Chapter 3 Cross-Curricular Competencies

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3.1 Introduction

What were previously considered highly advanced cognitive competencies and attitudes, beyond the reach of the majority of people, are now increasingly seen as the standard.
Organisation for Economic Co-operation and Development

The complex, multidimensional world we live in requires people to make connections among various elements of knowledge in order to adapt to their environment and develop and act effectively in it. Schools must therefore see that students develop generic abilities that are solidly grounded in an organized body of knowledge. In the Québec Education Program, these abilities are called *cross-curricular competencies.*

The idea of cross-curricular competencies corresponds to practices already used by many teachers and other educators concerned with calling on their students' cognitive, social and emotional resources to enable them to better integrate their learning. Like a subject-specific competency, a cross-curricular competency may be defined as the capacity to act effectively by mobilizing a variety of resources. However, these competencies provide a broader frame of reference in that they cut across subject boundaries and allow for greater scope of action. They often have the advantage of drawing on the resources of more than one subject in a single situation.

Schools must see that students develop generic abilities that are solidly grounded in an organized body of knowledge.

The cross-curricular competencies are of various types, highlighting different facets of the capacity to act effectively: intellectual, methodological, personal and social, and communication-related. They complement each other, so that when one of them is applied, it generally opens doors to the others. Thus *using information* usually involves *exercising critical judgment, solving problems* is facilitated by *adopting effective work methods,* and *cooperating with others* is based on the capacity to *communicate appropriately.* Furthermore, it is obvious that complex learning situations draw on several cross-curricular competencies simultaneously.

By bringing out the similarities among the subject-specific competencies, the cross-curricular competencies serve as a lever for their development. They are related to the most generic aspects of human thinking and personal and social skills, and, along with the subject-specific competencies, they encourage reflection on the major concerns of modern society. Finally, they make clear to students the importance of reflecting on their learning process.

The Cross-Curricular Competencies: Competencies for Life

The relevance of the cross-curricular competencies as a basic component of the Québec Education Program results from the fact that they play a determining role in developing thinking. Research shows that they are also important factors in educational success. The mastery of these competencies is one of the main things that distinguish experts from novices in postsecondary education and working life.

An expression of goals common to the whole curriculum, the cross-curricular competencies are essential tools that help students adapt to various situations and continue learning throughout their lives. They are developed through a gradual process that starts in elementary school and continues, both within and outside the school, through elementary and secondary school and even beyond. They thus refer to aspects of learning that should be addressed at all levels of education. They are found, under different names, in vocational training, adult education and college-level programs. Finally, they are considered essential in the working world, which is showing an increasing interest in cooperation, communication and problem-solving skills.

The Cross-Curricular Competencies in the Québec Education Program

As stated in Chapter One, the Québec Education Program contains nine cross-curricular competencies grouped in four categories:

– **Intellectual**: Uses information; Solves problems; Exercises critical judgment; Uses creativity
– **Methodological**: Adopts effective work methods; Uses information and communications technologies
– **Personal and social**: Achieves his/her potential; Cooperates with others
– **Communication-related**: Communicates appropriately

Each cross-curricular competency is presented under four headings:

– The *Focus of the Competency* indicates the competency's function and nature.
– The *Key Features of the Competency* describe the components of the competency and its manifestations.
– The *Evaluation Criteria* suggest ways to judge the extent to which a student has developed the competency.
– The *Development of the Competency* describes how the competency develops over time, from the elementary level to the end of the secondary level.

Development of the Cross-Curricular Competencies

The cross-curricular competencies are best developed when they are drawn on intentionally and regulation is provided. However, they should not be worked on in isolation from any program content. They are a joint responsibility and require shared planning so that all of them receive sufficient attention in a variety of situations.

They are not exercised in the abstract, but are rooted in particular learning contexts, which are usually subject-specific. The periods of reflection on process, which are an important element of the situations provided, give students unique opportunities to develop the cross-curricular competencies. These competencies should be used and worked on, first of all, in the subject-specific programs and in activities that are part of school life.

The cross-curricular competencies are worked on primarily in the subject-specific programs, in interaction with the broad areas of learning.

It is important to stress that, even when a subject-specific competency and a cross-curricular competency are stated in almost the same terms, the subject-specific competency does not completely cover the cross-curricular competency. For example, the cross-curricular competency *Communicates appropriately* is used in learning contexts in English Language Arts to develop the competency *Uses language/talk to communicate and to learn,* in Français, langue seconde to develop the competency *Interagir en français* and in Mathematics to develop the competency *Communicates by using mathematical language.* The cross-curricular competency *Communicates appropriately* is also used in non-formal learning situations such as meetings of the student council.

But this is not sufficient to ensure the cross-curricular nature of the learning. Continuing with the example of subject-specific competencies related to communication, we see that these competencies involve subject-specific concepts or processes, but also some more generic skills associated with all communication activities. It is worthwhile for students to look at these skills outside their context and clearly identify them, because they provide access to other fields of knowledge.

Students need to realize that certain characteristics of the skills acquired in subject-specific activities are of a more general nature and can thus be applied in other areas or subjects. Once their development has begun, the cross-curricular competencies facilitate the assimilation and enrichment of the subject-specific competencies, including those in areas other than the one in which they originated.

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Although some subject areas seem more conducive than others to the exercise of particular cross-curricular competencies, it is important to draw on the broadest possible range of subjects in order to ensure their optimal development. For example, the competency *Uses creativity* may seem to be more readily drawn on in situations in Arts Education. But it is precisely the nature of the cross-curricular competencies to be useful in all the subject areas. For example, when we say that a mathematical proof is elegant, we are referring

to its aesthetic quality and the fact that it involves more than the mechanical application of rules; we mean that its author has demonstrated originality in the point of view adopted. Creativity is usually at work in discoveries, and it has the power, in both the arts and the sciences, to keep curiosity alive.

On the other hand, the competency *Achieves his/her potential* may seem to bear little relation to any of the subjects taught in school. However, all new learning leads to change and to the development of a person's capacities: the ability to express oneself well, the knowledge of historical or religious phenomena that helps in interpreting current events and the understanding of everyday technological tools reinforce the capacity to take charge of one's own development. Students who have developed these competencies are able to see, understand and do more: they thus achieve their potential, and this generic competency gives greater meaning to their other learning and increases their motivation to keep on learning.

It should be emphasized that the cross-curricular competencies do not develop in isolation. While it may be useful to target one or more of them, according to their relative importance in a given learning situation or for particular pedagogical purposes with regard to a student or a class, they are generally used in interaction with each other. Drawing intentionally on a particular competency often leads to drawing on several other competencies incidentally.

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Every subject area, like every broad area of learning, provides many opportunities for the development of cross-curricular competencies, but students must be given a chance to exercise these competencies. Teachers play an essential role in this regard. The broader knowledge they possess in various areas enables them to provide students with examples of situations in which their new competencies may be applied to advantage.

Evaluation of the Cross-Curricular Competencies

The very definition of a competency implies that a judgment is made regarding its three fundamental components: moblilization in context, availability of resources, and reflection on the process. Three interdependent focuses of evaluation that are used to judge the development of subject-specific competencies were discussed in Chapter 1:[1]

– the ability to effectively mobilize a set of resources in concrete situations
– the existence of a certain number of personal resources, including various strategies for finding or constructing resources that are not available
– the ability to explain one's process and choices in dealing with the situation

The cross-curricular competencies must be observed in several subject-specific, cross-disciplinary or extracurricular contexts for the most accurate possible judgment to be made of their development. The resources to be mobilized—knowledge, strategies or attitudes—will thus originate in these different contexts. For example, the competency *Uses information* can be applied as readily to scientific or historical information as to social or ethical problems related to health or team sports.

In addition to being able to draw on particular competencies, students have to be able to determine which competencies are most useful in a given context. The ability to recognize the common and the specific aspects of scientific, ethical or other everyday problems is an important condition for recognizing what competency should be used to solve a problem in a new situation. This ability can only be observed in open-ended situations in which the goal is given but the means have to be chosen or constructed by the students. Regardless of the subject, it is often interdisciplinary situations that offer the most fruitful and revealing possibilities. The integrative project set out in the *Basic school regulation* for Secondary V students should be used for this purpose.

It will immediately be apparent that evaluation of the cross-curricular competencies requires a variety of approaches, including observation of students' behaviours and procedures as well as analysis of their productions in various contexts.

During the cycle, progress in the development of the cross-curricular competencies should be assessed through close collaboration between students and school personnel. The personnel provide students with feedback and help them develop the habit of regulation that will enable them to assess their own

1. See section 1.5.

Even at the report stage, evaluation of the cross-curricular competencies should be descriptive in nature and should be used to support students' overall development.

progress. Communications with students and their parents concerning the cross-curricular competencies thus are more descriptive than comparative in nature; they aim above all to foster the development of these competencies.

As stipulated in the *Basic school regulation*, the end-of-cycle report must include an assessment of the students' learning in one or more cross-curricular competencies. To carry out this evaluation, educators should work together and involve the students in the process. Even at the report stage, evaluation of the cross-curricular competencies should be descriptive in nature and should be used to support students' overall development.

3.2 Nine Cross-Curricular Competencies

COMPETENCY 1 Uses information

Focus of the Competency

Societies today are characterized by the rapid growth of knowledge concerning all manner of subjects and the growing accessibility of numerous and varied information sources. Search engines make it possible to explore the range of information available on the Internet, and aggregators inform users of updates to sites of interest and collect information on different subjects. However, huge databases in print, electronic or digital form are not the only sources of information in the 21st century; a great deal of information is also accessible by means of devices such as cameras, sensors, barometers, telescopes, tape recorders, etc.). An enormous amount of information of all kinds is readily available, but it is not all of equal value.

In addition to finding information and assessing its value or pertinence, people have to be able to organize it.

However, making proper use of these resources requires increasingly complex operations demanding sharp senses and good intellectual judgment. In addition to finding and comparing information and assessing its value or pertinence, people have to be able to organize and synthesize it in order to make use of it. Making good use of information means identifying what information is lacking, and doing further research to find it. It also means being on the lookout for new information and learning to use devices to record it. The schools should therefore ensure that students learn how to acquire new knowledge and should help them develop the cognitive flexibility required to process and use a broad range of information effectively.

The connection of this cross-curricular competency to the broad area of learning *Media Literacy* is obvious, but it also has connections to other areas. In fact, none of the broad areas of learning can be properly addressed without the effective use of information.

in secondary school, young people have access to a growing amount of information through the media. Some information sources are less readily accessible to them than others, however, and it is important that they be able to consult these sources as well. For example, some databases involve rigorous coding and organization, and thus require instruction in order to be used effectively. Schools have a responsibility to help students discover the wealth of information available in various forms, both by organizing the teaching process in an appropriate manner and by placing the necessary material resources at students' disposal.

Key Features of Competency 1

Systematizes the information-gathering process

Establishes research strategies • Determines the pertinence of information • Is on the lookout for information and attentive to what is available • Gathers new information independently • Uses many sources of information and cross-checks the information obtained • Seeks further documentation

Gathers information

Selects appropriate information sources • Identifies the value of each piece of information • Evaluates the validity of information according to criteria • Makes connections between what he/she already knows and new information • Distinguishes between essential and secondary information

Uses information

Puts information to use

Answers his/her questions, using information gathered • Compares his/her new learning with previous learning • Uses information in new contexts • Respects copyright.

Evaluation Criteria

– Effectiveness of research strategies

– Pertinence of sources consulted

– Quality of critical analysis

– Coherence of organization of information

– Range of contexts in which information is used

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Development of the Competency

In elementary school, students learn to recognize information that helps them understand the world in the sources placed at their disposal. They broaden their range of sources. To perceptual sources of information—particularly sounds and images—they add written texts. Reading enables them to draw on a broader range of knowledge and to compare information from different sources and identify its essential elements.

In Secondary Cycle One, students continue to diversify their search for information, consulting written, visual or audiovisual documents, multimedia materials, experts, computer databases, etc., without neglecting the use of observation, which is particularly necessary in science and technology, the arts and physical activities. They discover more effective strategies for managing the various information sources. They develop their judgment with regard to the profusion of information available and become accustomed to comparing information from various sources in order to put it in perspective, identify similarities and differences and evaluate its reliability. They also develop strategies for organizing information that enable them to use it later for tasks or problem solving.

In Secondary Cycle Two, students use research strategies that enable them to quickly identify what is essential. They are encouraged to subject their information to critical analysis and organize it more systematically. They learn to use this structured knowledge in various contexts in school or the working world. They are equally methodical in processing all kinds of information—visual, auditory or symbolic—and using it in mutually complementary ways, so that images and discourse support each other. They are encouraged to recognize that sensitivity to perceptual details, such as those in a graphic work or a musical interpretation, is the counterpart of the rigorous use of oral, written or digital information.

COMPETENCY 2 Solves problems

Focus of the Competency

The problem-solving process, which is an aspect of all human activity, plays a pivotal role at school—especially secondary school. In daily life, there are many situations that require various problem-solving strategies. The broad area of learning *Environmental Awareness and Consumer Rights and Responsibilities,* for example, is filled with problems citizens face today. The ability to deal rationally with situations that involve weighing issues, choosing from a range of possible responses that are not all equally valid or making informed decisions is always an asset.

Problem solving is not a linear process that can be reduced to the application of an algorithm. One must begin by defining the problem or recognizing the elements that define it in a given situation. Typically, it is by trial and error, exploring various possible solutions, testing hypotheses, starting over and reformulating the problem that one constructs a satisfactory solution—which does not mean that it is the only possible solution. Such a process can take many forms, if only because of the many different contexts in which it is carried out. Solving a mathematical problem is not the same as solving a problem concerning everyday life. And yet, beyond the specific strategies involved, they do have something in common: both entail exploring many possibilities, being open to new alternatives, making use of various resources and reflecting on the approach used. Analogical reasoning, which is closely associated with this competency, brings out its cross-curricular nature in the connections it makes possible between conceptual structures from different subject areas. Analogical reasoning is also a fruitful source of problem-solving strategies and an important condition for the transfer of learning.

Typically, it is by trial and error and reformulating the problem that one constructs a satisfactory solution—which does not mean that it is the only possible solution.

By dealing with a wide variety of problems, students discover that there may be more than one way to solve a problem, that some solutions are more effective than others and that context and resources often determine which solutions are most appropriate. It is therefore important for teachers of all subjects to set relatively complex problems for their students and to take advantage of opportunities for problem solving in a variety of activities. It is also important that they provide students with problems that correspond to their level, and either help them become aware of their own resources or give them access to the resources they need. They should also encourage them to persevere in their efforts and to regulate their own process, while allowing them to make errors.

Key Features of Competency 2

Analyzes the components of a situational problem

Identifies the context and perceives the main elements and the connections among them • Recognizes similarities to situational problems solved previously • Grasps the structure of the problem to be solved

Tests possible solutions

Lists and classifies possible solutions • Considers the appropriateness of each solution and its requirements and consequences • Chooses a possible solution, applies it and assesses its effectiveness • Chooses and tests another possible solution if necessary

Solves problems

Adopts a flexible approach

Reviews the steps taken • Redoes some of them if necessary • Identifies successful strategies and analyzes the difficulties encountered

Evaluation Criteria

– Degree of rigour in the use of data given
– Precision of definition of the problem
– Appropriateness of strategies envisaged
– Accuracy of assessment of strategies selected
– Flexibility in pursuing possible solutions
– Quality of reflection on the process

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Development of the Competency

In elementary school, students learn to identify the key elements of a relatively simple situational problem. They can explain how certain elements define a problem. They can list possible solutions and evaluate them, taking into account the resources at their disposal, and they can justify their choices. They can make connections between the situation under consideration and similar situations and are beginning to analyze their process.

In Secondary Cycle One, students deal with somewhat more complex problems and learn to define problems more rigorously. They try to determine the effectiveness of several problem-solving strategies before choosing the one that seems most appropriate, given the resources at their disposal. They become increasingly aware of the connections among different contexts that involve problem solving, especially the subject-specific contexts. They discover the importance of questioning their points of view and comparing them with those of others in order to deepen their analysis and find an effective solution. As they become aware of their own resources, they develop the ability to personalize their problem-solving methods and manage them autonomously.

In Secondary Cycle Two, students deal with problems that are more complex because they are not well defined or are in contexts that are more ambiguous. They are able to identify the characteristics of possible solutions and structure their procedures accordingly. They analyze the ramifications of each option and assess their own and others' strategies in order to find the best solution. They draw on a broader range of resources and use their most effective strategies to solve similar problems. They become able to look critically at their process and use previous learning to solve new problems.

Focus of the Competency

The exercise of judgment serves to guide actions of all kinds, to influence other people's actions or simply to clarify issues. There is no area of human activity in which people do not exercise judgment. Politics, religion, ethics, science, sports, the world of ideas, the arts, work, business, consumption, the legal system, the media, recreation, etc., all involve judgment.

Students will learn to go beyond prejudices and intuitive assumptions, and to replace unconsidered opinion with judgment.

Exercising critical judgment is demanding, even for adults, but its importance cannot be stressed enough in a pluralistic society in which divergent opinions and values coexist. It implies the ability to go beyond stereotypes, prejudices, preconceived ideas and intuitive assumptions, and to replace unconsidered opinion with judgment. So many of our beliefs about people or things are adopted without reflection; to deliberately form an opinion is far more demanding. One must examine the issues involved, consider the information and evaluate its accuracy, and put the situation in perspective. This requires a solid analysis: exploring and comparing various viewpoints, finding arguments and applying strict criteria.

By secondary school, students have reached a phase in their development in which they are particularly keen to assert themselves and debate and validate the legitimacy of their convictions. They are increasingly able to grasp the complexity of certain issues, see other viewpoints and distinguish judgments based on emotion from those based on reason. But they can only learn to exercise critical judgment if their teachers themselves set an example and if they have many opportunities to express their opinions, discuss them with others, compare them with different viewpoints and analyze their validity.

Critical judgment is not truly meaningful unless it is exercised frequently. Since this competency forms the very basis of a critical relationship to knowledge, it cannot be confined to a single subject. It is especially important in areas that involve taking informed positions, such as ethics, science and history, or the appreciation of literature or art, the analysis of mathematical problems or the examination of territorial and socioeconomic issues. This cross-curricular competency supports the educational aims of all the broad areas of learning, because most contemporary issues demand a good deal of critical judgment.

Key Features of Competency 3

Forms an opinion

Defines the question under consideration • Weighs the logical, ethical or aesthetic issues involved • Goes back to the facts, verifies their accuracy and puts them in perspective • Looks at various options and considers existing or possible points of view • Bases his/her opinion on logical, ethical or aesthetic criteria • Adopts a position

Expresses his/her opinion

Articulates and communicates his/her viewpoint • Pays attention to how to best formulate his/her thoughts • Justifies his/her position

Exercises critical judgment

Qualifies his/her opinion

Compares his/her opinion with those of others • Reconsiders his/her position • Evaluates the respective influence of reason and emotion on his/her approach • Recognizes his/her biases • Repeats the whole exercise if necessary

Evaluation Criteria

– Clarity of formulation of a question and the underlying issues
– Appropriateness of the criteria used
– Quality of expression of his/her point of view
– Ability to refine his/her judgment
– Degree of openness to questioning of the judgment

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Development of the Competency

In elementary school, students learn to differentiate their opinions from those of other people, to express them quite articulately, to defend them and to question their judgment. They learn to be attentive to facts and to evaluate their consequences for themselves and others. They learn to distinguish arguments based on emotion from those based on reason. They grasp some of the logical, ethical or aesthetic implications of a situation or issue, and largely recognize the values, principles, rights and duties in which their judgments are grounded.

In Secondary Cycle One, students deal with more complex situations involving a variety of issues. They learn to recognize the influences to which they are exposed, to question their opinions and positions and to analyze the values underlying them. They learn to reject prejudices and pat answers, to be concerned with the correctness of their arguments and to be ready to reconsider them when necessary. They are able to establish criteria for evaluating various positions regarding a situation, taking into account the context and the viewpoints of those involved. They express their judgments more precisely and are better able to take all relevant factors into account.

In Secondary Cycle Two, students are reaching a stage in which they have greater autonomy and responsibility, and in which they exercise judgment with increasing assurance. The gradual development of a career plan or a work-related identity is an illustration of this. In this cycle, they are able to back up and explain their positions. Their interpretations and convictions are based on coherent reasoning. They learn to accept objections, to recognize the different frames of reference in a group, to identify divergent arguments in a situation and to undogmatically accept the reasoning they deem most valid. In a complex situation, they are able to risk taking a position, knowing that it might involve some uncertainty.

COMPETENCY 4 Uses creativity

Focus of the Competency

Creativity is by no means limited to the arts, with which it tends to be associated, but plays a role in all areas of human activity. Dealing with the unexpected or with ambiguity, adapting to new conditions and meeting challenges are all situations that may elicit some measure of creativity, as all of these situations entail envisioning possible solutions, imagining scenarios and finding new ways of considering problems and doing things. Problems associated with the broad areas of learning in which the usual solutions are inadequate are good contexts for using creativity.

Creativity is less a matter of using new resources or knowledge than of the way in which resources and knowledge are used.

Being creative consists essentially in using the resources and materials at one's disposal in an imaginative way. These resources and materials may include ideas, concepts and strategies as well as objects, tools and techniques. In many cases, creativity is less a matter of using new resources or knowledge than of the way in which resources and knowledge are used. It involves the ability to put to use what one has, devising new ways or new contexts for using available materials. It entails finding imaginative ways to deal with obstacles, balancing intuition and logic and managing emotions that may sometimes be contradictory.

At school, all the students' activities should foster creativity. Consequently, the school should provide learning situations that encourage students to use their personal resources, give them problems that have more than one solution or involve different ways of reaching the solution, choose situations that stimulate the imagination, and promote diverse and original approaches rather than one standard approach. The school can channel adolescents' need to assert themselves by valuing initiative, risk taking and inventiveness and allowing students to opt for the road less travelled. Schools should provide a flexible, open context in which students feel free to express their differences.

Key Features of Competency 4

Becomes familiar with the elements of a situation

Defines the objectives and issues involved in the situation • Is open to different ways of perceiving the situation • Listens to his/her intuition • Envisages different scenarios and procedures

Explores

Accepts risks and unknowns • Plays with ideas • Turns obstacles into resources • Recognizes possible or partial solutions

Uses creativity

Adopts a flexible approach

Tries out new approaches • Is receptive to new ideas • Explores new strategies and techniques • Expresses his/her ideas in new ways

Development of the Competency

In elementary school, students learn to organize the steps in their creative projects systematically. They grow less subject to the influence of other people and begin to show autonomy in their creative activities. They learn when they explore situations to be receptive to various sources of inspiration and to experiment with new combinations of ideas, strategies and techniques. They can recognize the original elements in their work.

In Secondary Cycle One, they become more aware of their personal resources and discover the pleasure of drawing on them in carrying out tasks. They can imagine various ways of thinking or doing things, adopt different perspectives or points of view and express their ideas in a personal way. They are able to deal with a broader range of ideas, concepts and approaches.

In Secondary Cycle Two, students learn to draw on their own resources in unfamiliar situations and to be open to a broader range of possibilities. They can more quickly perceive an absence of order in a situation and organize and reorganize elements, creating new relationships. They associate images, ideas and impressions in original ways and use metaphor or analogy to open up different perspectives. They are able to look at situations from different points of view and base their own views on a broader range of cultural references.

Evaluation Criteria

– Diversity of ideas and scenarios envisaged
– Degree of openness to new ways of doing things
– Degree of tolerance for ambiguity
– Originality of connections among the elements of a situation
– Flexibility in using new ideas

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COMPETENCY 5 Adopts effective work methods

Focus of the Competency

To carry out an activity or project or undertake any sizable task, one must adopt effective work methods. Such methods are based on knowledge about how to proceed—the methodological knowledge underlying virtually all human endeavours—which is of great use to all who possess it.

At school, students have to perform a variety of tasks, such as taking notes, planning their work, doing assignments and answering questions. These skills are particularly important and can have a major impact on academic success. Effective task management greatly improves performance in school learning situations. Planning work to be done, ensuring that it is done on time, taking into account various obstacles, locating the available resources and gathering the required materials are all aspects of what it means to be effective in doing work or carrying out activities.

Adopting effective work methods involves more than this, however. This competency also involves selecting appropriate procedures according to the nature of the task and the resources available, particularly the cognitive resources. Students who solve a mathematical or ethical problem, write a narrative text, interpret a piece of music or do a history project have to imagine their task, define its requirements and consider ways of carrying it out in order to reach their objective. They also have to evaluate their progress while carrying out the task and make any necessary adjustments. Their role is not limited to following an established routine, for there is more than one way to perform a task, and the relative effectiveness of a given approach depends as much on the characteristics of each person and the internal and external resources at his or her disposal as on the requirements of the situation.

The ability to recognize which of several procedures or methodological approaches is most appropriate for a person in a given situation or context.

The exercise of this competency involves being able to recognize which of several procedures or methodological approaches is most appropriate for each person in a given situation or context. The broad areas of learning and the concrete complex problems associated with them demand the use of effective work methods.

Schools should not require all students to follow the same procedures. Instead, they should help them to show self-reliance by encouraging them to select appropriate means for attaining objectives, to analyze their use of the available resources and to evaluate the effectiveness of their work methods. If students are encouraged to reflect on their approaches and to be open to other approaches, particularly those of their classmates, they may experiment with a number of possible methods and recognize which methods are most effective for them. All subjects lend themselves to this exercise, and transferring methods from one situation to another is likely to improve them, as it often entails adjustments that broaden their applicability.

Key Features of Competency 5

Considers all aspects of a task

Adopts the objective and evaluates its complexity • Identifies the available resources • Imagines various ways to carry out the task • Plans how to carry it out • Reflects on the best way to proceed

Regulates his/her approach

Employs the necessary resources: people, materials, time, concepts, strategies, etc. • Adapts his/her work method to the task, the context and his/her individual characteristics • Readjusts his/her actions as required • Completes the task

Adopts effective work methods

Analyzes his/her procedure

Examines his/her procedure in retrospect • Recognizes what was effective and what worked less well • Assesses the requirements of the task • Imagines contexts in which the approach could be reapplied

Evaluation Criteria

– Quality of the analysis of the means required
– Appropriateness of choice of methods
– Adaptation and adjustment of methods chosen
– Perseverance in carrying out the task
– Degree of rigour in the assessment of the effectiveness of the methods chosen

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Development of the Competency

In elementary school, students gradually assimilate various procedures and methods and apply them appropriately in various situations. They understand the need to invest time and energy to attain an objective, and they are able to define their procedure quite autonomously and find their own ways to achieve their goals. They are capable of perceiving the connection between their level of satisfaction and the work accomplished and can communicate their successes and difficulties verbally.

In Secondary Cycle One, students are expected to expand their repertoire of methods, assess the relative effectiveness of the methods and adapt them to more complex and varied situations. They learn to choose methods and processes to suit the context, the task and their individual characteristics as learners. They are increasingly autonomous and are capable of recognizing their strengths and weaknesses and taking advantage of the former and offsetting the latter by using the resources of their environment. They are better able to transfer methods and procedures from one situation to another.

In Secondary Cycle Two, students are able to analyze their behaviour and the factors influencing it and to regulate their work strategies in order to make them more effective. They have to make connections among elements from various sources and combine them in a new form, identify essential ideas and integrate them into a coherent whole, and anticipate results and determine the time and strategies needed to achieve them. They are aware that clear, logical thinking leads to correct conclusions and well-founded results. Working alone or in teams, they learn to organize their work environment and manage their time according to the nature and complexity of the situation, and they are sensitive to indications of the effectiveness or limitations of their strategies.

COMPETENCY 6 Uses information and communications technologies

Focus of the Competency

The creation and imaginative use of tools is a fundamental characteristic of the human mind. From the invention of the pencil to that of the computer, this extraordinary ability to create tools characterizes all human activity. Among these products of human ingenuity are information and communications technologies (ICT), and they are the focus of a cross-curricular competency in the Québec Education Program.

The rapid development of knowledge and the increasing variety and accessibility of information sources make the use of ICT more and more essential. These technologies give people a new window on the world, with its conventions and contradictions. They have also changed the organization of work, made it easier to perform complex tasks and influenced intellectual life. The potential they represent for research, information processing, creation and communication in learning communities is vastly enhanced by the possibility of exchanging ideas or sharing or processing data from a distance in real time. Almost all jobs involve the significant use of this medium, which is both a language and a tool. It is thus essential that students acquire proficiency in it by the end of secondary school.

Information and communication networks create new prospects for lifelong learning. These technologies have truly accelerated thinking, facilitating the design and execution of tasks and, when used wisely, reflection on the underlying processes.

Students beginning secondary school have varying degrees of competency in this area. They also vary considerably in their views on the educational relevance of these technologies and in their attraction to them. Some students use them regularly and expertly, while others make do with a superficial knowledge and still others have little or no access to them. A few enthusiasts take advantage of the opportunity to show off, using their competence to engage in unauthorized activities. In any case, secondary schools have a responsibility to build on students' learning with regard to these technologies, while teaching them to use them properly. The school should enable students to develop sufficient competence to use them in their learning. In addition, they must foster the students' respect for ethical standards in their use of ICT and ensure that the educational advantages of ICT are reflected in the intellectual, methodological, social and personal development of every student.

ICT accelerate the acquisition of many cross-curricular and subject-specific competencies.

This competency involves using ICT thoughtfully and effectively and diversifying their use, exercising critical judgment. It entails access to appropriate resources and ongoing support and supervision. It is thus important to provide students with a stimulating environment in which to learn to process information, to create and to communicate using ICT. If used appropriately in teaching subject content, ICT accelerate the acquisition and development of many cross-curricular and subject-specific competencies. They are suitable for use in differentiated learning situations in which students are expected to take responsibility for the construction of their learning. By providing access to a multitude of information sources and individuals, they give students the benefit of expertise from throughout the world and enable them to share ideas and achievements of all kinds.

This competency is related to the broad area of learning *Media Literacy,* but it is also used in all the other broad areas of learning in combination with the other cross-curricular competencies. For example, it is easy to imagine learning situations in which ICT are used to communicate on issues concerning the environment.

Key Features of Competency 6

Masters the technologies

Becomes familiar with various technological tools • Diversifies his/her use of the tools • Chooses the most suitable tools for the situation • Becomes aware of values and codes regarding respect for intellectual property and privacy

Uses the technologies in his/her learning

Carries out various tasks using technological resources and functions • Recognizes and uses previously learned concepts and processes in new contexts • Applies interaction, communication and troubleshooting strategies required for a given task • Envisages new ways to use the technologies

Uses information and communications technologies

Evaluates his/her use of the technologies

Defines the possibilities and limits of ICT • Compares his/her ways of using them with those of others • Considers the relevance of using ICT for specific tasks • Adapts his/her practices in order to improve performance

Evaluation Criteria

– Appropriateness of the use of the technological resources
– Degree of respect for the rules of ethics
– Effectiveness of interaction and troubleshooting strategies
– Quality of the analysis of his/her successes and difficulties
– Appropriateness of adjustments made

Québec Education Program

Development of the Competency

In elementary school, students learn to use information in various formats, do simple Web searches and use various software programs. They also learn to communicate with others using basic e-mail functions. By the end of elementary school, they are able to digitize data, transfer data from one application to another, find their way on the Internet and use their address books. They recognize how ICT help them organize and communicate their ideas.

In Secondary Cycle One, students expect ICT to help them to perform increasingly complex tasks. They are able to use e-mail, and appreciate the convenience of tools for exchanging documents, attaching files, compressing them if necessary, and opening attachments they receive. Developing and refining strategies for constructing their knowledge, they organize their Internet browsing and their bookmarks and use appropriate search techniques to consult specialized sites, databases and text or multimedia documents. They learn to choose from among the peripherals at their disposal and use them appropriately. They can create presentations in various formats, respecting copyright. They use ICT to interact, collaborate and solve problems. They learn to consider ways in which ICT can support their process and make it more effective. They use ICT to compare several points of view and critically examine the information they find. They evaluate their use of ICT for various tasks and identify possible improvements, bearing in mind other cross-curricular learning.

In Secondary Cycle Two, students become increasingly effective and efficient in using technologies. They continue to use the resources offered by these technologies, learning to do so more effectively to improve their intellectual, methodological, personal and communication-related competencies. They learn to find solutions to technical problems that arise and to use the possibilities of communication networks. They develop their skill in the use of one or more applications of these technologies, combining, for example, the use of word processing or a spreadsheet with an ideas manager, music or graphics creation software or video image processing program. They gradually learn to integrate the functions of various tools in a productive way.

COMPETENCY 7 Achieves his/her potential

Focus of the Competency

In order to fulfill one's potential and make career choices that correspond to one's interests and aptitudes, one has to know oneself well and be willing to make full use of one's capacities. It is by recognizing their strengths and weaknesses, defining their needs and aspirations and identifying ways to fulfill them that people develop self-confidence, take their place in society and assume responsibility for their own development. This self-knowledge is especially important in a context requiring regular assessment of one's personal or occupational development and ways of pursuing it. This competency is most closely associated with the broad area of learning *Health and Well-Being,* but also with the optimal achievement of the educational aims of all the broad areas of learning.

In order to fulfill one's potential, one has to know oneself well and be willing to make full use of one's capacities.

Cycle Two of secondary school corresponds to an important phase in adolescents' development, during which they seek autonomy, change their relationship to authority and feel a need for self-affirmation and belonging. Faced with choices concerning their social and occupational integration, they wonder about their future and about their capacities and aptitudes. Their knowledge of themselves and of their potential is strongly influenced by the social and cultural groups to which they belong and the values of those groups. They are particularly sensitive to peer pressure and they need to recognize the influence of others on their values, behaviours, attitudes and choices as well as the influence they themselves can have on their peers. In order to take active responsibility for their development, they need to adopt a realistic and persevering attitude and acquire the habit of self-evaluation, which will serve them well in the lifelong learning that lies ahead. They also need to understand that the competencies they acquire through education are concrete personal tools that will help them to construct their identity and world-view, to become empowered and thus to achieve their potential.

Schools have a role to play in helping young people to define themselves as individuals, recognize their cultural identity and be receptive to other cultures. By having the opportunity to utilize their personal resources, make choices, justify and implement them and assess the consequences, adolescents will become aware of who they are and the values that influence them. The learning that students acquire at school, whether as part of the subject-specific programs or in the context of school and classroom life, contributes to their self-knowledge, to their achievement of their potential and to their awareness of the personal, social and cultural basis of their world-view. The various subject areas familiarize them with the major social issues on which they will have to take positions. Teachers of all subjects must also be aware of the values they convey and of the decisive influence they can have on the educational and career choices of their students. In addition, since it is often through their successes and failures that students construct their self-image and decide what they can—or cannot—aspire to, schools must enable them to carry out activities and projects that take into account their interests and abilities, while at the same time encouraging them to broaden both.

Key Features of Competency 7

Recognizes his/her personal characteristics

Identifies his/her capacities, values and the extent of his/her knowledge • Identifies his/her strengths and weaknesses • Assesses the quality and appropriateness of his/her choices of action • Recognizes the impact of his/her actions on his/her successes and difficulties • Evaluates his/her achievements and progress

Takes his/her place among others

Recognizes that he/she is part of a community • Compares his/her values and perceptions with those of others • Perceives the influence of others on his/her values and choices • Expresses his/her opinions and choices • Respects others

Achieves his/her potential

Makes good use of his/her personal resources

Establishes short- and long-term goals • Establishes criteria for personal, educational and career success • Makes the efforts required to achieve his/her goals • Perseveres in the effort to achieve his/her goals • Displays increasing autonomy

Evaluation Criteria

– Accuracy of the identification of his/her strengths and weaknesses

– Pertinence of the assessment of the impact of his/her actions

– Ability to clearly express his/her perceptions and values

– Autonomy in expressing his/her opinions and choices

– Appropriateness of means used to fulfill his/her potential

– Perseverance in pursuing his/her goals

Québec Education Program

Development of the Competency

In elementary school, students are able to express their thoughts and feelings. They learn to assess their strengths more realistically and to take into account their values, while becoming increasingly open to the world around them. They know that people can influence each other and are aware of the impact of their own actions and attitudes on others. They can recognize which tasks are most suitable for them and can reflect on factors that limit their capacity to take effective action. They have also learned to have confidence in themselves and to take risks in order to meet challenges.

In Secondary Cycle One, students become more aware of their characteristics and affiliations and how they influence their behaviours, attitudes and values. They learn to draw on these influences while putting them in perspective and making their own choices. The group becomes a context for the validation of their personal characteristics, beliefs, attitudes and behaviours. They find it easier to put their ideas into action and can make plans that correspond to their interests and aspirations. They are learning to persevere in carrying out their plans. Their capacity for self-evaluation allows them to recognize how much progress they have made and how much they still need to make. They become more autonomous as learners because they are more conscious of the importance of fulfilling their potential and of the power they have to do so.

In Secondary Cycle Two, students are entering a stage when they will have to start making choices that will guide them in adult life. They are encouraged to express their abilities and interests in projects and new contexts. They learn to draw on their experiences, to recognize their progress and to better gauge the consequences of their choices. They know that the efforts they make to achieve their goals can be a source of satisfaction. They are encouraged to define the kind of people they want to become and to be increasingly involved in their education.

COMPETENCY 8 Cooperates with others

Focus of the Competency

If only because it brings together large numbers of students of different ages, the school is an important place of socialization. But schools have a mandate to go beyond this spontaneous socialization through more deliberate, systematic measures so as to ensure that students develop social competency based on values such as self-affirmation that is respectful of differences, consideration for other people's feelings, openness to pluralism, and nonviolence. School is an ideal setting for learning to live together in keeping with these values. It is also an appropriate place for students to learn teamwork and dialogue, which are particularly useful for tasks whose scale or complexity requires collaboration and which contribute to the construction of knowledge by providing opportunities to compare various points of view and negotiate ways of doing things. The social activity in school makes it a place where interpersonal relations can contribute to the learning process. For this to happen, however, students must learn to cooperate.

The fact that students work together does not necessarily mean they are cooperating.

This competency is generally applied in the context of teamwork. Cooperation requires a positive interdependence, which involves sharing responsibility for attaining a common objective, establishing work rules, having a mutual commitment to advance each other's progress, recognizing the need for complementary areas of expertise, respecting differences and using them constructively, sharing resources, managing conflicts, providing mutual support, acting collaboratively, etc. It is the school's responsibility to develop these skills and attitudes, and to do so, it must set an example.

The teaching of certain subjects—particularly drama, dance and physical education—is hard to imagine without teamwork, but in fact, all the programs lend themselves to the creation of learning situations that foster cooperation, whether students are sitting together around a table or are far apart and are using ICT. In secondary school, students are often encouraged to do cooperative tasks or projects that are peripheral to the curriculum, for example, in extracurricular activities. The school should show students that such experiences can also be useful in subject-specific learning activities. It should also encourage the staff to adopt the same spirit of cooperation they seek to instill in students. Interdisciplinary learning activities, for example, promote cooperation among teachers and thus set an excellent example for students.

Key Features of Competency 8

Contributes to team efforts

• Participates actively in classroom and school activities • Uses differences constructively to attain a common objective • Plans and carries out work with others • Carries out his/her task according to the rules agreed on by the team • Recognizes which tasks can be done more effectively by means of teamwork

Interacts, showing an open mind

Accepts others as they are and recognizes their interests and needs • Exchanges points of view, listens to others and respects different views • Adapts his/her behaviour to the team members and the task • Manages conflict

Cooperates with others

Evaluates his/her participation in collaborative work

Measures the challenges and issues involved in collaborative work • Recognizes its benefits for himself/herself and others • Assesses his/her participation and that of peers • Identifies desirable improvements

Evaluation Criteria

– Degree of participation in the work of the team

– Degree of respect for the rules of procedure

– Degree of sensitivity to the needs and characteristics of others

– Extent of contribution to discussion

– Ability to manage conflicts

– Quality of the evaluation of his/her contribution and that of peers

Québec Education Program

Development of the Competency

In elementary school, students learn to work within structures of some complexity. They recognize which tasks can more easily be carried out by means of teamwork. They participate in group projects, proposing team activities and procedures and playing complementary roles. They can express their feelings and points of view clearly and accept those of others. They offer to help others and ask for help. They make suggestions and welcome those made by others.

In Secondary Cycle One, students carry out subject-specific and interdisciplinary tasks whose scope or complexity requires the sharing of resources. They learn to solve problems collectively, which involves comparing points of view and coordinating actions in order to test possible solutions. They are able to present arguments, state their viewpoints and respect those of others. Their assessments of situations that lend themselves to teamwork and of the type of collaboration required are increasingly accurate.

In Secondary Cycle Two, in group work, students learn to identify their strengths and limits and recognize each other's contributions. They become increasingly aware of the complementarity of roles and mandates, and consequently do their share of work and take their share of responsibility. They learn to appreciate each other's talents and find ways of working that bring them out. They are aware of the value of consensus and compromise and of the need to accept that their ideas are not always adopted by the group. They come to realize the impact of their attitudes and behaviours on maintaining a climate of mutual respect and on conflict resolution. They learn to encourage everyone to be involved, even when some people do not spontaneously show attitudes conducive to cooperation. In order to broaden the field of their collaboration, they work on projects of greater scope, requiring partnerships with people or organizations from beyond their immediate environment.

COMPETENCY 9 Communicates appropriately

Focus of the Competency

Communication plays a major role in shaping our relations with others in a world in which social, ethnic and cultural diversity contributes to the complexity of social relations. Some forms of communication can bring individuals and societies closer together, while others can increase the distance between them or set them against each other.

Competency in communicating is closely related to the organization of thought. It is essential for disseminating knowledge, negotiating points of view, discussing ideas and justifying choices or opinions. It enables us to share our thoughts, feelings, values, intuitions and perceptions, express our world-view and affirm our personal, social and cultural identity. This competency is also related to all the broad areas of learning, because the issues involved can only be understood through the sharing of knowledge and representations. It takes various forms: spoken and written language, attitude, posture, voice, tone, gesture, mimicry, clothing, images and symbols, etc.

The development of jargon and unique patterns of interaction indicating their affiliation with a group is a way in which young people in secondary school affirm their identity, distinguish themselves from others and express their culture. While taking into account this specificity, the school can help enrich their competency in communicating by making them aware of the diverse modes and registers of communication.

Communication is an interactive process that is rarely unequivocal and that demands constant adjustment to a range of possible meanings and reciprocal expectations. It draws on a great variety of languages, each of which has its own structure and system of signs. An awareness of the importance of languages and their characteristic structures and systems of signs and a concern with using them appropriately are essential for fully understanding the environment and interacting effectively with others.

Communication is an interactive process that demands constant adjustment to a range of possible meanings and reciprocal expectations. Language is the key tool for communication.

Mastering this competency entails knowing and observing the rules and conventions of each mode of communication and taking into account the many variables involved in their use.

Since each subject is associated primarily with one means of expression, school is an ideal place for students to experiment with the different forms of communication: artistic, musical, mathematical, computer-related, gestural, symbolic, etc. School gives students opportunities to explore the resources of each of these forms of communication, to discover their conventions and codes and to develop the ability to listen. Among these modes of communication, the language of instruction is the principal tool and means of access to culture and it merits special attention.

The ability to use the organized system of a language is a major asset for a person. Language is a factor of cohesion and a vehicle for the cultural expression of a way of being, of representing reality, of thinking and of feeling that is specific to a community. It is also the cornerstone of individual identity: it enables people to form ideas, express them and compare them with those of others. The capacity to express oneself properly is a key factor in the ability to take one's place in society as an individual and a citizen.

Developing language proficiency cannot be the responsibility of the language of instruction programs alone. In all subjects, students' ability to communicate their learning appropriately in accordance with their level of education depends on their skill in expressing ideas, emotions, intuitions, questions, reasoning and arguments, using the vocabulary, codes and conventions specific to the subject. Thus, while language skills help students acquire subject-specific learning, each subject in turn helps them hone their language skills.

Key Features of Competency 9

Becomes familiar with various modes of communication

Knows various modes of communication • Observes their usage, rules, codes and conventions • Uses their resources

Uses the appropriate mode of communication

Analyzes the communication situation • Chooses one or more modes of communication suited to the context and purpose of communication • Identifies ways of communicating suited to the target audience • Uses one or more modes of communication suited to the situation

Communicates appropriately

Manages his/her communication process

Takes into account factors that may facilitate or hinder communication • Adjusts communication to the real or potential target audience • Recognizes the strategies used throughout the process and evaluates their effectiveness

Evaluation Criteria

– Degree of mastery of vocabulary, syntax and symbols
– Degree of respect for usage, codes and conventions
– Appropriateness of choice of language used
– Appropriateness of the message for the context and audience
– Degree of coherence of the message
– Accuracy of the judgment made of the effectiveness of communication

Québec Education Program

Development of the Competency

In elementary school, students learn to take into account the different aspects of a communication situation and to be more and more attentive to reactions to their way of communicating. They express themselves with a certain ease, and respect the rules and specific characteristics of the mode of communication used. They are aware of the effects of different modes of communication and take into account other people's points of view in order to improve their ability to communicate.

In Secondary Cycle One, students improve their mastery of the resources of oral and written communication, paying attention to the vocabulary and specific characteristics of the specialized languages of each subject: the language of mathematics, of science, of computers, of literature, of art, etc. They continue exploring various modes of communication: artistic, musical, computer-related, gestural and symbolic. They are capable of putting their own points of view in perspective, and learn to adjust their communication according to the reactions they receive. They express themselves using the resources of the various modes of communication, observe the conventions and pay special attention to the quality of their written and spoken language in school and extracurricular activities. They are also able to communicate effectively in a second language.

In Secondary Cycle Two, students learn to choose the mode of communication best suited to a specific situation. They learn to distinguish and respect the conventions and codes of each mode of communication and use them to facilitate cooperative relationships and socialization. They are able to anticipate the reactions of others and to transmit messages suited to their needs and capacities. They are encouraged to use self-analysis and self-evaluation to a greater extent in order to increase the effectiveness and coherence of their communication, and to broaden their repertoire of resources in order to improve its quality and precision.