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RECOMMENDATIONS FOR INTEGRATING TECHNOLOGY

Technology is a part of everyday life in Alberta. Using a bank machine, buying transit tickets, using a computer and operating a microwave all require technology skills. Technology skills are key to success in many Albertan contexts, such as adult education, workplace and community life. Computer literacy skills are linked to higher employment and earning rates (Crockett 2002; Veenhof, Clermont & Sciadas 2005). Human Resources and Social Development Canada lists computer use as one of nine Essential Skills, those “skills that people need for work, learning and life” (Conference Board of Canada, 2000; HRSDC).

Effective ESL literacy programs provide instruction that helps develop learners’ technology skills and computer skills.

Depending on their background, learners come to ESL literacy programs with different degrees of proficiency and comfort in technology and computer use. Some learners may be excited to experiment with technology that is new to them, while others may be quite hesitant. The classroom should provide a safe environment where learners can ask questions and practice using different technologies.

Technology and computer skills do not necessarily correlate with literacy skills. Two learners at the same ESL Literacy phase may have very different computer skills. For example, a Phase I ESL literacy class may include:

- a learner who has recently arrived from a small rural village or a refugee camp. He has never used a computer before. He doesn’t understand how or why to use debit and bank machines. He knows how to use the basic functions on his cell phone.

- a learner who has been living and working in Alberta for more than a year. She has very limited keyboarding and software skills, though she is able to use a mouse to access familiar items on the internet (e.g. to listen to news from her country). She frequently uses debit and bank machines, but has trouble with phone systems.

This appendix to the ESL Literacy Curriculum Framework outlines key programming and instructional principles for integrating technology and computer skills in ESL literacy programs.
It also provides a sample progression of computer skills from one ESL literacy program at Bow Valley College and suggests resources for instructors and online resources for learners.

In this section, we separate computer skills and technology skills (e.g. bank machines, phone systems, vending machines, household appliances). Computer skills differ from technology skills in that they require a developmental approach. In order to be able to do basic word processing, emailing or internet searching, learners need to develop an extensive set of skills; many of these skills build upon others.

The purpose of integrating technology and computer skill development into an ESL literacy program is to expand learners’ proficiency and familiarity with technology and computers. When technology and computer skill development is integrated, learners become more comfortable and their degree of independence in these areas increases.

**In this section, you will find:**

- program considerations for integrating technology and computer skills
- classroom considerations for integrating technology and computer skills
- a sample progression of computer skills
- helpful resources for learners
- helpful resources for your program
PROGRAM CONSIDERATIONS: INTEGRATING TECHNOLOGY AND COMPUTER SKILLS

In this section, we highlight several considerations from a programming perspective. These are intended to guide program administrators in the process of incorporating technology and computer skills into your adult ESL literacy curriculum.

Align Approach with Program Purpose and Goals

Learners’ technology and computer skills will vary. You will need to identify learners’ skills and gaps, and then use this information to prioritize and select the skill areas that will be included in the curriculum. In Stage 1: Understand Needs and Stage 2: Determine Focus of this framework, program planners are encouraged to thoroughly investigate learners’ needs in order to define their purpose, goals and approach. These steps then guide the rest of the curriculum development process.

In the case of computer and technology skills, ask the following questions:

- What is this program preparing learners for?
- What technology skills will learners need when they finish the program?

When these have been clarified, it will be possible to create learning outcomes for technology and computer skills that are linked to your program’s purpose and learners’ needs. A sample of a developmental sequence of computer skills is provided at the end of this section.

Next, determine your approach. There are several options for integrating technology and computer skill development into your program. Determine your approach based on:

- learners’ needs
- your program purpose and goals
- what is feasible, given the context of your program

Three common approaches are outlined in this section:

- integrate technology into classroom instruction
- provide multi-level computer classes
- provide single-level computer classes
Integrate Technology and Classroom Instruction

In this approach, technology skills are taught in the classroom and are connected with thematic teaching. For example, in the thematic unit “Getting around Calgary”, one class learned how to operate transit ticket vending machines. In another unit on “Healthy Eating”, learners practiced using various kitchen appliances (e.g. blender, microwave, slow cooker) to help them cook nutritious food at home.

Provide Multi-level Computer Classes

In this approach, learners are grouped according to language and literacy level. Most commonly, a class of learners has designated instructional time in a computer lab. Learners often have different skill and comfort levels with computers. The advantage in this approach is that learners have similar language levels, allowing instructors to communicate with learners more consistently. The challenge in this approach is that learners will have very different needs as they develop their computer skills. Beginning learners often need individual assistance, and more advanced learners will require more challenge and different kinds of support. Managing the demands of learners with varying levels of computer skills can be facilitated by providing small class sizes, providing teaching assistants and drawing on volunteer resources.

Provide Single-level Computer Classes

In this approach, learners are grouped according to their technology and computer skill levels. Learners leave their regular class (grouped by language and literacy skills) for focused instruction in computer/technology skills. In this computer/technology class, learners have varying language and literacy levels, but similar computer and technology skills. This allows instructors to focus on systematically building the computer and technology skills of everyone in the class. The challenge in this context is finding ways to communicate information and ideas with learners that have a range of language and literacy levels. In cases where learners share first languages, it is possible to have learners translate and instruct one another.

Integrate Technology & Computer Skill Training Throughout the Program

The development of both technology and computer skills requires explicit instruction, support, extensive practice and opportunities to transfer learning. Learners will need multiple opportunities to practice the technology and computer skills that they are developing. Effective adult ESL literacy programs introduce technology and computer skills at the lowest levels, with appropriate amounts of support. When the skills are introduced early in the program, it is possible to recycle and spiral the skills throughout the program. This provides learners with the greatest chance of increasing their proficiency and independence.
Target Assessment

Learners will develop and use language and literacy skills as they increase their computer and technology skills. It is important to maintain a focus on the technological skills when assessing computer and technology learning outcomes. Ensure that assessment tasks do not involve new vocabulary, grammar or formatting. Effective assessment in this area focuses on what learners can do with technology, not with language.

In the beginning stages of computer skill development the focus is on increasing learners’ familiarity and comfort level with computers. As learners progress, the focus is on increasing learners’ proficiency and independence with computers. When assessing computer skill development, capture learners’ growth in these areas, considering the focus of each stage.
CLASSROOM CONSIDERATIONS: INTEGRATING TECHNOLOGY

In this section, we highlight several considerations from an instructional perspective. These are intended to guide adult ESL literacy instructors in the process of incorporating technology and computer skills into their classes.

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### Build on Learners’ Strengths

As in all aspects of ESL literacy instruction, the most effective instruction builds on learners’ existing knowledge, skills and preferred learning styles. Many learners have knowledge of and experience with various forms of technology (including computers). Provide learners with opportunities to share their knowledge with others (in their first language when appropriate). This validates learners’ experience and provides them with opportunities to share their expertise. If your learners are highly kinesthetic or tactile learners, opportunities for hands-on practice with technology will be particularly important. Bring the technology to class or take learners to places where they can practice.

### Build Computer Skills Systematically

Developing computer skills is a process. In order to be able to send an email, create a document or use language-learning software, learners will need to develop foundational computer skills. These include turning on the computer and monitor, selecting items with a mouse, using a keyboard and moving a cursor. It is important not to overwhelm learners with tasks that assume these skills, if learners have not had the time to develop them. Provide learners with simple, meaningful tasks that help them build these foundational skills. The Computer Skill Development resources for learners listed at the end of this section provide learners with meaningful tasks that build basic computer skills. A sample developmental sequence of computer skills is also provided at the end of this section.

### Model Technology and Computer Use

Using familiar and new technology in the classroom provides learners with a model of learning and applying technological skills. Learners often find it helpful to know that their instructor is constantly learning and applying new skills as well. Make computer skills a regular part of the learning process. Use computers to help deliver material in the class (video clips, images, etc.) and as a tool for learners to improve their language skills and source information. The more learners are exposed to computers, the more comfortable they will feel using them.
Recycle and Practice Extensively

Learners will need time to learn, re-learn and practice computer skills. Just as with literacy and language skills, recycling of skills is necessary. Many learners will not have the opportunity to use computers outside of the learning environment. They will need opportunities to practice before they feel confident with their skills. Learners will benefit from a re-introduction of skills practiced previously at different points throughout their learning.

Increase Technology Skills Through Thematic Instruction

Technology and computer skills will lend themselves to thematic content. For example, in the following themes, technology and computer skill development are clearly linked.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Technology / Computer Skill Development</th>
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<tbody>
<tr>
<td>Going Shopping</td>
<td>Using a debit machine</td>
</tr>
<tr>
<td>Getting Around Calgary</td>
<td>Using a transit ticket machine</td>
</tr>
<tr>
<td>Looking for Work</td>
<td>Creating a basic resume, using a template</td>
</tr>
<tr>
<td>Renting a Place</td>
<td>Conducting an online search for rental housing</td>
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Whenever possible, provide learners with the opportunity to practice with technology and computer skills that they may use when living in Alberta.
Assess Technology Skills, not Language

When you assess learning outcomes in technology and computer skills, ensure that the assessment doesn’t include new elements of language or literacy. Including new vocabulary, grammar or formats requires learners to devote cognitive resources to interpreting these. This can detract from how well learners demonstrate what they can do with technology.

Assessment of technology and computer skills can be achieved through class observations, anecdotal notes, and specifically designed assessment tasks. As learners will be at different stages in their computer skill development, their proficiency should not be evaluated in order to determine specific ESL literacy levels. The purpose of assessment of technology and computer skills is to document progress and determine next steps for learning.

Encourage Experimentation and Celebrate Success

Learners with little or no knowledge of the technology used in everyday interactions in Alberta will need to practice and make mistakes in a safe learning environment. Whenever possible, provide opportunities for learners to experiment with different types of technology in the classroom. Focus on the learning opportunities that arise from making mistakes. When working with computers in class, encourage risk-taking and celebrate small accomplishments.

Expect Learners’ Technology Skills to Vary within Literacy Levels

Do not expect learners within a particular ESL literacy level to be homogeneous in their level of technology or computer skills. You may find it helpful to group learners by ability when working with computers. Depending on the range of abilities among your learners, you may need to select separate programs for them to work on. Often, you can start the learners off in a program or on a website and those with more skills will simply move along more quickly than those who need help. If volunteers are available, learners with limited computer skills can benefit greatly from one-on-one assistance. Another strategy is to set aside part of the class for learners to work together. Pair more proficient learners with those who have less developed computer skills so that learners can help each other.
SAMPLE: COMPUTER SKILL DEVELOPMENT

This sample is based on the technology component used in the Computer-Enhanced ESL Literacy program at Bow Valley College. This part-time ESL literacy program provides learners with an opportunity to develop language, literacy and computer skills. In this program, computer skills are taught explicitly, with computer lab time provided during each class.

Computer skills do not always correspond with language and literacy levels. The sample provided in this framework outlines a progression of computer skills, across three basic stages: familiarization, development, and application. This chart provides an overview of these three stages and is followed by detailed learning outcomes for each stage.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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| Familiarization | Learners are being introduced to computers. Their keyboard/mouse, software and internet skills are not yet developed. This stage includes:  
• basic computer skills  
• basic software skills  
• introduction to internet skills  
Focus: Increasing learners’ comfort level with/awareness of computers                                                                                                                                                                                                                           |
| Development     | Learners are becoming more confident when using computers. They are developing specific skills to manage computers and software. This stage includes:  
• computer/software skills  
• internet skills  
• introduction to email  
Focus: Increasing learners’ basic computer skill proficiencies                                                                                                                                                                                                                                  |
| Application     | Learners are beginning to use their computer skills to manage information. They are building more sophisticated skills to use computers more effectively and independently. This stage includes:  
• software skills  
• internet skills  
• email skills  
Focus: Increasing learners’ independence in using computers                                                                                                                                                                                                                                   |
### Familiarization Stage

1. **Basic Computer Skills:**
   - name the basic parts of a computer: mouse, monitor, keyboard and earphones
   - identify if computer is on or off
   - control the mouse: move pointer, left/right click
   - distinguish between numbers and letters on keyboard

   **Internet:**
   - identify Internet browser with assistance
   - open a literacy activity website by clicking on a link with assistance

   **Software/Program Skills:**
   - identify software/program icon on desktop with assistance
   - click on icon with assistance
   - type letters in spelling program with assistance
   - copy by typing one word answers in computer activities with assistance
   - close and exit software program with assistance

2. **Basic Computer Skills:**
   - name the basic parts of a computer: printer, hard drive, screen, desktop
   - turn computer and monitor on/off with assistance
   - adjust monitor and keyboard for comfort with assistance
   - control mouse: single/double click, drag and drop
   - adjust position of mouse on desk, hold correctly with assistance
   - identify specific letters and numbers of keyboard

   **Internet:**
   - open the Internet using a familiar browser with assistance in identifying the icon
   - click on a link with assistance
   - click next/back in a website to move between pages with assistance

   **Software/Program Skills:**
   - open teacher selected software/program by clicking on desktop icon with assistance
   - navigate instructor-selected program with assistance
   - type letters and numbers
   - type one word answers in computer activities with assistance
   - close and exit software/program following a demonstration

3. **Basic Computer Skills:**
   - name the parts of a computer: cd, memory stick, microphone
   - turn computer and monitor on/off
   - adjust computer and monitor:
   - control mouse: adjust mouse on desk, hold comfortably
   - use basic keys on keyboard: letters, numbers, enter, backspace

   **Internet:**
   - open and close Internet browser with assistance
   - click on a familiar link to open a website
   - navigate through pages (forward and back) following a teacher demonstration

   **Software/Program Skills:**
   - open software/program by clicking on desktop icon
   - navigate software/program
   - type letters in spelling program
   - type one word answers
   - close and exit software/program
Development Stage

1

Computer/Software Skills:
- open and close a document
- use backspace, enter and space bar keys
- scroll using up/down arrows
- copy relevant information by typing: date, name, address, phone number
- type a simple sentence with assistance

Internet:
- identify a web address with assistance
- open internet using familiar browser
- locate address bar in internet
- type a web address by copying with assistance
- type short answers on ESL Internet site with assistance

Email:
- identify an email address with assistance
- identify headings to be filled in for an email message
- open and read emails using an in-house email system with assistance
- copy email ID and password
- copy and type a simple 1-2 line email

2

Computer/Software Skills:
- retrieve, open and close a document
- scroll using up/down arrows and/or scroll bar
- type information: date, name, address, phone number
- use capitals, symbols and tab key
- type 1-2 sentences with few errors

Internet:
- type a web address by copying
- click on link
- type short answers on ESL Internet site with assistance
- manage pop-up windows with assistance

Email:
- open and read emails
- type personal email address with assistance
- log in and out of email account with assistance
- fill in headings appropriately in a new email
- copy and type email ID and password with assistance
- copy and type 2-4 line email

3

Computer/Software Skills:
- open, close and print a document
- scroll using up/down arrows, scroll bar and mouse button
- type relevant personal information
- use capitals, symbols, tab and punctuation appropriately
- type at sentence level with correct spacing, capitalization and punctuation

Internet:
- search for information on a specific site with assistance
- use back and forward commands
- type a web address by copying
- type short answers on ESL internet site
- manage pop-up windows

Email:
- open and read old and new emails unassisted
- type personal email address
- type email ID and password
- log in and out of email account
- copy and type 3-5 line email
Application Stage

1

Software Skills:
- open, save, close and print a document with assistance
- move insertion point using mouse or arrow keys
- highlight text
- use spell check
- use capitals and punctuation with some mistakes and begin to self-correct
- type a paragraph with assistance

Internet:
- identify different browsers used to open Internet: Netscape, Explorer, Firefox, etc.
- begin internet search with assistance
- type web address in URL address space with assistance
- register on website with assistance

Email:
- open and read and reply to emails
- delete emails with assistance
- add an attachment with assistance
- type an unfamiliar email address with assistance
- type email ID and password unassisted
- type a short email message with greeting, message and closing with assistance

2

Software Skills:
- open, save, close and print a document with little assistance
- cut, copy and paste with assistance
- use spell and grammar check with assistance
- use capitals and punctuation with some mistakes, self-correct
- type at the paragraph level

Internet:
- use different browsers to open Internet
- complete an internet search with assistance
- navigate a website with assistance
- type web address in URL address space
- register on website following a model
- access online learning tools such as dictionaries

Email:
- delete emails
- distinguish between reply and reply to all with assistance
- add attachments following an example
- type an unfamiliar email address
- type a short email message with greeting, message, and closing following a model

3

Software Skills:
- open, save, close and print a document unassisted
- format text: point size, font and justification
- cut, copy and paste unassisted
- use spell and grammar check
- use capitals and punctuation with few mistakes, self-correct
- type 2-3 paragraphs with correct indentation

Internet:
- use a search engine to do a simple Internet search for information
- navigate a website
- add site to favorites or bookmark a site
- type web address in URL address space
- register on website

Email:
- maintain account by sorting, deleting and saving messages
- add attachments
- add addresses to address book with assistance
- forward an email with assistance
- type an unfamiliar email address
- type an email message with greeting, message and closing
HELPFUL RESOURCES FOR LEARNERS: COMPUTER SKILL DEVELOPMENT

Adele’s ESL Corner  www.members.iinet.net.au/~adelegc/index.html
A site with basic vocabulary, listening and grammar activities with text

Adult and Family Education Links to English Learning Activities  www.johnmh.com/esl.html
Links to sites that focus on building ESL literacy skills

Adult Learning Activities – California Distance Learning Project  www.cdlponline.org
A site with basic computer skills practice, family, employment and health activities

Arlington Education and Employment Program REEP World  www.reepworld.org/englishpractice/
A site with basic computer skills practice, family, employment and health activities

BBC – Skillswise  www.bbc.co.uk/skillswise
A site that includes reading, writing, listening, vocabulary, grammar, numeracy and computer activities

BBC – Webwise – Computer Tutor  www.bbc.co.uk/webwise/courses/
A site which focuses on teaching learners basic computer skills; there is spoken instruction with visuals. This site is best for learners with strong listening skills.

EL Civics for ESL Students  www.elcivics.com/
A site with lifeskills and civics lessons with simple text and pictures; an American site, but has some universal themes as well

Interesting Things for ESL Students  www.manythings.org
A site with spelling games, vocabulary games, hangman and computer-generated paragraphs

Literacy Center Education Network – Play  www.literacycenter.net/lessonview_en.htm#
A site with basic letter and word activities; it is designed for children, but the letter activities are not too childish and are useful for adults with low literacy skills

The Internet Picture Dictionary  www.pdictionary.com/
A site with single images, categorized by theme

The University of Victoria’s Language Teaching Clip Art Library  hcmc.uvic.ca/clipart/
A library of about 3000 clipart images useful for the teaching of vocabulary

Web Learning Projects  www.susangaer.com/studentprojects/indextest.html
A site with ESL web-based learning projects ranging from food vocabulary to investigative projects on the cost of living
HELPFUL RESOURCES


WORKS CITED

For a complete list of the works cited in this document and in Learning for LIFE: An ESL Literacy Curriculum Framework Please refer to www.esl-literacy.com/workscited2