable for adults includes examples drawn from the real-life world of making a living and raising a family. The illustrations, sound effects and music, and use of humour – whether visual, auditory or written – are designed for an adult audience. When adults see themselves and their world reflected in a course, they are more likely to see the relevance, become more fully engaged and complete their work. **c) Quality Instruction** – Quality instruction for adults promotes learning and makes a course appropriate to their needs. Effective teaching strategies as well as relevant content are critical to quality in online environments, where adults frequently work on their own. Quality online instruction for adults depends on: • Using relevant visual and sound cues to convey information and retain interest; • Structuring courses so that learners can choose from among several activities or methods of presentation, depending on their interests, skills and ability; • Presenting material in small units that students can master more quickly, to promote a greater sense of accomplishment; • Using a variety of approaches that appeal to different learning styles; • Providing review or challenge activities for students of different abilities; • Using the unique capabilities of the medium, such as simulations; and • Providing links to other Web sites or learning resources that students can use to supplement or enrich their studies. Quality instruction for adults combines opportunities to develop skills with understanding of content. For example, seven Generic Skills are built into all courses in the Basic Education curriculum: lifelong learning, communications, numeracy, critical and creative thinking, technological literacy, valuing diversity, and interpersonal and team work, so that students learn to reflect on and interpret content in relation to daily life. **d) Interaction** – Interaction is a key to learning and is critical to success in online environments. Students engage more fully and learn more when they interact with others. In a face-to-face course, interaction can occur more naturally and spontaneously, but more effort is often needed to stimulate and sustain interaction in an online course. Good cues and questions help to prompt a student to interact with others. Instructors and tutors set a model for interaction by contacting students at specific times during a course. Student/instructor interaction is needed to enable students to question and obtain quick feedback when they complete assignments well or face a problem. Student/student interaction helps to create a sense of community, promote interpersonal and team work, and build respect for differing viewpoints.

Priority 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation. (Cont.)
Key Elements (Continued)	Interaction can be created in a variety of ways, including: • Online – e-mail or chat rooms. • Face-to-face – group meetings at the beginning and at various intervals of a course; instructor visit to a site where several students are gathered. • Telephone – one-to-one conversations and teleconferences; toll-free number. • Onsite tutor – creating and facilitate discussion groups among students taking the same course and responding to general questions. • Student/community interaction – students interviewing local people, or visiting a particular site or location; assignments requiring students to apply what they have learned to a particular situation in their community. • Video conferencing – enables students both to see and to talk to each other. Any or all of these types of interaction might be used in a course. New forms of interaction are emerging and the range of possibilities increasing with new developments in technology. For example, graphic tablets and whiteboards can be used in math problem-solving exercises, and video conferencing is becoming more feasible through the Internet as bandwidth increases. In addition to interacting with each other and with instructors, students in a computer- or Web-based course need to be able to interact with the technology. Courses can be designed so that students and instructors interact with the course materials to test their skill levels in using the hardware or software. They can be linked automatically to skill development activities relevant to their specific needs, so that they can prepare better for effective study online. **e) Aboriginal Content and Perspectives** – The design, development and delivery of courses should reflect the needs, roles and contributions of Métis and First Nations peoples. For example, Social Studies courses that relate to Saskatchewan's history should include perspectives of the Aboriginal peoples as well as those of the European colonizers. Examples in all courses can be drawn from Aboriginal experiences. Aboriginal content should be integrated in the course as it is adapted or developed, based on institutional and department policies and in consultation with Aboriginal institutions. For example, the University of Saskatchewan has adopted guidelines for <u>Responding to the Needs of Aboriginal Peoples</u> (May 2002), as part of its planning framework. Saskatchewan Learning incorporates Aboriginal content and perspectives in the Core Curriculum and provides ideas for using content and themes to achieve various learning objectives in each curriculum guide (Saskatchewan Education, 2000). Aboriginal content and perspectives should also be included in supplementary materials, such as links to other Web sites and online learning resources. Guidelines for assessing print and online material can be found in *Diverse Voices: Selecting Equitable Resources for Indian and Métis Education* (Saskatchewan Education, 1995).

Priority 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation. (Cont.)
Key Elements (Continued)	**f) Accessibility for People with Disabilities** – All courses should be designed for ease of use by people with disabilities. For example, it is wise to create documents for various types of hardware. Material should be accessible without the use of a mouse, with small, low resolution or black and white screens, with no screens, or with only voice or text input.
	National and international accessibility standards, with guidelines for developing courses, instructional materials and Web sites for people with various types of disabilities, are available to designers. For example,
	The Web Accessibility Initiative (WAI) is responsible for implementing the World Wide Web Consortium's (W3C) commitment to making the Web accessible to all people. The WAI is a recognized authority for the development of Web accessibility guidelines. The Web Content Accessibility Guidelines 1.0 (WCAG 1.0) are internationally accepted and many standards and policies are derived from these guidelines.
	(Hyatt, 2002)
	The Web Content Accessibility Guidelines 1.0 (WCAG 1.0) are available online at http://www.w3.org/TR/WAI-WEBCONTENT/.
	Two examples of policies derived from these guidelines are the *Simplified Web Accessibility Guide,* published jointly by Human Resources Development Canada and British Columbia Ministry of Education (Hyatt, 2002), and *Common Look and Feel (CLF) Standards and Guidelines for the Internet,* published by the Treasury Board of Canada (2000).
	Tools are also available to help instructional designers ensure that material is accessible to people with disabilities. An example is Bobby, a software tool developed by the Center for Applied Special Technology (CAST) (http://www.cast.org/bobby/) to help Web page authors identify and repair significant barriers to access.
	g) Relevance of Learning Resources (see Priority 2) – Good quality online courses provide links to supplementary learning resources for additional research, enrichment or practice. It is important to ensure that links to resources are accurate, appropriate to the age, interests and abilities of adult learners, written and presented suitably, and produced by credible agencies.
	Guidelines for assessing supplementary online resources should be based on existing institutional guidelines for instructional design or drawn from professional practice. The common criteria developed for assessing TEL content for academic preparation can also be applied to evaluation of supplementary resources.

Priority 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation. (Cont.)
Next Steps	• Establish a group to develop criteria that can be used to assess the availability and applicability of existing courses and to guide development of new courses. This group could be relatively small (5-7 people) and consist of instructional designers, instructors, and others who are knowledgeable about TEL for adult learners. Members should represent Saskatchewan's post-secondary education institutions. A member of the TEL Academic Preparation Subcommittee could lead this group. • Provide this group with appropriate resources. The task will involve researching, compiling and summarizing criteria that already exist; consulting with instructors or faculty, TEL support staff, and other stakeholders, and drafting a set of criteria that is acceptable to all partners. A contract researcher/writer will be needed. Suggested sources for developing criteria are *The Canadian Recommended E-learning Guidelines* (Barker, 2002), and other guidelines published by Cartwright et al, 1999; EvNet; Institute for Higher Education Policy, 2000; MERLOT, 2000; Stevens, Jolliffe & Ritter, 2001; and Useit.com. In addition, Saskatchewan Learning has developed some standards for teachers who are developing courses for Central iSchool.

Priority 1.2:	Offer a complete Adult 12 program and related bridging courses online.
Rationale	A complete Adult 12 program online would help the post-secondary education institutions to increase their capacity for academic preparation and address the significant demand identified for required courses across the province:
	…Colleges and technical institutes in Saskatchewan [report] that their Grade 12 programs are filled and that many individuals are still waiting to take all or part of their Grade 12….
	…Most learners waiting for access to Grade 12 courses want to take all of the seven required classes, while those who need only specific classes predominantly request maths, sciences, or English (Frison, 2001).
	The courses required for completion of Adult 12 are:
	• English A30 • English B30 • History 30 or Native Studies 30 or Social Studies 30 • One 30-level Math (Math A30, B30, or C30) • One 30-level science (Physics 30 or Chemistry 30 or Biology 30) • Two 30-level electives, one of which may be a prior learning credit.
	Math C30, Physics 30, and English Language Arts are the highest initial priority for online delivery across the province, since any face-to-face site tends to have low enrollments, making it difficult for institutions to offer them continuously. In addition, some potential students are employed full-time (e.g. SaskPower, Weyerhaeuser) and cannot attend face-to-face classes.
	Bridging courses are also a parallel priority for learners who need to upgrade their knowledge and skills before entering Adult 12. Ideally, each Adult 12 course and related bridging courses would be developed as a unit.
	As illustrated in Figure 17 on the following page, all the courses required for Adult 12, except for History 30, have already been developed within the K-12 system for online delivery. Some Grade 9-11 courses in key areas such as English Language Arts and Mathematics are also already online.
	All of these existing courses need to be weighed against the criteria described in Priorty 1.1 in order to determine their appropriateness and usefulness for adult students, and to assess whether adaptation is possible.
Key Elements	Plans to offer a complete Adult 12 and bridging courses online should include:

	• Annual process to determine subject priorities and bridging needed.
	• Call for proposals for development as required, outlining plans to:
	  ▪ Assess existing online courses to determine their applicability and the adaptation or development required to meet the needs of adult learners.
	  ▪ Develop required courses or modifications.
	  ▪ Provide student support required for adult learners to be successful. (See Priority 3).

Priority 1.2:	Offer a complete Adult 12 program and related bridging courses online. (Continued)	

Key Elements (Continued)	Below is a list of Grade 12 completion courses already developed for online delivery within the K-12 system. All of these will need to be assessed against the criteria for academic preparation in order to determine what can be used for adult learners before any new development in these subject areas is undertaken.

Figure 17: Online Availability of Courses Needed for Adult 12

English (both English A30 and B30 required)	English A30	Correspondence School Saskatoon Catholic Cyber School
	English B30	Saskatoon Catholic Cyber School
Social Sciences (one required)	History 30	
	Native Studies 30	Central iSchool
	Social Studies 30	Central iSchool
Mathematics (one required)	Adult 12 Math A30	North West Regional College (in progress) Central iSchool
	Math B30	Central iSchool
	Math C30	Central iSchool
Science (one required)	Biology 30	Central iSchool
	Chemistry 30	Correspondence School Saskatoon Catholic Cyber School
	Physics 30	Correspondence School Saskatoon Catholic Cyber School
Electives (two 30-level electives required)	Calculus 20	Saskatoon Catholic Cyber School
	Computer Science 30	Correspondence School
	Core French 30	Central iSchool
	Law 30	Correspondence School
	Visual Arts 30	Central iSchool

Some Grade 9-11 courses in key areas such as English Language Arts and Mathematics are also already online.

Next Steps	• Confirm subject area priorities for online academic preparation starting in 2002-03. Tentative priorities are English Language Arts, Math and Physics 20 and 30 (separate courses, not sequential). • Prepare a request for proposals that outlines the process for developing Adult 12 courses and related bridging courses for academic preparation. • Include academic preparation courses in the annual review of provincial funding for TEL content development.

Priority 1.3:	Develop policies, protocols and procedures that enable and support sharing of resources.
Rationale	Saskatchewan's K-12 and post-secondary educators need to be able to share resources and expertise in order to develop appropriate TEL content for adults working toward completion of Grade 12 qualifications. Ideally, all Grade 12 courses or parts of courses and related learning materials could be used in more than one situation, among all of Saskatchewan's education institutions. In addition, other provinces are in the process of establishing databases of learning objects, and national standards are being developed. Saskatchewan needs to be in a position to participate with other jurisdictions in the development and sharing of courses and resources for academic preparation.
Key Elements	Agreements and procedures need to be in place to enable Saskatchewan's educators to share courses and learning resources or a database of learning objects developed with public funds. This means articulating and addressing a number of issues related to ongoing coordination (see Priority 5), such as: • Institutional policies on sharing of resources. • Ownership of and responsibility for maintaining and upgrading TEL courses and learning objects (e.g. developer, institution, or provincial government). • Licensing of various commercial course development systems (e.g. who owns and pays for the license? To what institutions and for what purposes does the license apply?) • Institutional copyright policies (e.g. use of copyrighted materials online). A Saskatchewan database of learning objects must be designed so that it is consistent with national standards and can support interaction and exchange with databases in other provinces. In addition, operational issues must be addressed (see Priority 5), such as: • Technical infrastructure for and location of a database of learning objects. • Ongoing operation of a database of learning objects?
Next Steps	• Facilitate an agreement among institutions that allows for access to academic preparation course materials developed with public funds in Saskatchewan. This agreement might include publicly funded K-12 institutions as well as post-secondary education institutions. • Establish a databank of learning objects containing a variety of online components such as written descriptions, maps, math equations, charts, digital images, video clips, review questions, computer simulations, tutorials, etc. Databanks of learning objects can be made available for use in different ways, in different courses, and at different grade and age levels. The learning objects stored in a databank should reflect technical and quality standards acceptable to all members and conform to national standards. Background research relating to policies, protocols and procedures to facilitate sharing of resources may involve consultation with the institutions and legal experts. A contracted researcher/writer may be needed.

2. Learning Resources

A "learning resource" is supplementary material for learners to use on their own or in study groups to enrich, expand on or complement their courses. As with the courses, other learning resources need to reflect common standards for quality, integration and coordination and be assessed for their suitability for adult learners. In addition, learning resources need to be readily available to learners across the province.

One priority relating to learning resources is described in this section.

Priority 2.1:	Provide academic preparation students with access to online learning resources.
Rationale	Academic preparation students, like students in all other learning situations, need access to learning resources that support their course work. Students learning online need ready access to such resources, preferably online.
Key Elements	Two types of learning resources are needed to support academic preparation: • **Course-specific learning resources** – These are resources that relate specifically to the subject being studied. For example, resources for History 30, Canadian Studies, would relate to Canada's economic development, culture, governance and international role. Links for course-specific learning resources would be included in each course. • **General reference materials** – Basic reference materials, such as dictionaries, encyclopedias, atlases and maps. Hundreds of basic reference tools are available online, and several agencies have compiled them into lists. For example, the Virtual Resource Centre at http://www.sasked.gov.sk.ca/docs/vrc/toc.html, which is part of the provincial K-12 Evergreen Curriculum, lists and provides links to atlases, maps, dictionaries, encyclopedias and other general reference materials. Saskatchewan Provincial Library lists and provides links to reference materials at http://www.lib.sk.ca/booksinfo/encyclopedia.html. Links to lists of course-specific and general reference materials could be included as part of a course design or housed in an "Academic Preparation" section of the Campus Saskatchewan Web site.
Next Steps	• Develop guidelines that can be used to assess the quality and appropriateness of course-specific learning resources. These should be coordinated with the guidelines recommended in Priority 1.1. • Ensure that all technology enhanced academic preparation courses are resource-rich with links to suitable course-specific resources. • Add an "Academic Preparation" section to the Campus Saskatchewan Web site and provide links to existing lists of online reference materials.

3. Student Support

Student support refers to a broad range of services that enable people to succeed in their studies. Three main types of support are required in varying amounts and at different times:

- academic support such as academic and program counselling; skills in writing essays, research reports and exams; and course tutoring, testing and exam supervision;

- personal and practical support such as financial counselling and aid; life skills coaching; personal and career counselling; daycare; and transportation; and

- technical support such as access to computers and a help desk for technical questions and problems.

The post-secondary education institutions are currently developing different models of learner services to address the types of support required.

At the institution level, the universities and SIAST are incorporating online support services broadly for all learners in major urban centres. They are implementing specific support initiatives for online learners as part of their annual TEL plans.

In rural and northern communities, the Regional Colleges are implementing a plan to coordinate learner support services across the province through a Network of TEL Services. They are conducting two-year pilots to test various types of support for adults in all levels of study.

Together, the post-secondary education institutions have established a TEL Learner Support Task Team to identify and coordinate services for online learners on a province-wide basis.

Support services required for academic preparation may be built into courses or coordinated with the services provided by institutions and supporting agencies. Three priorities directly related to academic preparation are described below:

Priority 3.1:	Build student support into every technology enhanced academic preparation course.
Rationale	Student support is critical to and greatly enhances the potential for students' success. The type and amount of support required for a TEL course varies with the expectations of the course and students' expectations and level of readiness.
Key Elements	It is important to assist students in assessing their readiness and obtaining the support they need in order to concentrate on learning. Supports should be provided face-to-face in institutions and local learning centres, by telephone, or online, depending on the needs of learners. Online courses typically require: • Course tutoring, assignments, discussion groups and exam supervision. • Technical support for online study alone, with an instructor or in groups.
Next Steps	• Assist students in assessing their level of academic and technological readiness for each online course and provide the academic and technical support required as part of the course. • Counsel students about other support services available and refer them to appropriate training necessary to ensure their readiness prior to enrolment.

Priority 3.2:	Ensure that academic preparation students have the skills they need to succeed with technology enhanced learning.
Rationale	Students need to develop specific technological skills before they can succeed with online learning. These skills are commonly called TEL preparation or technological literacy skills. They include being able to use a keyboard and a mouse, enter and move around within a Web site, and send and receive e-mail.
	Some work is already being done in this area. The Regional Colleges and SIAST are creating a TEL Preparation Course, and the University of Saskatchewan is working on an IT Ready Program. The Central iSchool has developed several TEL preparation modules. Students in academic preparation typically need more individual tutoring and support than do most learners. It is important to determine the students' level of readiness for TEL courses and coordinate and adapt existing TEL preparation courses to address their specific needs.
Key Elements	The type and level of technological skill needed might vary from course to course. A generic online questionnaire at a central Web site could help students determine whether they have the technological skill needed for online learning in general. Students lacking skill in one or more areas could be routed to a module or other forms of assistance focusing on the needed skill. Specific course-related skills should be incorporated into the course.
Next Steps	• Create a generic online questionnaire that enables students to assess their technological skills for online learning and place it on the Campus Saskatchewan Web site. Include links to courses or support provided to develop the needed skills. • Ensure that TEL preparation and technological literacy courses being developed can be broken into small modules to address specific skills.

Priority 3.3:	Provide academic preparation students with information about TEL courses and programs available to them.
Rationale	Saskatchewan's post-secondary education institutions and other Canadian institutions offer a variety of TEL courses and services for academic preparation. Several public and for-profit agencies provide GED preparation online. However, there is no central listing of these online courses and services.
Key Elements	An online catalogue of academic preparation "Courses and Programs", linking to related "GED Preparation" services, would assist adults in finding the courses and services they need to prepare for further studies. This could also provide links to other Web sites for more detailed information. A catalogue could be provided as part of an "Academic Preparation" section within the Campus Saskatchewan Web, recommended in Priority 2.
Next Steps	• Add to the Campus Saskatchewan Web site, a catalogue of online academic preparation courses and GED preparation courses available at Saskatchewan post-secondary education institutions and in other Canadian institutions.

4. Professional Development and Support

Instructors need specialized training, peer support and technical support in order to use technology effectively in teaching. The universities and SIAST are working together to develop and offer a variety of professional development and support services for faculty and instructional staff who are developing and offering online courses. However, instructors who are working with students in academic preparation often have unique concerns that are not always addressed in seminars and training events provided for faculty in mainstream programs.

This section describes one priority relating to professional development and support for adult educators who are using technology in their work with academic preparation students.

Priority 4.1:	Provide online support to adult educators who are using technology for academic preparation courses.
Rationale	Academic preparation instructors, like all other adult educators, are looking to use technology to maximum advantage in providing teaching and support for the students they serve. However, academic preparation professionals are typically part-time and/or not located in any one institution, and so do not have ready access to professional development opportunities. While some online services are available for literacy instructors, such as the National Adult Literacy Database (NALD) web site, few are relevant to the specific needs of academic preparation, and these are difficult to locate.
Key Elements	Academic preparation instructors need opportunities for professional development and association specifically to address their day-to-day challenges and concerns. An "Academic Preparation" section on the Campus Saskatchewan Web site with a "Professional Development" branch could provide opportunities for academic preparation instructors to learn to use technology effectively through online resources and discussions with peers. It could include elements such as: • Lists of online resources and links to Web sites for instructors, counsellors, tutors, administrators and others serving students in academic preparation; • Offers online courses (credit or non-credit) for instructors; and • Chat rooms, listservs, or discussion groups for instructors, counsellors and others to share ideas and solve problems together.
Next Steps	• Consult practitioners to determine what type of online professional development and support would be most useful to them. • Identify online resources relevant to instructors, tutors, counsellors and others working with adults in academic preparation, and consolidate these in resources in related categories in the Campus Saskatchewan Web site. • Create a chat room, listserv, or discussion forum within the Campus Saskatchewan Web site to support an online community of practitioners working with adults in academic preparation.

5. Coordination of Future Work To Implement Priorities

Academic preparation programs offered by the universities and SIAST are designed to assist students in preparing for entry into their degree, diploma and certificate credit programs. SIAST also has a mandate to offer Basic Education and Adult 12 programs in urban centres across the province. The Regional Colleges and Aboriginal institutions offer Basic Education, Adult 12 and other academic preparation programs to students in their constituencies. All post-secondary institutions would benefit significantly from a more uniform and coordinated approach to academic preparation, through effective use of technology.

In order to serve academic preparation students effectively across the province, the program providers need to be able to coordinate and share development and use of TEL courses. They also need to be able to share facilities, academic and technical support services, and computers for instructors and learners at different locations and times. Agreements and common operational procedures are needed in order to facilitate coordination and cooperation.

Three priorities for coordination of future work to implement priorities are described below.

Priority 5.1:	Provide technology enhanced academic preparation within a framework that enables cooperation across the province.
Rationale	An effective provincially coordinated TEL academic preparation program needs to address all aspects of program delivery, including content development, student support, and professional support for instructors. This requires agreements and common procedures among participating institutions.
Key Elements	A framework needs to enable agreements and mechanisms for the following: • **Coordination and Sharing of Content Development** – to ensure that content reflects common quality standards and is available for use by all participating institutions, using their own instructors or brokering services. Institutions need to be able to build on existing work. Institutional policies need to allow for sharing of costs for maintenance and upgrading of content, software and copyright licensing, and a learning objects databank. This also includes sharing of funds based on courses and services provided. • **Student Support** – to ensure support for adults in academic preparation that is not provided as part of a course, such a help desk, tutors, counsellors, access to computers and connectivity, and student financial aid. This is especially important for students in online academic preparation courses who may not be formally attached to a single institution, or who may be registered in one institution but taking a course from another. • **Professional Development and Support for Instructors –** to ensure that instructors have access to appropriate technology hardware and software, course development support and teaching resources, as well as opportunities to learn how to use technology effectively and share expertise with their peers through online forums.
Next Steps	• Identify options for coordinating TEL in academic preparation across the province, outlining roles and responsibilities of partner institutions.

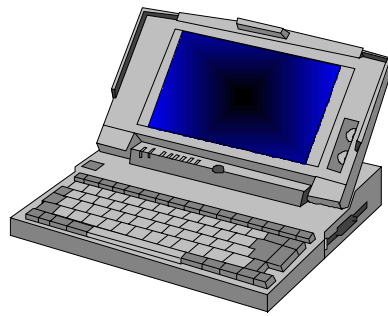| Priority 5.2:	Develop a model for funding that fosters greater coordination and sharing of resources and support for academic preparation among program providers.
Rationale	The post-secondary education institutions rely on provincial government grants, tuition fees, or other resources to support their TEL initiatives. New technologies provide greater opportunities for sharing course materials and databanks and for brokering courses and services. Financial arrangements need to reflect and enable greater inter-institutional sharing of courses and services.
Key Elements	A funding model for TEL in academic preparation needs to provide for: • Consistency in pricing for courses and support services across the system – A common fee structure for similar types of courses would allow institutions to identify costs uniformly and avoid competition. • Distribution of tuition among institutions – A common tuition or revenue sharing formula would allow institutions to split funding or brokerage fees based on their role in teaching courses and providing support for students. • Sharing of costs for use of resources created and owned by other institutions. Some funding models are already in place or being tested. For example, SIAST has adopted a cost/pricing model for off-campus extension courses. North West Regional College is testing three models as part of the Adult 12 Math A30 pilot: tuition-based/cost-recovery; grants-based; and delivery-broker partnerships. The results of this pilot, to be completed in 2003-04, will need to be reviewed by the post-secondary institutions collectively. A funding model for TEL in academic preparation needs to allow for sharing across both the K-12 and the post-secondary systems. For example, adult learners may wish to take high school courses now offered online by K-12 institutions such as the Saskatchewan Government Correspondence School or Saskatoon Catholic Cyber School, but they may be looking to the post-secondary education institutions to provide support for their online studies.
Next Steps	• Articulate and validate the issues related to costing/pricing and funding. • Review funding models and recommend a provincial cost/pricing model that works for both K-12 and post-secondary institutions.

Priority 5.3:	Establish an ongoing TEL Academic Preparation Subcommittee.
Rationale	• Several of the priorities described in this section require that action be initiated, guidelines be developed, decisions be taken. An ongoing decision-making body is needed to oversee the development of technology enhanced academic preparation and to update priorities. This body could be the existing TEL Academic Preparation Subcommittee or a new committee with representatives from Campus Saskatchewan's partner institutions.

Priority 5.3:	Establish an ongoing TEL Academic Preparation Subcommittee.
Key Elements	The TEL Academic Preparation Subcommittee's mandate is currently: • to develop and oversee a strategy and an action plan for applying technology in academic preparation programs; and • to provide ongoing leadership in implementing the action plan. This document addresses the first component of the present mandate. The second component allows for the continuation of the Subcommittee to oversee future work and could be expanded to provide more specific direction. The new mandate of the TEL Academic Preparation Subcommittee should be: • to provide a forum for institutions to share ideas and plan for the future; • to make recommendations for development of TEL materials or courses for academic preparation; • to review proposals for TEL content development that are submitted by Saskatchewan's post-secondary education institutions; • to review priorities on an ongoing basis and to revise as needed; and • to make recommendations about delivery and support of technology enhanced academic preparation.
Next Steps	• Establish a mandate for the continuing work of this subcommittee to oversee the development of technology enhanced academic preparation. • Ask the post-secondary education institutions to confirm their present representatives on the TEL Academic Preparation Subcommittee or appoint new representatives to the ongoing subcommittee.

Phase 4
Action Plan

Phase 4 – Action Plan

The outcome of this project is a strategy that identifies system-wide priorities for technology enhanced academic preparation and an action plan specifying how these priorities will be achieved. Phase 4 provides an Action Plan that outlines steps to be taken to address each of the five priorities identified in Phase 3 and makes recommendations for how these actions can be implemented.

The following template was used for the action plan.

Figure 18: Template for TEL Academic Preparation Action Plan

Action	
Actions to be taken	
Lead person/ organization	
Partners	
Resources needed (funds, facilities, equipment, people)	
Timeline	

1. Courses

Courses are designed to teach prescribed knowledge and skills, using content, assignments and review or self-test exercises. Following are three proposed actions to implement the course priorities identified in Phase 3 for development of technology enhanced academic preparation.

Action 1.1:	Establish criteria to assess existing courses and to guide development of new courses for academic preparation.
Actions to be taken	• Establish a group to develop criteria that can be used to assess the availability and applicability of existing courses and to guide development of new courses. This group could be relatively small (5-7 people) and consist of instructional designers, instructors, and others who are knowledgeable about TEL for adult learners. Members should represent Saskatchewan's post-secondary education institutions. A member of the TEL Academic Preparation Subcommittee could lead this group. • Provide this group with appropriate resources. The task will involve researching, compiling and summarizing criteria that already exist; consulting with instructors or faculty, TEL support staff, and other stakeholders, and drafting a set of criteria that is acceptable to all partners. A contract researcher/writer will be needed. Suggested sources for developing criteria are *The Canadian Recommended E-learning Guidelines* (Barker, 2002), and other guidelines published by Cartwright et al, 1999; EvNet; Institute for Higher Education Policy, 2000; MERLOT, 2000; Stevens, Jolliffe & Ritter, 2001; and Useit.com. In addition, Saskatchewan Learning has developed some standards for teachers who are developing courses for Central iSchool.
Lead person/ organization	TEL Academic Preparation Subcommittee (see Action 5): • Establish a group to develop criteria; • Appoint one of its members to chair the criteria development group. Saskatchewan Learning: • Provide resources needed for development of criteria; • Oversee the day-to-day work of the person contracted to research and write the criteria.
Partners	Saskatchewan's publicly-funded post-secondary education institutions: • Release appropriate staff as needed to participate in the group that is developing criteria; • Provide information to the researcher/writer as needed. Offer feedback on drafts of the criteria.

Action 1.1:	**Establish criteria to assess existing courses and to guide development of new courses for academic preparation.** (Continued)
Resources needed (funds, facilities, equipment, people)	Direct costs (assumed by Saskatchewan Learning) include: • Professional fees and travel costs for researcher/writer. Indirect costs (assumed by post-secondary institutions) include: • Staff time; • Travel costs for staff; and • Meeting expenses such as lunches and facilities.
Timeline	• Formation of group to develop criteria – Fall 2002 • Research, writing, feedback – October 2002 to March 2003 • Criteria completed – April 2003

Action 1.2: Offer a complete Adult 12 program and related bridging courses online.	
Actions to be taken	• Confirm subject area priorities for online academic preparation starting in 2002-03. Tentative priorities are English Language Arts, Math and Physics 20 and 30 (separate courses, not sequential). • Prepare a request for proposals that outlines the process for developing Adult 12 courses and related bridging courses for academic preparation. • Include academic preparation courses in the annual review of provincial funding for TEL content development.
Lead person/ organization	TEL Academic Preparation Subcommittee: • Confirm subject area priorities for technology enhanced academic preparation courses in 2002-03. • Prepare a request for proposals that outlines the process for developing Adult 12 courses and related bridging courses. Saskatchewan Learning and Campus Saskatchewan partners: • Include academic preparation in the 2002-03 allocations for TEL content development and in the budget for TEL content development in 2003-04.
Partners	Saskatchewan's post-secondary institutions: • Submit proposals for course development in designated subject areas.
Resources needed (funds, facilities, equipment, people)	Direct costs (assumed by Saskatchewan Learning) include: • Funding for TEL content development work and related production and evaluation costs; Indirect costs (assumed by the post-secondary institutions) include: • Administrators' time • Use of facilities and equipment
Timeline	• Confirmation of subject priorities – 2002-03 • Development of detailed request for proposals – 2002-03 • Submission of proposals to develop courses in designated subjects/areas – 2002-03 • Development work begins – 2003-04

Action 1.3:	Develop policies, protocols and procedures that enable and support sharing of resources.
Actions to be taken	• Facilitate an agreement among institutions that allows for access to academic preparation course materials developed with public funds in Saskatchewan. This agreement might include publicly funded K-12 institutions as well as post-secondary education institutions. • Establish a databank of learning objects containing a variety of online components such as written descriptions, maps, math equations, charts, digital images, video clips, review questions, computer simulations, tutorials, etc. Databanks of learning objects can be made available for use in different ways, in different courses, and at different grade and age levels. The learning objects stored in a databank should reflect technical and quality standards acceptable to all members and conform to national standards. Background research relating to policies, protocols and procedures to facilitate sharing of resources may involve consultation with the institutions and legal experts. A contracted researcher/writer may be needed.
Lead person/ organization	TEL Academic Preparation Subcommittee: • Oversee work relating to development of policies, protocols and procedures to facilitate sharing of resources.
Partners	Saskatchewan K-12 and post-secondary education institutions: • Identify issues, suggest options, offer feedback, and develop consensus.
Resources needed (funds, facilities, equipment, people)	Direct costs (assumed by Saskatchewan Learning) include: • Professional fees and travel expenses for a researcher/writer Indirect costs (assumed by the post-secondary education institutions) include: • Staff time • Licensing fees • Hardware and software costs
Timeline	• Action begins – September 2002

2. Learning Resources

Academic preparation students need access to supplementary material for use on their own or in study groups to enrich, expand on or complement their courses. As with the courses, other learning resources need to reflect common standards for quality, integration and coordination and be assessed for their suitability for adult learners. One action is recommended below.

Action 2.1:	Provide academic preparation students with access to online learning resources.
Actions to be taken	• Develop guidelines that can be used to assess the quality and appropriateness of course-specific learning resources. These should be coordinated with the guidelines recommended in Priority 1.1. • Ensure that all technology enhanced academic preparation courses are resource-rich with links to suitable course-specific resources. • Add an "Academic Preparation" section to the Campus Saskatchewan Web site and provide links to existing lists of online reference materials.
Lead person/ organization	TEL Academic Preparation Subcommittee and Saskatchewan Learning; • Develop guidelines that can be used to assess the quality and appropriateness of specific learning resources (see Priority and Action 1.1). Instructional designers and the institutions they work for: • Ensure that all TEL courses for academic preparation are resource-rich. Campus Saskatchewan partners: • Add links to online reference materials to an "Academic Preparation" section of the Campus Saskatchewan Web site.
Partners	Saskatchewan's publicly-funded post-secondary education institutions: • Support the development of guidelines to evaluate learning resources. • Share information among institutions and Campus Saskatchewan partners about good sources of online learning resources and reference materials.
Resources needed (funds, facilities, equipment, people)	• Develop guidelines to assess course-specific learning resources – See Priority and Action 1.1 for more information about costs. • Ensure that all technology enhanced academic preparation courses are resource rich – No direct cost. Indirect costs are primarily staff time. • Add links to lists of online reference materials to the Campus Saskatchewan Web site – No direct cost. Indirect costs are primarily staff time.
Timeline	• Develop guidelines to assess course-specific learning resources – See Priority and Action 1.1 for timelines. • Ensure that all technology enhanced academic preparation courses are resource rich – Ongoing and continuous. • Add links to lists of online reference materials to the Campus Saskatchewan Web site – Fall 2002.

3. Student Support

Student support refers to a broad range of services that enable people to succeed in their studies. Support services required for academic preparation may be built into courses or coordinated with the services provided by institutions and supporting agencies. Three priorities are recommended below to address the priorities for student support identified in Phase 3.

Action 3.1:	Build student support into every technology enhanced academic preparation course.
Action to be taken	• Assist students in assessing their level of academic and technological readiness for each online course and provide the academic and technical support required as part of the course. • Counsel students about other support services available and refer them to appropriate training necessary to ensure their readiness prior to enrolment.
Lead person/ organization	Institutions that deliver courses: • Provide for students to assess their level of academic and technological readiness for each online course and provide the required support either as part of the course or through referrals to appropriate agencies.
Partners	All Saskatchewan education institutions offering technology enhanced academic preparation courses: • Coordinate efforts in order to provide support and counselling in the most effective way possible. • Share information and ideas about various ways that student support and counselling can be delivered.
Resources needed (funds, facilities, equipment, people)	• Direct costs – Not known at this time – may include infrastructure such as computer hardware. • Indirect costs – Staff time.
Timeline	• Ongoing and continual.

Action 3.2:	Ensure that academic preparation students have the skills they need to succeed with technology enhanced learning.
Action to be taken	• Create a generic online questionnaire that enables students to assess their technological skills for online learning and place it on the Campus Saskatchewan Web site. Include links to courses or support provided to develop the needed skills. • Ensure that TEL preparation and technological literacy courses being developed can be broken into small modules to address specific skills.
Lead person/ organization	Institutions developing TEL preparation and technological literacy courses: • Design courses so that they can be broken down into small modules addressing specific skills. Campus Saskatchewan partners: • Create a generic online questionnaire to enable students to assess their technological skills.
Partners	All institutions designing or providing technology enhanced academic preparation courses: • Direct students toward appropriate modules and courses as required to enhance technological literacy skills.
Resources needed (funds, facilities, equipment, people)	The primary resource needed is staff time, both for the Campus Saskatchewan web site and at institutions developing and delivering courses.
Timeline	Late Fall 2002, early Winter 2003.

Action 3.3:	Provide academic preparation students with information about TEL courses and programs available to them.
Action to be taken	• Add to the Campus Saskatchewan Web-site a catalogue of online academic preparation and GED preparation courses available at Saskatchewan post-secondary education institutions and in other Canadian institutions.
Lead person/ organization	Campus Saskatchewan partners: • Add the catalogue of online academic preparation courses and GED preparation courses to the "Academic Preparation" branch of the Web site.
Partners	All of Saskatchewan's post-secondary education institutions: • Share information about appropriate courses with Campus Saskatchewan partners.
Resources needed (funds, facilities, equipment, people)	• No direct costs. • Indirect costs – Staff time.
Timeline	Fall 2002.

4. Professional Development and Support

Instructors need specialized training, peer support and technical support in order to use technology effectively in teaching. Instructors who are working with students in academic preparation often have unique concerns that are not always addressed in seminars and training events provided for faculty in mainstream programs.

This section describes one action to address the priority identified in Phase 3 for professional development and support for adult educators using technology in academic preparation courses.

Action 4.1:	Provide online support to adult educators who are using technology for academic preparation courses.
Action to be taken	• Consult practitioners to determine what type of online professional development and support would be most useful to them. • Identify online resources relevant to instructors, tutors, counsellors and others working with adults in academic preparation, and consolidate these in resources in related categories in the Campus Saskatchewan Web site. • Create a chat room, listserv, or discussion forum within the Campus Saskatchewan Web site to support an online community of practitioners working with adults in academic preparation.
Lead person/ organization	Post-Secondary education institutions Campus Saskatchewan partners: • Assume short-term responsibility for determining the professional development needs of academic preparation practitioners who are using technology in their teaching; and • Adapt existing professional development services and support to address the identified needs and identify opportunities and materials available online. Academic preparation practitioners: • Assume long-term responsibility for ongoing dialogue with institutions and peers in order to identify professional development needs and opportunities to address these online.
Partners	All institutions and individuals who have a stake in academic preparation.
Resources needed (funds, facilities, equipment, people)	• Direct start-up costs – Refer to Priority and Action 5.1. • Long-term indirect costs – The time of academic preparation practitioners and Campus Saskatchewan partners.
Timeline	Begin work – Fall 2002.

5. Coordination of Future Work To Implement Priorities

Academic preparation programs offered by the universities and SIAST are designed to assist students in preparing for entry into degree, diploma and certificate credit programs. SIAST, the Regional Colleges, DTI and SIIT also provide Basic Education, Adult 12, and other academic preparation programs to students in their constituencies. A coordinated approach is needed in order to use technology effectively for academic preparation across the province. Agreements and common operational procedures are needed in order to facilitate cooperation.

Three actions are recommended below to address priorities for coordination of future work.

Action 5.1:	Provide technology enhanced academic preparation within a framework that enables cooperation across the province.
Actions to be taken	• Identify options for coordinating TEL in academic preparation across the province, outlining roles and responsibilities of partner institutions.
Lead person/ organization	TEL Academic Preparation Subcommittee: • Articulate the framework and describe all of its dimensions in detail.
Partners	All institutions designing and delivering academic preparation courses: • Provide feedback on and endorse the framework; • Support the development of agreements and common procedures to facilitate coordination and cooperation in sharing resources for content development and support.
Resources needed (funds, facilities, equipment, people)	• Direct costs – Unknown at this time – may require a writer/researcher. • Indirect costs – Staff time and travel expenses.
Timeline	• Work begins – Fall 2002. • Work completed – Summer 2003.

| Action 5.2:	Develop a model for funding that fosters greater coordination and sharing of resources and support for academic preparation among program providers.
Actions to be taken	• Articulate and validate the issues related to costing/pricing and funding. • Review funding models and recommend a provincial approach to cost/pricing that works for both K-12 and post-secondary institutions.
Lead person/ organization	TEL Academic Preparation Subcommittee: • Develop the funding model.

Action 5.2:	Develop a model for funding that fosters greater coordination and sharing of resources and support for academic preparation among program providers. (Continued)
Partners	All institutions designing and delivering academic preparation courses: • Offer ideas and provide feedback. • Endorse the model and implement measures as necessary to implement it.
Resources needed (funds, facilities, equipment, people)	• Direct costs – Unknown at this time – may require a writer/researcher. • Indirect costs – Staff time and travel expenses.
Timeline	• Work begins – Fall 2002. • Work completed – 2003-04.

Action 5.3: Establish an ongoing TEL Academic Preparation Subcommittee.	
Actions to be taken	• Establish a mandate for the continuing work of this subcommittee to oversee the development of technology enhanced academic preparation. • Ask the post-secondary education institutions to confirm their present representatives on the TEL Academic Preparation Subcommittee or appoint new representatives to the ongoing subcommittee.
Lead person/ organization	Campus Saskatchewan Management Board (former TEL Steering Committee) • Confirm the mandate of the TEL Academic Preparation Subcommittee to oversee ongoing development of technology enhanced academic preparation.
Partners	Saskatchewan's publicly-funded post-secondary education institutions: • Confirm their present representatives on the Subcommittee or appoint new representatives to the ongoing committee.
Resources needed (funds, facilities, equipment, people)	No direct costs. Indirect costs include: • Staff time; • Travel expenses; and • Meeting expenses such as lunches and use of meeting rooms.
Timeline	• Confirm ongoing subcommittee and confirm/appoint members – September 2002 • Ongoing TEL Academic Preparation Subcommittee fully operational – October 2002

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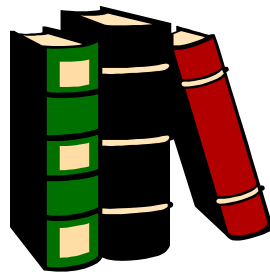
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