

Course
Computer Search
CMP-1102-1
Secondary Cycle One



“If you wish to advance into the infinite, explore the finite in all directions.”

Goethe

Presentation of the Course *Computer Search*

The course *Computer Search* is designed to help adult learners deal competently with real-life situations that require them to search for and process information.

The course prepares adult learners to consult various sources of information using a computer.

By the end of the course, adult learners will be able to use search engines, Internet portals, databases and electronic dictionaries or encyclopedias to find specific information that is relevant to their particular needs. They will also be able to perform queries, sort the information obtained, and print or save the search result that is relevant to the solutions sought to various situations of everyday life.

Dealing With the Real-Life Situations

Dealing effectively with real-life situations is based on actions. These actions are grouped into categories and make use of a set of resources that include operational competencies and essential knowledge. During the learning process, adults are expected to construct knowledge related to these resources in order to be able to deal appropriately with their real-life situations.

The class of situations, categories of actions, operational competencies and essential knowledge constitute the compulsory elements of the course. These elements are explained in detail under their respective headings.



Class of Situations Addressed by the Course

This course addresses a single class of situations: *Conducting computer searches*.

Free access to digitized information and knowledge sources comes with its own particular challenge, that of being able to search for, identify and select the right information from among a multitude of available sources.

The real-life situations addressed in this course require adult learners to master the basic computer search techniques, so that they are able to benefit from the advantages of a constantly

changing knowledge-based society. As they learn to become autonomous, they will be better placed to understand current events, to become familiar with the resources available in a new environment to which they must move as a result of changes in their personal lives, or simply to satisfy their everyday information needs.

Class of Situations	Examples of Real-Life Situations
Conducting computer searches	<ul style="list-style-type: none">▪ Dealing with changes in personal or working life▪ Integrating into a new living environment▪ Understanding current social issues▪ Understanding a specific type of technology▪ Exploring a country and its culture, its history or its geography▪ Upgrading knowledge▪ Interpreting current events▪ Helping children with homework

Categories of Actions

The *categories of actions* are groups of actions that are appropriate for dealing with the real-life situations addressed in the course. *Examples of actions* are provided to illustrate the scope of the category in a variety of contexts.

Categories of Actions	Examples of Actions
<ul style="list-style-type: none"> ▪ Establishing a search strategy 	<ul style="list-style-type: none"> ▪ Defines a search topic ▪ Selects keywords (criteria) ▪ Selects a search tool ▪ Asks questions about a search topic
<ul style="list-style-type: none"> ▪ Applying appropriate search techniques 	<ul style="list-style-type: none"> ▪ Searches for events or people who have left their mark on history ▪ Searches for information on products or services ▪ Searches for an address or directions in order to map out a route for a trip ▪ Consults an electronic encyclopedia ▪ Consults thesauruses and directories of definitions ▪ Finds the correct spelling or translation of a given word ▪ Clarifies the search strategy by performing a query
<ul style="list-style-type: none"> ▪ Processing the search results 	<ul style="list-style-type: none"> ▪ Classifies the search results according to their relevance ▪ Compares the results of different searches ▪ Explores the information obtained ▪ Collects the information in a folder ▪ Saves and prints the search results ▪ Adds information sources to the list of bookmarks (Internet)

Compulsory Elements and End-of-Course Outcomes

The compulsory elements are those that the teacher must absolutely take into account when designing learning situations.

Class of Situations

Conducting computer searches

Categories of Actions

- Establishing a search strategy
- Applying appropriate search techniques
- Processing the search results obtained

Operational Competencies

Thinks logically

- Accurately defines the topic
- Compares different search tools
- Establishes search hypotheses
- Rigorously analyzes the results

Exercises critical and ethical judgment

- Examines the credibility of the information and the validity of its source
- Considers the relevance of the results objectively
- Questions the values conveyed
- Makes a judgment based on own values and the values of society

Essential Knowledge

- Basic notions
- Simple search
- Advanced search
- Viewing information and results

The end-of-course outcomes describe how adults make use of the compulsory elements to deal with the real-life situations addressed in the course.

End-of-Course Outcomes

In order to deal with situations in the class *Conducting computer searches*, adult learners must take a structured approach that involves establishing a relevant search strategy, applying appropriate techniques and processing the results according to their needs.

When establishing a search strategy, adult learners accurately define their topic and select certain keywords that can be used to develop one or more hypotheses for their search. They identify relevant search criteria and compare various search tools (e.g. Internet, electronic encyclopedia or dictionary, database, etc.).

By applying appropriate search techniques, they are able to perform simple searches using logical operators, or advanced searches using logical and relational operators.

When processing the results, they view the information obtained and consider its relevance objectively. They sort it, keeping only the results that are of interest. They then examine the results carefully, ensuring that the information is credible and its sources are valid. They make sure the values conveyed are consistent with their own values and those of society in general.

Throughout the search process, adult learners observe rules of ethics and ensure that their sources are credible. To do this, they develop a rigorous approach, using information gathering techniques and strategies pertaining to the organization and interpretation of the information they find.

Evaluation Criteria

- Establishes a relevant search strategy
- Applies appropriate search techniques
- Processes the results rigorously

Operational Competencies

The contribution of each operational competency is described in terms of the actions that are appropriate for dealing with the real-life situations in this course. These operational competencies are addressed in other courses and therefore all of the courses taken together contribute to their development.

In this course, only the following operational competencies are addressed: *Thinks logically* and *Exercises critical and ethical judgment*.

Contribution of the Operational Competency *Thinks logically*

The operational competency *Thinks logically* helps adult learners to deal effectively with situations related to the class *Conducting computer searches*. It allows them to analyze a situation, and establish and test hypotheses in order to complete their search successfully.

Adult learners accurately define their search topic and identify the main points, then propose keywords to launch the query. They compare different search tools (e.g. Internet, database, etc.) and select the one that seems to be the most appropriate. Depending on the tool selected, they establish their hypotheses and test them by performing the search. They analyze their findings, keeping only the most relevant results. In doing so, they adopt a structured method of reasoning that will be useful in future situations that involve searching for information.

Contribution of the Operational Competency *Exercises critical and ethical judgment*

The operational competency *Exercises critical and ethical judgment* helps adult learners to deal effectively with situations related to the class *Conducting computer searches*. It allows them to judge the credibility of the information they find, as well as the validity of its source, and to examine the values it conveys.

Given the high number and wide range of information sources consulted, adult learners must step back in order to exercise their critical judgment, making sure their information is credible and its source reliable, thereby objectively judging the relevance of their results. They exercise ethical judgment by questioning the values conveyed, making sure they are consistent with their own values and those of society, while being tolerant of different opinions.

The operational competency *Exercises critical and ethical judgment* therefore enables adult learners to examine different viewpoints rigorously and objectively, in light of accepted values. This allows them to make informed choices when selecting the data that best suits their needs.

Essential Knowledge

The elements of essential knowledge shown in parentheses are provided as suggestions only.

Basic notions

- Vocabulary
 - Queries
 - Search criteria (keywords)
 - Logical operators, relational operators
- Search strategies
 - Structuring a question for a computer search
 - Selecting appropriate keywords
 - Preparing a search hypothesis
- Search tools
 - Databases
 - On-line or digitized data banks (e.g. encyclopedias, dictionaries, thesauruses, etc.)
 - Portals and search engines (Internet only)
- Verifying the information obtained (Internet only)
 - Credibility of the source
 - Ethical value of the source
 - Reliability of the information obtained

Simple searches

- Single criterion searches: using logical operators (AND, OR)
- Searches using portals (Internet only)
 - Theme-based portals, categories, classification methods

Advanced searches

- Multi-criteria searches: using relational operators (< = >)
- Using search engines (Internet only)
 - Advanced searches using several different criteria or search options

Viewing data and results

- Moving between fields and saved files
- Sorting a table or query result
- Printing
 - An entire table, a single record, a query result
- Managing bookmarks (Internet only)
 - Creating and deleting folders, adding and deleting bookmarks

Attitudes

The following attitudes are provided as suggestions only. The development of these attitudes can help adults become more competent in dealing with the real-life situations in this course.

Curiosity	Rigour
<p>Curiosity encourages adults to try new experiences and review those that do not work, in order to progress on their own. The field of computer technology is in constant evolution, and adults who develop curiosity are more likely to update their skills, seek out new products and features and explore specific aspects of the field. Often, curiosity drives adults to excel at what they do.</p>	<p>Rigour is an intellectual requirement that demands precision and logic when performing a task. Adult learners apply the rules of learning, consider the potential influence of the moral and ethical aspects, question their approach and make changes where necessary. A rigorous approach leads to greater accuracy in the performance of the task and the results obtained.</p>
Objectivity	
<p>Adult learners who are objective are able to set aside their partiality and prejudices. They base their judgment on reality or, where necessary, on neutral, credible information that can be verified. To be objective, adult learners must ensure that their judgment is not affected by personal considerations or outside factors.</p>	

Complementary Resources

The following resources are provided as suggestions only and consist of references that may be consulted in learning situations.

Social resources	Material Resources
<ul style="list-style-type: none">▪ Guest speaker who is an expert in a related field	<ul style="list-style-type: none">▪ Operating system▪ Office automation software (database)▪ Internet browser▪ Electronic encyclopedias or dictionaries▪ Digital projector▪ Reference books

Contribution of the Subject Areas

The contribution of other subject areas, in particular knowledge related to Languages, is also useful for dealing with the real-life situations in this course. The elements identified for each subject area are not compulsory and do not constitute prerequisites.

Subject Area: Languages

Program of Study: *English, Language of Instruction*

Knowledge of the language of instruction contributes significantly to learners' capacity to use a computer to search for information, communicate with others, produce documents and collaborate on group projects. The content of the written messages that adult learners receive and produce depends on the language resources they have constructed, particularly their reading and writing skills with respect to the type of discourse concerned, and this is true whether the message is conveyed in print, handwriting or electronically. These skills are developed throughout all the courses in the English, Language of Instruction program. In addition to the language resources that are specific to the situation and the messages being conveyed, the capacity to use a computer for these purposes depends in particular upon:

- Oral interaction to obtain and give information and instructions (e.g. regarding steps and procedures to follow when using a computer)
- Decoding strategies (e.g. to interpret computer-specific terminology, symbols, icons, abbreviations)
- Reading to obtain information and instructions (e.g. help menus, pop-up messages, instruction manuals for computer software)

Andragogical Context

Computers are now present in every sector of human activity, and it is essential for today's adult population to understand how they work and how they should be used. The courses in the *Computer Science* program develop the ability of adult learners to understand the computer environment, produce documents and search for, process and manipulate information. More specifically, the courses enable adult learners to identify similarities between different software applications and use this basic information to transfer their learning from one application to another.

The learning derived from the program is essential for helping adults integrate into the work force, function in their social and cultural environment and in their education and training activities, regardless of their level of schooling. The ability to use a computer is an advantage in their everyday lives and especially in their learning. Adult learners who own or have access to a computer will benefit from it on a daily basis.

Adult learners build on their prior knowledge through learning acquired by thinking, acting and interacting with the people around them, every time the learning context allows them to do so. Discovery and individual exercises are always available, but are used with the goal of building new knowledge or applying prior knowledge. Feedback allows adult learners to assess their own progress, take corrective action where necessary, and realize how their knowledge of computers can be applied in their everyday lives.

Learning is acquired gradually in this course. Adult learners begin by addressing general notions, which they enrich and apply in the classroom or laboratory through situational reconstructions and other appropriate activities. They may then be asked to apply their newly constructed knowledge to real-life situations.

If their learning is to be effective, it must be structured by means of an appropriate pedagogical method. Although pedagogical methods and techniques are specific to each training centre and adapted to the teacher's own abilities, they should nevertheless be alternated in order to diversify the learning conditions and provide adult learners with different ways of building their knowledge. This approach will also increase the learners' motivation and encourage them to work harder. It is therefore important to allow time for sharing knowledge, experiences and ideas. A broad range of learning activities will provide plausible topics through which adult learners are able to apply the concepts addressed in the course.

Learning Situation

The learning situation that follows is provided as an example to show teachers how the principles of the education reform can be applied in the classroom.

It is authentic in the sense that it addresses a real-life situation (taken from the class of situations in the course) that adults may find themselves in. It is sufficiently open and comprehensive to allow adult learners to explore several important aspects related to dealing with this real-life situation.

The examples of actions presented in the course help the teacher to identify those actions that an adult would take to deal with the real-life situation. The teacher can then refer to these examples in order to develop pertinent learning activities.

The learning situation is organized in terms of the three steps of the teaching-learning process, which are as follows:

- planning learning
- actual learning
- integrating and reinvesting learning

These steps highlight the principles of the education reform insofar as they encourage adults to be active, to reflect on their learning and to interact with their peers when the learning context is suitable. They include learning activities and may also include evaluation activities intended to support adults in the learning process.

These activities help learners to construct knowledge related to the compulsory elements of the course that are targeted by the learning situation concerned: one or more categories of actions, essential knowledge and the actions of the operational competencies associated with the categories of actions.

The example provided also refers to certain teaching strategies—pedagogical methods and techniques—that can be selected according to the learners, the context and the learning environment. Certain learning strategies may also be suggested, as well as a variety of material and social resources.

Example of a Learning Situation

History and Me

One of the real-life situations selected for the course *Computer Search* involves searching for historical events. In the related learning situation, adult learners are asked to review a historical event of their choice that they believe had an impact on the socioeconomic activities of their region or a direct influence on the development of their technological, natural or work environment.

To prepare the learning situation, the teacher draws up a list of historical events. Using the Internet, he or she identifies certain sources of information about a handful of events that have marked local history, some unreliable sources providing inaccurate information, as well as several search engines. The teacher must ensure that the activity is appropriate for the adult learners' level.

To begin the learning situation, the teacher presents some of the events and discusses their impacts on the local socioeconomic context. This is followed by a group brainstorming session, during which the adult learners identify other related events in the region or further afield, along with their potential impacts. The adult learners are then asked to select one event that has had a direct or indirect impact on their region or their current personal situation. They may choose one event for the entire group, select an event individually from the teacher's list, or choose something on their own. The teacher then talks to the group about the appropriate search tools to use, suggesting that they all use an Internet search engine for this introductory activity.

The search itself then begins. The teacher starts by presenting a case study that introduces the adult learners to computer search techniques. Using the digital projector, the teacher explains the basic

notions, beginning with keyword searches. Working individually, the adult learners then draw up a list of keywords for their own searches. The teacher continues with a demonstration of how the chosen search engine works. Step by step, the adults then conduct a simple query, with everyone querying the same topic, and using the same search engine. An analysis of the search results will reveal a wide assortment of information, and the teacher initiates a discussion on the disadvantages of obtaining such varied results. The teacher then introduces the notion of an advanced search and, using the digital projector, addresses the whole class and demonstrates how to refine their search using relational operators.

Working individually, the adults then perform their own searches using the criteria (keywords) identified earlier in the activity. The teacher walks around the classroom, providing guidance where necessary, and reminding the group of the different steps in the process.

The teacher explains how to view the results, sorting them in order of priority. He or she then questions the credibility of the sources and the values conveyed, using Internet hoaxes and posted inaccuracies as examples. He or she then shows the adult learners how to verify their sources, reminding them that it is always wise to be critical of the data obtained and to be sure to always validate the source of information.

When the adult learners are satisfied with their results, they create a list of bookmarks in which they save the Web pages they consulted and print out the most relevant information.

To end the learning situation, the adult learners present the search results, making connections with the original question. They describe their vision of the impact the chosen event had on their lives or on their environment, basing their conclusions on the information they obtained. The teacher then reviews the search process, so that the adult learners are aware of the logic applied.

Elements of the Course Addressed by the Learning Situation

Class of Situations	
Conducting computer searches	
Learning Situation	
History and Me	
Categories of Actions	
<ul style="list-style-type: none"> Establishing a search strategy Applying appropriate search techniques Processing the search results 	
Operational Competencies	Essential Knowledge
<ul style="list-style-type: none"> Thinks logically Exercises critical and ethical judgment 	<ul style="list-style-type: none"> Basic notions Simple search Advanced search Viewing data and results
Complementary Resources	
<ul style="list-style-type: none"> Computer, printer Internet access 	<ul style="list-style-type: none"> Electronic encyclopedias Reference books



