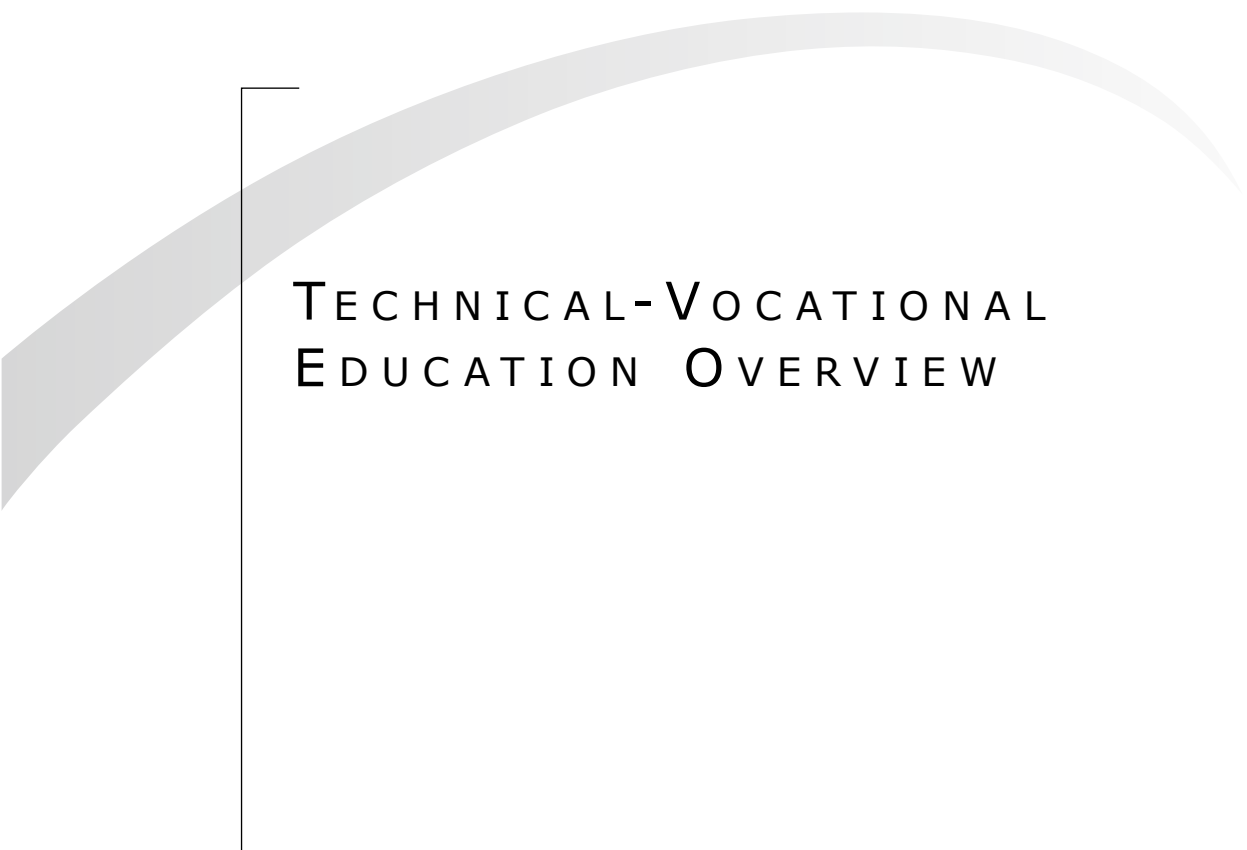


Technical-Vocational Education Overview



TECHNICAL-VOCATIONAL
EDUCATION OVERVIEW

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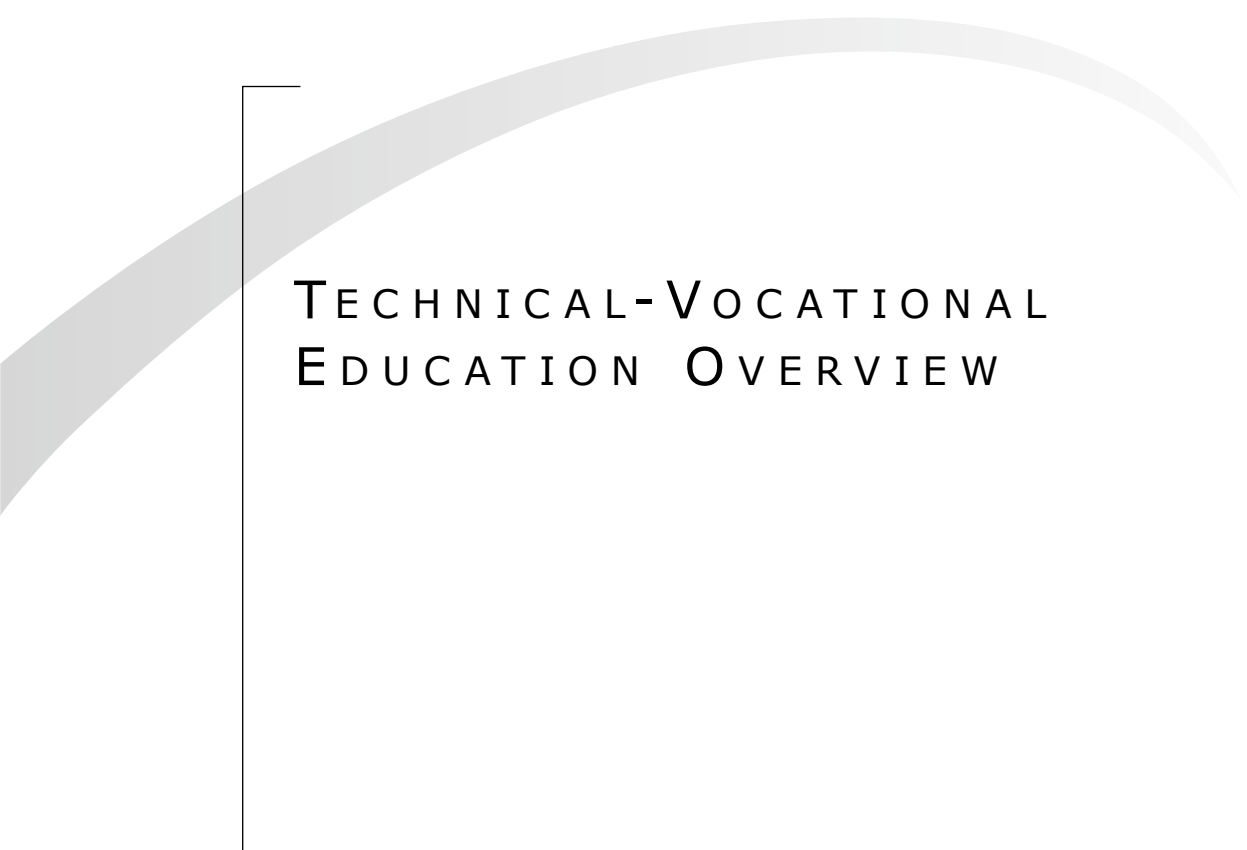
CONTENTS

Acknowledgements	v	Articulation	11
Introduction	3	Accreditation	12
Vision	3	Apprenticeship Manitoba: Level 1 Standing	12
Goals	3	Non-apprenticeship Areas	12
Technical Vocational Initiative (TVI)	4	Assessment and Reporting	13
TVE and Curriculum Revitalization/Review	4	Prior Learning Assessment and Recognition (PLAR)/Challenge for Credit	13
Technology Education Program	5	Safety	14
High School Apprenticeship Program (HSAP)	5	Safety-Related Learning Outcomes	14
Curriculum Framework and Implementation	5	Employability/Essential Skills and Career Development	15
Strands in Technical-Vocational Curriculum	6	<i>Employability Skills 2000+</i>	16
Implementation	6	Fundamental Skills	16
Grade 9: Sampling	7	Personal Management	16
Grade 10: Exploration	7	Teamwork Skills	16
Grade 11: Specialization	7	Essential Skills	17
Grade 12: Transition	7	Sustainable Development and Technical-Vocational Education	18
Manitoba Curriculum Framework of Outcomes	7	Background for Education for Sustainable Development (ESD)	19
Course Goals	7	Benefits of ESD in TVE Curriculum	20
Learning Outcomes	8	References	21
General Learning Outcomes	8		
Sample Goals and GLOs	8		
Specific Learning Outcomes	10		
References to Apprenticeship and Red Seal Objectives/Tasks	10		

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TECHNICAL-VOCATIONAL
EDUCATION OVERVIEW

Introduction

Vision

We live in a globally competitive and knowledge-based economy where technological changes and a concern for sustainability are the norm. For Manitoba's youth to function, compete, and excel in this twenty-first century environment, they require educational and training opportunities that are current, engaging, and responsive to labour market needs. The goal of technical-vocational education (TVE) is to provide students with the skills and competencies that will allow them to transition successfully into the workplace, apprenticeship opportunities, post-secondary education, and their daily lives.

Manitoba and Canada continue to experience labour shortages in the skilled trades. This problem will be magnified by an aging workforce and too few young people entering trade and technology careers. Technical-vocational education in Manitoba serves to address those deficiencies in the skilled trades and encourages students to explore career options in trades and technology. TVE provides students with opportunities to apply their learning using an interdisciplinary and cross-curricular approach while at the same time integrating learning from their own personal experiences. A competency-based framework based on learning outcomes allows a student's prior learning to be applied and recognized, whether obtained in a formal or informal setting.

Goals

When students learn in an environment modelled after the workplace, they will acquire not only trade-related skills, but will also develop

- employability skills required to make an effective transition from school to work
- an understanding of career development and planning
- an understanding of the importance of becoming an autonomous, lifelong learner in order to adapt to the skills and knowledge needed in the future
- an awareness of safety in school, in the workplace, and at home
- an awareness of sustainability as it relates to the specific skilled trade area and society as a whole

In recent history, TVE has made some significant pedagogical contributions, such as the following:

- problem solving-based learning
- cooperative and self-directed learning and instruction
- assessment of competencies gained along a continuum
- contextual learning
- integration of academic and vocational learning and instruction
- the conscious and targeted development of work-related employability and essential skills

In order to remain innovative and current, TVE teachers must look at educational developments and incorporate them into teaching practices. Inquiry-based problem-solving approaches to teaching and facilitative teaching,

for example, provide students with the opportunity to construct knowledge and incorporate their own personal experiences into **engaging and meaningful** learning experiences.

The new TVE curriculum must support exploration, articulation, and mobility. Allowing students to access technical-vocational education through a flexible curriculum model provides opportunities for more students to broaden their knowledge and skill set, and to explore and access more and more diverse career opportunities. These changes and challenges have an important impact on students, teachers, administrators, and the public, and thus clearly demand a new, flexible, and responsive curriculum model.

Technical Vocational Initiative (TVI)

The government of Manitoba recognized the pressing need to address socio-economic changes, labour market needs, and the ability of Manitoba youth to compete in a global economy. Consequently, in 2004, the Technical Vocational Initiative (TVI) was formed with the goal of offering technical vocational education programming that was accessible and aligned with labour market needs.

The TVI mandate was predicated on six Pillars of Action designed to revitalize technical vocational education in Manitoba:

1. Improve the image of technical vocational careers.
2. Enhance awareness of technical vocational programming.

3. Ensure programming relevance to labour market needs.
4. Facilitate programming articulation between high schools and colleges.
5. Develop strategies to address technical vocational teacher currency and shortage issues.
6. Increase funding to support technical vocational equipment upgrades.

Based on the Pillars of Action, TVI was engaged in developing an articulated, outcomes-driven approach for skilled trades education that leads to increased student enrolment, graduation, and transition rates from high school to technical vocational programs and increased employment in technical vocational careers.

In 2012, the Technical Vocational Education Unit (TVEU) was formed as a unit within the Instruction, Curriculum and Assessment Branch of Manitoba Education and Training. TVEU took over the responsibilities that previously belonged to TVI. Since 2014, the Learning Support and Technology Unit has been responsible for TVE.

TVE and Curriculum Revitalization/Review

Curriculum renewal has two main purposes:

1. Review and revise existing technical vocational curricula so as to be current, engaging for the learner, and relevant to labour market needs, and create new curricula as needed. This involved establishing a meaningful dialogue with industry, business, and labour to ensure that the curricula met the above

objectives. The inclusion of innovative approaches, sustainable practices, and technology into programming were also important considerations in the process.

2. Facilitate the dialogue and processes necessary to increase programming mobility and articulation among all levels of Manitoba's education system.

Through a curriculum review process involving input from stakeholders, courses and programming are being revised, created, or deleted in order to promote currency and relevance to industry standards and address current labour market needs in Manitoba. The review process was also cognizant of contemporary workforce requirements, sustainable practices, global competitive forces, and the need for programming and courses to fit into the desired, seamless educational pathway.

In order to facilitate interactivity and allow for rapid, ongoing response to changes, curriculum is available online, not in print.

Technology Education Program

To graduate from a **Senior Years Technology Education Program**, students must fulfill the graduation requirements outlined by Manitoba Education and complete a minimum of eight credits from an approved cluster of technology education courses.

Unit credit funding encourages schools to provide programming comprising courses from different clusters of vocational subject areas, in addition to teaching courses

from a specific cluster. This allows curriculum to be adapted to meet the local conditions or regional needs.

High School Apprenticeship Program (HSAP)

The High School Apprenticeship Program (HSAP) falls within the Senior Years Technology Education Program. In Manitoba, apprenticeship training, including HSAP, is administered by Apprenticeship Manitoba. Apprenticeship is a training relationship involving a trainee (known as an apprentice), an employer, and Apprenticeship Manitoba. An employer hires an apprentice to meet an existing or projected skill need. A contractual arrangement, known as indentureship, is established among the employer, the apprentice, and Apprenticeship Manitoba. Students can receive up to eight credits from HSAP towards graduation.

In some instances, in an accredited secondary apprenticeship program, students who complete both the Senior Years Technology Education Program requirements and HSAP can receive their full Level 1 status upon graduation. More information on HSAP can be found on the Apprenticeship Manitoba website at www.gov.mb.ca/wd/apprenticeship/discover/youth/index.html.

Curriculum Framework and Implementation

To ensure credibility and relevance of content and processes, the specific programming and course learning outcomes included in these documents were determined through a collaborative, consensus-building model with relevant stakeholders. Working development teams were established that consisted of representatives from stakeholder groups including, whenever relevant,

technical-vocational schools, industrial arts programs, Apprenticeship Manitoba, community colleges, industry, and industry associations. The intention of this collaboration with stakeholders is to revise and develop curriculum that will facilitate articulation opportunities for students.

Strands in Technical-Vocational Curriculum

The general and specific learning outcomes for each course belong to three distinct but related strands. As students move from Grades 9 to 12, the expectations within each strand will increase in complexity and depth and will move the students from sampling to transition to work or post-secondary education.



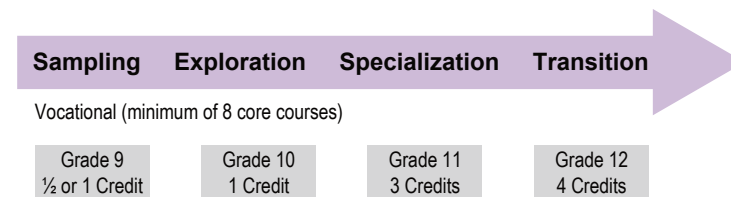
Technology Fundamentals: Students develop foundational knowledge related to the area of study. Students will make connections to cross-curricular areas that include numeracy and literacy, sustainable development, and scientific literacy as it relates to the subject area.

Technology Skills: Students develop the technological skills necessary to enter the related industry.

Professional Practice: Students develop the knowledge, skills, and attitudes required to make a transition to post-secondary education or the workplace. Students will demonstrate an understanding of health and safety standards and issues. Students will develop the employability skills to successfully continue in the industry and explore career opportunities and the education and training required in the field of study.

Implementation

The implementation model for technical-vocational education provides for nine credits from Grades 9 to 12. The Grade 9 credit is optional, depending on local school resources. The eight courses developed from Grades 10 to 12 form the foundation courses within the specific cluster.



Grade 9: Sampling

The curriculum in Grade 9 will be designed in a flexible model to support sampling. The course can be offered as a half or full credit based on local school resources and requirements.

Grade 10: Exploration

Students will explore the specific technology area. Students are encouraged to explore various technical-vocational areas.

Grade 11: Specialization

Students will specialize within the technical-vocational subject area of their choice. The learning outcomes will be linked to post-secondary training or apprenticeship.

Grade 12: Transition

Students will continue to specialize and develop the skills to facilitate transition to the workplace or post-secondary education. The learning outcomes will be linked to post-secondary training or apprenticeship.

Manitoba Curriculum Framework of Outcomes

The Manitoba Curriculum Framework of Outcomes for each subject area is intended to provide a guide for curriculum implementation.

Discussions with committee members indicated the working document should be concise and provide enough direction to a teacher to implement the curriculum. In developing the learning outcomes, the assumption was made that the courses are taught by experts in their field; therefore, the terminology and language used in the curriculum is specific to the trade/technical area.

For each subject area, the Framework consists of the following:

- Course Titles
- Course Grade Levels
- Course Descriptions
- Course Goals
- General Learning Outcomes
- Specific Learning Outcomes

Course Goals

Each individual subject area (such as hairstyling or automotive technology) includes between 10 and 13 course goals. These goals are identical in each course in that subject area. The goals reflect the strands in technical-vocational education as listed above.

Course goals are broken down into general learning outcomes, which are broken down into specific learning outcomes.

Learning Outcomes

Learning outcomes are statements that indicate what students will know or be able to do by the end of the course or sequence of courses or as a result of a learning activity. Learning outcomes are usually expressed as knowledge, skills, or attitudes. Outcome-based curriculum has several benefits—it

- focuses on the student’s behaviour/action
- promotes student engagement in learning activities
- makes the curriculum transparent to students, teachers, parents, colleges, apprenticeship programs, and employers
- enables students to learn more effectively by communicating the expectations of the course/sequence
- acts as a template to enable teachers to design and implement courses/sequences more effectively
- enables teachers to select an appropriate teaching strategy for the intended learning outcome based on student needs
- enables teachers to select an appropriate assessment strategy for the learning outcomes
- provides teachers with benchmarks for formative, summative, and prior learning assessment

Competency-based learning outcomes lend themselves well to TVE by providing specific, observable, measurable, realistic, and obtainable objectives to students. Learning outcomes should be student focused and clearly outline the knowledge, skills, or attitudes being assessed. Within

a subject area, each course contains general and specific learning outcomes that address a particular area of study related to the subject area.

General Learning Outcomes

General learning outcomes (GLOs) are overarching statements about what students are expected to learn in each course. They identify the broad categories of knowledge, skills, and attitudes that students are expected to learn and are able to demonstrate in a subject area or course.

In an individual subject area, the GLOs might be very similar for each course. For example, a GLO might read something like, “Demonstrate the safe and appropriate operation of _____ equipment and utensils.” This GLO would be in every course in a particular subject area. However, the blank would be filled with the name of the specific type of equipment and utensils, depending on the exact nature of the course.

All general learning outcomes are identified with two numbers indicating the subject area goal and the general learning outcome. For example, GLO 1.1 is the first general learning outcome under Goal 1.

Sample Goals and GLOs

Here are some generic course goals and GLOs typical of a technical-vocational subject area:

Goal 1: Describe and apply appropriate **health and safety** practices.

GLO 1.1: Demonstrate appropriate **health and safety** practices.

GLO 1.2: Create and maintain a **safe and organized workstation**.

Goal 2: Demonstrate the safe and appropriate operation, cleaning, maintenance, and storage of tools and equipment.

GLO 2.1: Demonstrate the safe and appropriate **operation of tools and equipment**.

GLO 2.2: Demonstrate the safe and appropriate **cleaning, maintenance, and storage of tools and equipment**.

Goal 3: Demonstrate the appropriate use of **materials and consumable items**.

GLO 3.1: Demonstrate the safe and appropriate use of the **materials** used in the profession.

GLO 3.2: Demonstrate the safe and appropriate use of the **consumable items** used in the profession.

Goal 4: Demonstrate the skills related to **pre-production/pre-service** procedures.

GLO 4.1: Demonstrate the **pre-production** skills required in the profession.

Goal 5: Demonstrate the skills related to **production/service** procedures.

GLO 5.1: Demonstrate the **production** skills required in the profession.

Goal 6: Demonstrate the skills related to **post-production/post-service** procedures.

GLO 6.1: Demonstrate the **post-production** skills required in the profession.

Goal 7: Understand **career opportunities** in the industry.

GLO 7.1: Describe **apprenticeship, education, and career opportunities**, and **professional organizations** in the industry.

Goal 8: Describe and demonstrate the transferable **cross-curricular** knowledge and skills as they pertain to the industry.

GLO 8.1: Apply **mathematics** knowledge and skills related to the industry.

GLO 8.2: Apply **science** knowledge and skills related to the industry.

Goal 9: Demonstrate awareness of **sustainability** as it pertains to the industry.

GLO 9.1: Describe the impact of **human sustainability** on the health and well-being of technicians and consumers.

GLO 9.2: Describe the **sustainability practices** of the industry and their impact on the environment.

GLO 9.3: Describe **sustainable economic practices** within the industry.

Goal 10: Demonstrate awareness of the **ethical and legal standards** as they pertain to the industry.

GLO 10.1: Demonstrate awareness of the **ethical standards** required in the profession.

GLO 10.2: Demonstrate awareness of the **legal standards** required in the profession.

Goal 11: Demonstrate **employability skills** related to the industry.

GLO 11.1: Demonstrate fundamental **employability skills**.

GLO 11.2: Demonstrate an understanding of the **business operation** of a shop, salon, or manufacturing facility.

Goal 12: Understand the **history, technological progression, and emerging trends** of the profession.

GLO 12.1: Demonstrate an understanding of the **history** of the profession.

GLO 12.2: Demonstrate awareness of the **technological progression and emerging trends** in the profession.

Specific Learning Outcomes

Specific learning outcomes (**SLOs**) are statements that identify the specific knowledge, skills, and understandings that students are required to attain by the end of a given course. Teachers must teach and assess every SLO in each course.

SLOs do not specify the learning activities in which students will participate in order to attain them. In most courses, the emphasis is on applied learning activities. Teachers are advised to select the learning activities best suited to teach the SLOs, based on a variety of factors, including access to resources or regional needs. In light of rapid changes in technology, business, and industry,

teachers are encouraged to update their learning activities in order to meet the needs of students.

SLOs do not specify the location where the SLOs are taught. This means that any course can be taught in the most appropriate location, such as a regular, academic classroom, a shop or lab, or an authentic industry workplace location, such as a shop or salon.

SLOs are not necessarily sequential. In other words, they might be taught in an order different from how they appear in the document.

All specific learning outcomes are identified with a sequence of numbers separated by dots. These characters code the general learning outcome and the specific learning outcome. For example, SLO 1.1.1 is the first specific learning outcome under GLO 1.1.

References to Apprenticeship and Red Seal Objectives/Tasks

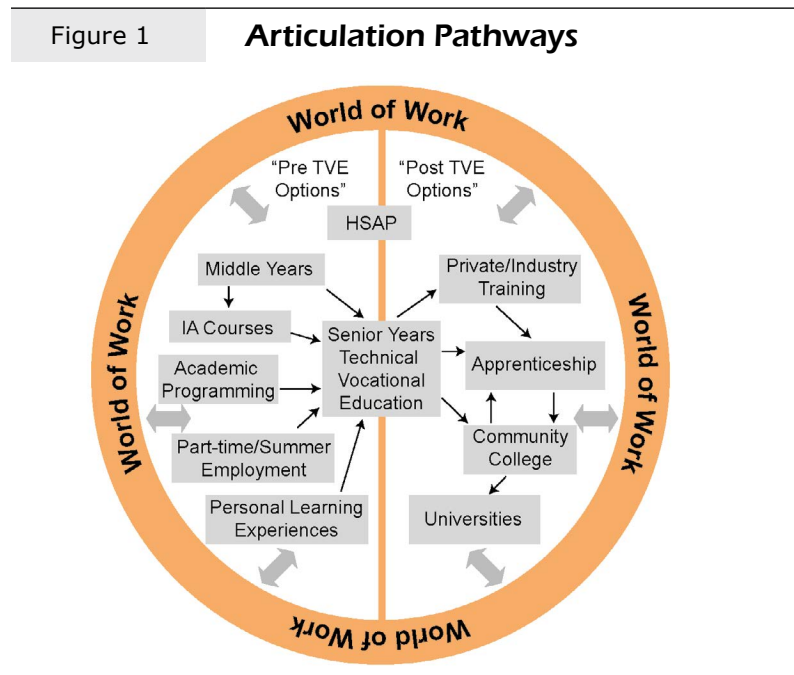
In Apprenticeship and Red Seal subject areas (except carpentry), the Framework contains all of the Level 1 objectives/tasks from either Apprenticeship Manitoba (e.g., cook) or Red Seal (e.g., baker). Those Apprenticeship or Red Seal learning outcomes/objectives/tasks are referenced in brackets at the end of some Frameworks. In some cases, the Apprenticeship or Red Seal learning outcomes/objectives/tasks have been reworded to make them more consistent with the wording in the Framework.

Teachers teaching Apprenticeship subject areas must follow the objectives in those curriculum documents as closely as possible to ensure that students have met the

Level 1 requirement for their subject area. They should read the *Trade Level Unit Outlines from Apprenticeship to get more detailed information about the Apprenticeship objectives*. They will find them, along with the Red Seal curriculum, to be valuable resources. These documents can be found here:

- Apprenticeship Manitoba Technical Training Curriculum Information: www.gov.mb.ca/wd/apprenticeship/manage/techtraining.html
- Interprovincial Standards Red Seal Program www.red-seal.ca

Articulation



Effort is being directed toward creating seamless pathways between programming at the high school and post-secondary levels and ensuring that graduating students meet entry-level workplace industry skills standards and, where appropriate, learning outcomes equivalent to first-year post-secondary or Level 1 Apprenticeship. This allows for increased mobility across education systems both within Manitoba, and for the Red-Seal trades, across Canada.

Articulation in the following areas has been targeted with this curriculum development:

- between Middle Years and Senior Years
- within individual high schools
- among Manitoba high schools
- between high schools and colleges
- between high schools and Apprenticeship Manitoba
- between high schools and the workplace

Before and during the completion of Senior Years technical-vocational education and/or the High School Apprenticeship Program (HSAP), options include industrial arts courses or human ecology courses in Middle years, academic programming, part-time/summer employment, and personal learning experiences. After the completion of Senior Years technical-vocational education and/or HSAP, options include private/industry training, apprenticeship, community college, and universities as various pathways to the world of work.

Articulation is based on the premise that institutions have a responsibility to establish connections between themselves so that the repetition of learning is limited

or does not occur at all. Articulation agreements are an institutional response to the need to recognize the skills and learning previously achieved at other institutions.

Accreditation

Apprenticeship Manitoba requires that a Senior Years Technology Program must be accredited to offer Level 1 of that specific trade. Accreditation of a subject area within a school is based on the following general criteria:

- licensed journeyman as a teacher in the subject area
- facility requirements as outlined by Apprenticeship Manitoba
- curriculum aligned to Apprenticeship Level 1 for the specific area

Apprenticeship Manitoba has used a standard benchmark in assessing suitability of accreditation submissions relative to Apprenticeship Manitoba's Level 1 curriculum content standards. Submissions must have 100 percent of the curriculum objectives that are outlined in Level 1 of any given Apprenticeship curriculum.

Following the guidelines established by Apprenticeship Manitoba, each subject area curriculum developed will have a benchmark document that indicates where in the TVE curriculum the Apprenticeship objectives are being met. This document will assist secondary schools in obtaining accreditation in that subject area. For additional information about accreditation, contact the accreditation coordinator at Apprenticeship Manitoba.

It is the expectation of Manitoba Education and Training that schools offering vocational programming, where apprenticeship exists, have their programming accredited through Apprenticeship Manitoba.

Apprenticeship Manitoba: Level 1 Standing

A student who graduates from an accredited Level 1 training program with a minimum final accumulative average of 70% or better in the trade subject for which the program is accredited is entitled to receive technical training standing in addition to 900 hours towards practical training upon entering apprenticeship, provided the standards outlined by Apprenticeship Manitoba are met.

Students completing the accredited program are required to complete their practical training in order to receive full standing as a Level 1 apprentice. In some instances, the outstanding hours required to complete the practical training component can be done within the High School Apprenticeship Program.

Non-apprenticeship Areas

It is expected that schools offering programming that is not in a designated trade and thus not accreditable by Apprenticeship Manitoba will seek articulation agreements with their local community college or university. In these agreements, students would be awarded course credit based on meeting the learning outcomes established by the receiving institution and an agreed upon level of performance (e.g., a final grade of 70%).

Assessment and Reporting

Assessment is an integral part of learning. It plays a major role in how students learn, their motivation to learn, and how teachers teach. Learning is viewed as a process of constructive understanding, during which individuals attempt to connect new information to what they already know, so that ideas have some personal coherence. Individuals construct this understanding in many different ways, depending on their interests, experience, and learning styles (Manitoba Education, Citizenship and Youth, *Rethinking 3*).

In this model of TVE, formative assessment is used to help students to construct knowledge and skills. At times, assessment needs to be summative in nature in order to communicate student learning. Suggestions for assessing and reporting student achievement of the learning outcomes are offered in other departmental documents:

- *Rethinking Classroom Assessment with Purpose in Mind: Assessment for Learning, Assessment as Learning, Assessment of Learning* (Manitoba Education, Citizenship and Youth) Available online at www.edu.gov.mb.ca/k12/assess/wncp/index.html.
- *Communicating Student Learning: Guidelines for Schools* (Manitoba Education, Citizenship and Youth) Available online at www.edu.gov.mb.ca/k12/assess/docs/csl/index.html.

TVE teachers are encouraged to use many different strategies and tools for assessment. Identifying the purpose of assessment is critical to making it productive and efficient. Is the assessment to gather information?

to interpret information? for record keeping? for communication?

In the rapidly changing world of TVE, it is important that as teachers we not only encourage skill development and knowledge, but also encourage students to take a more active role in their own learning. This begins with the gradual release of responsibility for assessment and learning from teacher to student. Skills development and knowledge not only require a student to demonstrate a skill, but also require the intelligent use and selection of the appropriate skills. Students become skilled and knowledgeable through the learning activity and by actively engaging their minds and reflecting on their learning experiences. In TVE, lifelong learning is critical to keeping pace with the rapid change in technology.

Prior Learning Assessment and Recognition (PLAR)/Challenge for Credit

Prior Learning Assessment and Recognition (PLAR) is defined as “the process of identifying, assessing and recognizing skills, knowledge, or competencies that have been acquired through work experience, unrecognized training, independent study, volunteer activities, and hobbies. PLA may be applied toward academic credit, toward requirement of a training program, or for occupational certification” (Human Resource Development Canada 1). It was determined that by using outcome-based language for curriculum development, the clearly defined knowledge and competencies would allow for PLAR or Challenge for Credit opportunities.

Students could incorporate their own personal experiences and be recognized for prior learning that has occurred in both a formal (e.g., industrial arts) and informal setting. Manitoba Education and Training has provided for this opportunity and outlined the guidelines for students, teachers, administrators, and school divisions in the following document:

- *Increasing Choice and Flexibility: Changes to Senior Years Graduation Requirements Status Report* (Manitoba Education, Training and Youth)—available online at www.edu.gov.mb.ca/k12/policy/gradreq/docs/choice_report.pdf.

Safety

In TVE it is essential that students have an understanding of workplace safety and be able to translate that into safe behaviours and actions. This knowledge and understanding of workplace health and safety will benefit students not only within their TVE programming but throughout their working and personal lives.

Young Manitobans between the ages of 14 and 24 are injured in their jobs at a disproportionate rate. Research indicates several causes for the higher rate of young worker injuries. Among them are

- lack of supervision or training
- minimal knowledge of rights and responsibilities
- lack of experience in recognizing hazardous situations

In light of injuries among youth workers, Manitoba has developed several resources that teachers can use to

teach the health and safety components of their courses. Although these resources may be generic, they can be modified to the TVE area, and teachers should use examples from their specific trade or technical area. The following are a small representation of the many resources available:

- *SAFE Work Student Program* (Workers Compensation Board of Manitoba) Available at www.safemanitoba.com/page%20related%20documents/uploads/programs_student.pdf.
- SAFE Workers of Tomorrow website at www.workersoftomorrow.com
- *Keeping Your Facilities SAFE: A Support Document for Industrial Arts Teachers* (Manitoba Education and Youth) Available at www.edu.gov.mb.ca/k12/docs/support/ia_safe/index.html.

Safety is embedded throughout the curriculum and modelled in the daily activities and actions of teachers and students.

Safety-Related Learning Outcomes

TVE teachers must reinforce safety as a priority to students. The specific learning outcomes related to safety are expressed explicitly in each course, but safety should be integrated throughout all courses and reinforced continually. Because of the importance of safety training, development team members concluded that, with a few exceptions, teachers need to teach and assess safety in every course in their subject area. Therefore, all safety-related SLOs are repeated in every course in their subject areas.

For example, students will:

1. Value the importance safety and health procedures and regulations have in reducing injuries and fatalities in the workplace.
2. Explain their rights and responsibilities under *The Workplace Safety and Health Act*.
3. Know where to locate information on workplace safety and health.
4. Practise safe work procedures through modelling.
5. Demonstrate how to handle a potentially dangerous work situation.
6. Apply the SAFE acronym in their work/school environment.
7. Apply the Workplace Hazardous Material Information System (WHMIS).
8. Recognize and follow precautions listed on Material Safety Data Sheets (MSDS).
9. Demonstrate the selection and use of personal protective equipment.

Employability/Essential Skills and Career Development

Employability skills are the skills found in all occupations and used in daily activities. The development of employability skills is critical in preparing students for the world of work and citizenship, as well as preparing them for success in school and in their personal lives.

Essential, employability, transferable, core, soft, or generic skills are all attempts to examine the common skills across all occupations. These skills enable technical and employment-specific skills to “stick.” These skills are transferable across all situations, including technical-vocational, academic, and workplace settings, as well as students’ personal lives.

These are the skills not only needed for employability, but throughout all career and life development activities. They are enabling skills that

- help people perform the tasks required by their occupation and other activities of daily life
- provide people with the foundation to learn other skills
- enhance people’s ability to adapt to change (Hache, Redekopp, and Jarvis Appendix D, 10)

Having and using these important skills, attitudes, and behaviours help students make a smoother transition and better connections—whether from school to work or further study, from employment back to education, or from job to job—and manage the many changes they will experience in their lives.

Employers identify employability skills as the top-tier priority when hiring. They require new employees to be

- honest and ethical
- able to demonstrate basic social skills (e.g., showing up regularly, being on time, speaking and dressing appropriately)
- accountable for actions done
- able to complete tasks

- able to interact positively with other workers
- able to listen and understand
- aware of work safety
- able to assess situations and identify problems and solutions
- able to set goals and manage time effectively

The skills identified by employers are consistent with the knowledge, skills, attitudes, and behaviours identified by skills frameworks developed by Human Resources and Skills Development Canada, the Conference Board of Canada, and the Blueprint for Life/Work Designs. The following discussion will provide a look specifically at the Employability Skills 2000+ developed by the Conference Board of Canada and HRSDC Essential Skills and Essential Skills Profiles and how they can be integrated and applied in the TVE classroom.

Employability Skills 2000+

The Conference Board of Canada defines employability skills as “the skills you need to enter, stay in, and progress in the world of work—whether you work on your own or as a part of a team. These skills can also be applied and used beyond the workplace in a range of daily activities.”

The Conference Board of Canada developed *Employability Skills 2000+* to identify and define employability skills. These skills are divided into three broad categories: fundamental skills, personal management skills, and teamwork skills.

Fundamental Skills

Fundamental skills form the basis for further skills development. They include communication skills such as reading and understanding information, as well as listening to others and sharing information. Information management, the application or use of numbers, and problem solving are other fundamental skills.

Personal Management

Personal management skills comprise positive attitudes and behaviours that determine student potential for growth. They include demonstration of responsibility, adaptability, continuous learning, and working safely in all situations.

Teamwork Skills

Teamwork skills are required for students to contribute productively in any environment. Teamwork skills include working with others and participating in projects and tasks (British Columbia Ministry of Education 5).

Employability Skills 2000+ breaks down the broad skills categories into specific learning outcomes. The complete *Employability Skills 2000+* brochure is available online at www.conferenceboard.ca/topics/education/learning-tools/employability-skills.aspx.

Employability skills include not only skills, but also attitudes and behaviours. We need to define the attitudes and behaviours in terms of actions that students can learn, develop, practise, and ultimately turn into a set of skills.

Keep the following questions in mind when working to describe or define the attitudes, behaviours, and skills:

- What does it look like? or What would you see someone doing?
- Can you clearly describe the attitude, behaviour, or skill so everyone in your class knows exactly what is meant and expected?
- Consider the term *good attitude*. What does that really mean? What does it look like? What would you actually see someone doing if he/she had a good attitude?

When these questions can be answered in terms of specific actions, the teacher can assist the student in knowing what has to be learned, practised, and demonstrated.

What is fundamental to the development of employment skills is they must be integrated with the technical skills and knowledge students are learning in the TVE classroom and emphasized in the day-to-day activities. Learning outcomes related to employability skills are included in the framework for each course. Development team members concluded that there is a great need for students to learn employability skills, and for teachers to teach and assess those SLOs in every course. Therefore, with a few exceptions, all SLOs related to employability skills are repeated in most courses in each subject area.

Essential Skills

In 1994, Human Resources and Skills Development Canada (HRSDC) initiated a project to analyze and articulate job-specific skills. Recognizing that there was a set of foundation skills needed for all occupations, analysts job-shadowed and interviewed workers, managers, practitioners, and leading researchers to identify the skill level required in each of the nine essential skills. The nine essential skills are

- reading text
- document use
- numeracy
- writing
- oral communication
- working with others
- thinking
- digital technology
- continuous learning

The Essential Skills Profiles (ESPs) take a closer look at the essential skills as they relate to a specific job or occupation and provide a level of competency required in that particular occupation. Essential Skills Profiles (ESPs) describe how each of the nine essential skills is used by workers in a particular occupation. The profiles include the following:

- a brief description of the occupation
- examples of tasks that illustrate how each essential skill is applied
- complexity ratings that indicate the level of difficulty

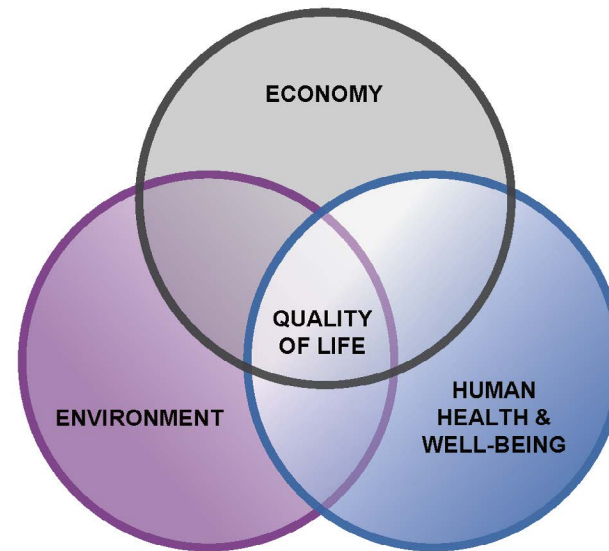
In an Essential Skills Profile (ESP), the skills are measured using levels of complexity ranging from 1 to 5, with Level 1 being “basic tasks” and Level 5 being “advanced tasks.” These levels of complexity are assigned to tasks performed by a worker in a specific job. A task’s complexity rating will increase as the demands of the task’s content increase. For additional information visit the Employment and Social Development Canada web page “Essential Skills Profiles” at www.canada.ca/en/employment-social-development/programs/essential-skills/profiles.html.

Essential skills are broken down by occupation. Each area has been analyzed and relates specifically to the occupation in question. To explore specific occupations, go to https://www.jobbank.gc.ca/occupation_search-eng.do.

In TVE, the profiles can be used to help the student learn more about the skills needed in a particular occupation or as a career exploration tool. The ESPs can also be used by students to research the skills and attributes typically required in their selected occupation.

TVE teachers can also use the ESP for their area to develop lesson plans and to identify the complexity of a skill required in an occupation, or use it as a basis for developing assessment tools. Teachers can use the ESP to incorporate actual workplace materials into their classroom activities.

Sustainable Development and Technical-Vocational Education



Sustainable development means different things to different people, but the most frequently quoted definition is from the “Brundtland Report,” *Our Common Future: Report of the World Commission on Environment and Development* (World Commission on Environment and Development 41): “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainable development focuses on improving the quality of life for all of Earth’s citizens without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely. Sustainable development is a concept based on

integrating socio-cultural, environmental, and economic considerations.

Manitoba proclaimed *The Sustainable Development Act* in 1997. The act requires government, the public, and the private sector to consider sustainable development concepts and implications in all programs and activities. Manitoba has identified Sustainable Development Priority Areas and education is one of them. *Education for a Sustainable Future: A Resource for Curriculum Developers, Teachers, and Administrators* (Manitoba Education and Training) provides direction for the integration of sustainability within the curriculum, the classroom, and the community. The discussion that follows refers to this document and the integration of education for sustainable development (ESD) into technical-vocational education.

Background for Education for Sustainable Development (ESD)

In 2004, Manitoba Education and Training declared Education for Sustainable Development to be one of its top priorities. At the same time, the United Nations declared the years 2005 to 2014 to be the Decade of Education for Sustainable Development. The overall goal of the UN Decade of Education for Sustainable Development (DESD) is to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behaviour that allow for a more sustainable and just society for all. Manitoba Education and Training has taken a leadership position nationally in working with Learning for a Sustainable Future and Environment Canada on activities for the 2005 to 2014 Decade of

Education for Sustainable Development, established by the United Nations.

Manitoba Education and Training describes ESD on its *Education for Sustainable Development* website as follows:

Education for Sustainable Development involves incorporating key themes of sustainable development—such as poverty alleviation, human rights, health and environmental protection, climate change—into the education system. ESD is a complex and evolving concept and requires learning about key themes from a social, cultural, environmental, and economic perspective and explores how those factors are interrelated and interdependent.

The Education for Sustainable Development (ESD) Venn diagram on the previous page reflects the concept that social, economic, and environmental factors should be considered in decision making. The quality of life that our students and our society will have depends on the interaction of human health and well-being, the economy, and the environment.

In Manitoba's role as a leader in ESD, the following vision for Education for a Sustainable Future was developed: "Students will become informed and responsible decision makers, playing active roles as citizens of Canada and the world, and will contribute to social, environmental, and economic well-being, and an equitable quality of life for all, now and in the future" (Manitoba Education and Training, *ESD 4*).

To support the vision, Manitoba Education and Training requires that educators integrate sustainable development into curriculum wherever appropriate (Manitoba Education and Training, *Renewing Education 21*). This

requires an explicit inclusion of sustainable development into curriculum, not as an add-on but rather as concepts and learning opportunities that are infused. Learning outcomes focused on sustainable development concepts are identified specifically and instructional strategies and resources are offered wherever possible.

Benefits of ESD in TVE Curriculum

The Bonn Declaration *Learning for Work, Citizenship and Sustainability* states that

since education is considered the key to effective development strategies, technical and vocational education and training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development. (UNESCO)

Integrating sustainable development into TVE curricula allows students to develop the knowledge, skills, and attitudes necessary to take actions that lead to economically viable, environmentally sound, and sustainable communities. TVE is in a unique position within education in that the sustainable development skills students develop will lead to action and be applied immediately within the context of the specific trade or technical area.

Students must be challenged to understand and apply the concepts of sustainability and to envision a sustainable future. They need to know what to aim for in their future, and to understand that they have the personal power to make a difference and effect change. This focus on sustainability throughout their TVE programming will provide students with the ability and desire to consider

sustainability when making decisions during their everyday lives, apply sustainability concepts when they enter the labour market, encourage sustainable work practices, and promote sustainability to colleagues, supervisors, and decision makers.

Today's students need to be prepared to deal with the increasing focus on the environment—from the race for clean energy to improving energy efficiency to reducing greenhouse gases to new incentives for harnessing the power of the market for sustainable development. Incorporating sustainable development into the technical-vocational curricula will help students to think and act in a way that matches the scale of the challenge of achieving sustainable development.

Canadian society needs people who consider sustainable development decisions in their decision making and actions. The development of knowledge, skills, and attitudes that promote sustainability in the workplace will be vital for employers and the wider community. Manitoba's technical-vocational graduates will be highly sought after as a result of participation in programming that incorporates sustainable development concepts.

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