

Lesson 4: Intellectual Dimension



Mr. Petruk is one of those people who just never stops learning. He is always looking for a new way to satisfy his curiosity, gain a new skill, or introduce himself to another topic. He exemplifies the concept of lifelong learning—the idea that learning is not confined to the formal structure of an educational institution, but is an ongoing process that begins at birth and continues throughout one’s lifetime.

Think about people that you know who are effective learners. What are some of their characteristics?

Very likely, the people you thought about view learning as a lifelong process. They recognize that learning is an active process of acquiring skills and knowledge, not merely a memorization of facts. They have clear learning goals, know about their strengths and weaknesses, and take responsibility for their own learning by planning, monitoring, and adapting their learning process. If you want to improve the intellectual dimension of your life, you can benefit from the knowledge and experience of effective learners.

In this lesson you will explore the factors that affect learning, examine theories about learning, discover what researchers have discovered about learning, reflect on the importance of different kinds of thinking, and improve your goal-setting and time-management skills.

Factors That Affect Learning

Recall a time when you were learning a new skill and made a mistake in public. Perhaps you fell while biking, skating, or skiing with friends. How did your friends react? Were your friends sympathetic or did they make fun of you? How did you react? Were you able to laugh at the situation, or did you feel embarrassed? Did you try again, or did the incident discourage you?

Think about the following points:

- Your level of self-esteem and your attitude toward learning affects both your motivation to learn and your success in learning. If you make a mistake or begin to struggle, you need self-esteem to convince yourself that you can do it.
 - The support of others is also an important factor in learner success. Therefore, try to surround yourself with people who encourage you. Keep away from people who will steer you away from your goals.
 - Being successful in learning—like any other endeavour in life—requires commitment, discipline, and hard work.
1. Explain how each of the following childhood stories relates to the preceding points about learner success. In other words, what lesson about learning does each story teach? If you don't recognize or remember these stories, ask a classmate, friend or teacher to remind you, or choose other stories from your childhood.
 - a. "The Little Engine That Could"
 - b. "Pinocchio"
 - c. "The Tortoise and The Hare"



Compare your answers with the Suggested Responses at the end of the lesson.

Theories about Learning

In 1983 Howard Gardner published a book called *Frames of Mind: The Theory of Multiple Intelligences*. In his book he identified seven types of intelligence:

- **Verbal/linguistic intelligence:** the ability to use words and language
- **Logical/mathematical intelligence:** the ability to use logic and work with numbers
- **Visual/spatial intelligence:** the ability to perceive the visual world accurately and create mental images
- **Kinesthetic intelligence:** the ability to control body movements and handle objects skillfully
- **Musical/rhythmic intelligence:** the ability to appreciate and create music
- **Interpersonal intelligence:** the ability to relate to and understand others
- **Intrapersonal intelligence:** the ability to reflect on and understand yourself

Gardner later added an eighth type of intelligence:

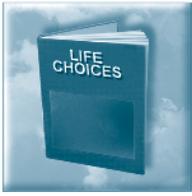
- **Naturalistic intelligence:** the ability to sense patterns in and make connections to elements in nature

Before Gardner's theory of multiple intelligences became popular, most people thought intelligence-quotient types of tests—commonly called IQ tests—could measure human intelligence. Gardner argued that IQ tests were limited because they only assessed mathematics, science, and language skills. Gardner considered each of the eight intelligences to be equally important. He also believed that people use all eight of these intelligences to learn new knowledge and skills.

Although everyone has all eight intelligences, no two individuals have them in the same amount. Which are your strongest intelligences? How do these intelligences affect the way you like to learn—your **learning style**?



learning style: your preferred way of acquiring knowledge and skills



Turn to page 32 of *Lifechoices: Careers* and complete the learning styles checklist to discover which of Gardner’s multiple intelligences is more your style.

People have different strengths and preferences in the ways they interact with, take in, and process information. Most students have a preferred learning style—a way of learning that suits them best.

Many models have been developed to explain these learning styles. Perhaps the most well-known model is the Visual/Auditory/Kinesthetic (VAK) model:

- **Visual.** These learners learn by seeing. They prefer working with written material, diagrams, posters, and demonstrations.
- **Auditory.** These learners learn by listening. They prefer face-to-face instruction. Since hearing and speaking are so closely related, auditory learners prefer telling people about what they have learned.
- **Kinesthetic.** These learners learn by doing. They prefer a hands-on approach by actively exploring the physical world around them.

Some people have a strong preference for one of these learning styles; others are more balanced. To help you determine if you have a preferred learning style and what this style is, read the questions in the left-hand column of the following chart. Of the three responses to the right of each question, select the one that best characterizes you.

WHAT IS YOUR PREFERRED LEARNING STYLE?

	Visual	Auditory	Kinesthetic
What do you do when you are spelling?	I imagine what the word looks like when written.	I sound out the word or use a phonetic approach.	I write the word down to find if it feels right.
How do you learn something new?	I like to see demonstrations, diagrams, or videos.	I prefer verbal instructions or talking about it with someone else.	I ignore the directions and figure it out as I go along.
What do you like to do when relaxing?	I prefer to watch TV, see a play, or go to a movie.	I prefer to listen to the radio, play music, or talk with a friend.	I prefer to play sports or make something with my hands.

Which style did you select most often? This is your preferred learning style.

Research About Learning

Research is constantly providing new revelations about how the brain works and how people learn. As you may be aware, your brain has two sides called hemispheres. Each side of the brain processes different types of information.

The left side of the brain is associated with **critical thinking**. The following skills are used in critical thinking:

- classifying information into categories
- ordering and prioritizing information
- comparing and contrasting information
- evaluating information
- determining cause and effect
- decision making

The right side of the brain is responsible for **creative thinking**. The following skills are used in creative thinking:

- brainstorming
- visualizing
- inferring
- generalizing
- predicting
- hypothesizing
- problem solving
- inventing

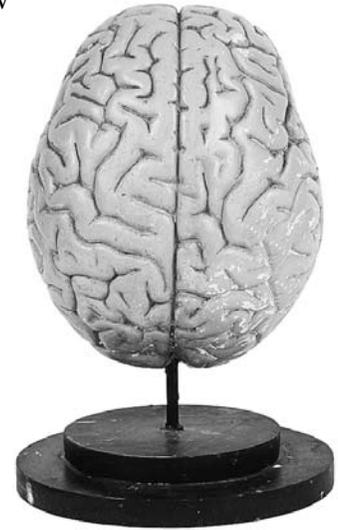
Although people use both sides of their brains, most individuals rely more heavily on one side.

Right-brain dominant people use **convergent thinking**. They take a focused, systematic, and linear approach to a problem. They can arrange information in an organized, sequential manner. They can reach logical conclusions. Thus, they excel in scientific and mathematical activities.

Left-brain dominant people use **divergent thinking**. They take a broad, holistic approach to a problem. They are intuitive, imaginative, and inventive; and they often come up with novel ideas and solutions in a seemingly random and spontaneous manner. Thus, they excel in creative activities.

Take the test at the following website to discover whether you are a right-brain dominant or left-brain dominant person. (To access the test, first select *gender* and then click on *next*.)

<http://similarminds.com/brain.html>



critical thinking: the ability to evaluate information and opinions in a systematic, purposeful, and efficient manner

creative thinking: the ability to see and make things in a new or different way

convergent thinking: thinking that focuses on one correct solution

divergent thinking: thinking about many possibilities, not just one solution



Different Types of Thinking

Over the years you have learned many thinking and learning strategies. In fact, you have used the brainstorming strategy frequently in this course.

2. Use your personal experience or do some research and explain each of the following strategies:
 - a. a concept web (also called a *concept map* or a *mind map*)
 - b. a Venn diagram

Compare your answers with the Suggested Responses at the end of the lesson.



Edward de Bono is a leading authority in the field of constructive and creative thinking. He recognized the importance of different kinds of thinking. In the 1980s de Bono invented a simple and powerful strategy to improve people's thinking called Six Thinking Hats. This strategy encourages people to apply different types of thinking and to recognize what type of thinking they are using. Different colours of hats represent the different types of thinking.

metacognition:
thinking about
the thinking
process

The Six Thinking Hats technique is used in a group and works like this. The group leader wears a blue hat, which represents **metacognition**, and calls for the following different types of thinking:

- Wearing white hats, group members focus on the available data and see what they can learn from the facts.
- Wearing red hats, group members focus on feelings, intuition, and hunches. They predict how others will react to the idea.
- Wearing black hats, group members react cautiously and defensively. They try to see all the drawbacks of the idea.
- Wearing yellow hats, group members react positively and optimistically. They try to see all the benefits of the idea.
- Wearing green hats, group members focus on alternative, creative ideas.

Many businesses have successfully used the Six Thinking Hats strategy. Here is one example:

In March 1996 when reports of the “mad cow” disease created widespread panic throughout Europe, many beef processing plants experienced huge overnight losses as consumers stopped buying beef. Six Thinking Hats was instrumental in saving one of Europe’s largest beef processing companies. 86% of turnover was lost overnight. Not surprisingly, it was an extremely difficult task to try to think in such circumstances. Managers were fully occupied coping with the sudden loss of business. Twelve people from this company met for a 60-minute meeting using the Six Thinking Hats. 65 ideas

were generated: 30 cost-reduction ideas and 35 commercial ideas. They were evaluated through the Yellow Hat and Black Hat processes at subsequent meetings. The results: 25 ideas were put into place. Major capital investment was placed in a new plan to participate in the Government OTMS Scheme. The in-house-only Distribution Division went 100% open-market commercial and established such a reputation and portfolio of business that it has had to expand. The overall result is that they came through the crisis with a strong company and survived six long weeks of no revenue.



3. With a partner or small group, try the Six Thinking Hats strategy with one of the following problems.

- A tailor in Edmonton has had tremendous success making and selling men’s suits but now has to compete with imports from India and Vietnam, which are produced more cheaply. The tailor is facing huge losses.
- An Alberta farmer has always planted wheat but discovers that Chinese farmers are now the leading producers of wheat in the world. The farmer’s livelihood is threatened.
- Lindsay has been attending university in Calgary. To help keep her schooling costs down, she lives with her mother. Her mother is being transferred to Edmonton. Lindsay could transfer to the University of Alberta in Edmonton. Does she find accommodation in Calgary and continue attending university there, or does she move to Edmonton with her mother and go to the university there?

Compare your answer with the Suggested Responses at the end of the lesson.

¹ Lynda Curtin, “Six Thinking Hats and Lateral Thinking in Use—Results: The Tools Work, Some Global Examples” 2002, <<http://www.lyndacurtin.com>; <http://www.deBonoForBusiness.com>> (28 June 2006)/ Reproduced by permission.

Goal-setting Skills

You probably set small goals for yourself all the time. For example, you may have three goals for this weekend—to complete the research paper that is due next week, to wash your car, and to train for a marathon you plan to participate in next month.



Setting goals is an important life-management skill. It helps you channel the direction of your life and accomplish the things that matter to you.

To be effective at setting goals you need to use both critical and creative thinking. Following are some aspects of the thinking process you need to employ when setting life goals:

- **Set specific goals.** Being precise helps you know the exact goal to be achieved. Be sure the goals are realistic. Try to set the goals slightly out of your immediate grasp, but make them achievable.
- **Keep the goals small.** If a goal is too large, you may feel that you are not making progress toward it.
- **Prioritize your goals.** Rank your goals according to their importance. This helps you to avoid feeling overwhelmed by too many goals, and it helps to direct your attention to the most important ones.
- **Establish a time frame for reaching your goals.** Decide when you want to reach these goals. You may want to make both **short-term goals** and **long-term goals**.
- **Share your goals with someone.** Sharing your goals gives them more force and makes you more accountable for reaching these goals.
- **Write the goals down and put them where you can often see them.** Reviewing your goals will help you stay focused.

short-term goals: goals that require a short time (hours, days, or months) to achieve

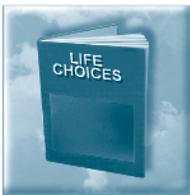
long-term goals: goals that take a long time (a year or more) to achieve

resources:
the various people and things that are used to reach a goal, solve a problem, make a decision, and manage life

After you have set your goals, you'll also want to identify the barriers to reaching your goals. Perhaps you need a self-help book, a mentor or coach, equipment, or a facility to train in. Identify **resources** that will help you reach your goals, and be resourceful in getting the help you need. There are two kinds of resources—human resources and material resources.

- Human resources are qualities and attributes that come from within yourself and from other people who support you in some way. Human resources include time, physical and emotional energy, health, knowledge, talents and skills, and attitudes such as confidence.
- Material or non-human resources are things that can be touched, seen, or appraised. Material resources include money, tools and equipment, goods and services, and community facilities such as libraries and hospitals.

For more information on setting goals, turn to page 7 of *Lifecoices: Careers*. Read “Go For Your Goals.”



4. Owen has a goal of going to university. He studies hard and makes good grades. But Owen's parents have three other children and a modest income. His parents warn him against getting his hopes up about university; they won't be able to help him financially. Instead, they encourage him to get a job after high school.

What can Owen do to help reach his goal of going to university?

Compare your answer with the Suggested Responses at the end of the lesson.

Time-Management Skills

Everyone knows people who are constantly arriving at events late and missing deadlines for assignments. Are you one of those people? People with poor time-management skills often put off projects. In other words, they procrastinate. Perhaps they are afraid to tackle the project because it seems too overwhelming, or maybe they just don't like doing some of the tasks.



Following are some hints for better time management:

- **Get organized.** Identify when the project needs to be completed and the resources you will need to complete the project. Gather together all the tools you will need—such as pens, textbooks, and paper—and keep them in one place.
 - **Break the project into smaller tasks.** Concentrating on smaller tasks makes the project less overwhelming.
 - **Identify the order in which you will do these tasks.** Some people like to do the hardest (or most unpleasant) tasks first and get them out of the way. Other people prefer to do the most important tasks first.
 - **Set a target date and make a schedule.** Aim for a date that is earlier than the required deadline. This gives you extra time if something unexpected comes up.
5. With a partner or small group, discuss other strategies to stop procrastinating and to begin to manage your time more effectively.



Compare your answer with the Suggested Responses at the end of the lesson.

Go to page 10 of Assignment Booklet 1A and respond to questions 7 and 8 of Section 1.

Looking Back; Looking Ahead

In this lesson you explored the intellectual dimension of your life. You examined the characteristics of effective learners, factors that affect learning, theories and research about learning, and the importance of different kinds of thinking. As well, you investigated goal-setting and time-management skills. In the next lesson you will explore the emotional dimension of your life.

Glossary

convergent thinking: thinking that focuses on one correct solution

creative thinking: the ability to see and make things in a new or different way

critical thinking: the ability to evaluate information and opinions in a systematic, purposeful, and efficient manner

divergent thinking: thinking about many possibilities, not just one solution

learning style: your preferred way of acquiring knowledge and skills

long-term goals: goals that take a long time (a year or more) to achieve

metacognition: thinking about the thinking process

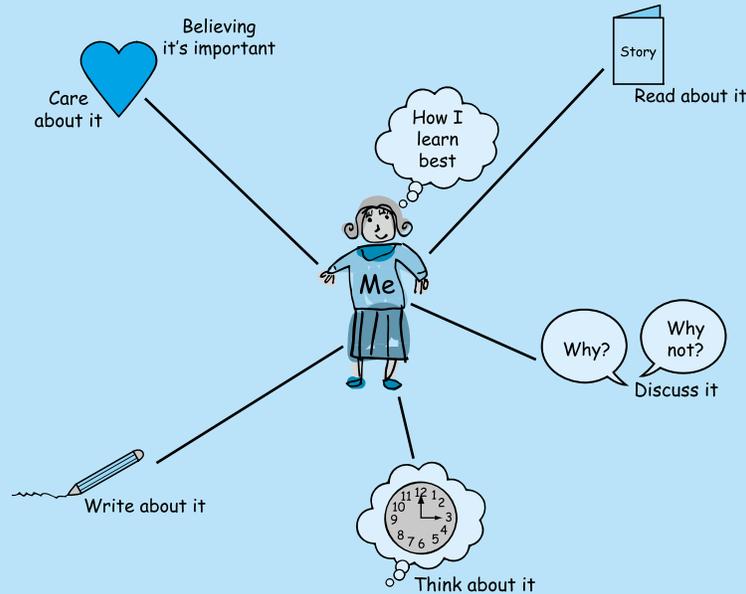
resources: the various people and things used to reach a goal, solve a problem, make a decision, and manage life

short-term goals: goals that require a short time (hours, days, or months) to achieve

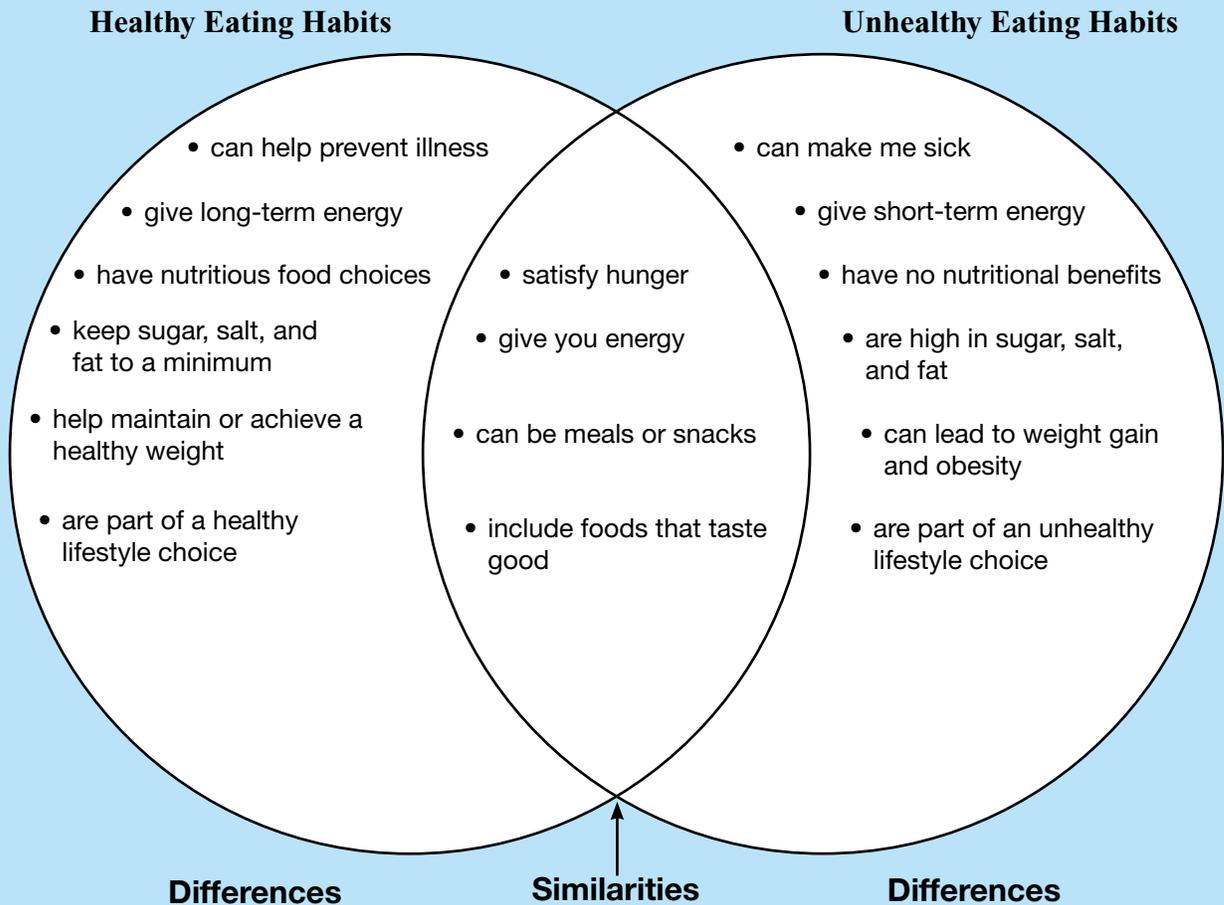
Suggested Responses

- The engine was able to make it up the hill because of positive self-talk. The story teaches children that their level of self-esteem and attitude toward learning affect their motivation to learn and their success.
 - Pinocchio gave in to the pressure of the fast-talking fox who promised him fun instead of the hard work of school. The story teaches children that the support of others is also an important factor in learner success. Therefore, they should try to surround themselves with people who encourage them and keep away from people who will steer them away from their goals.
 - The tortoise was able to defeat the hare with persistence and determination. The story teaches children that success in learning—like any other endeavour in life—requires commitment, discipline, and hard work.

2. a. A concept web is a way to represent connections between concepts or ideas. A web includes key words, colours, and images. Following is an example.



b. A Venn diagram is a way to compare and contrast information about two or three concepts or ideas. Following is an example.



3. How well did the strategy work for you? Did you find it difficult to switch hats? Why or why not? Did wearing a different hat give you a different perspective on the issue?
4. Owen can work part-time while he is studying and get a summer job to help pay for university. He can apply for student loans, bursaries, and scholarships. He can ask his teacher and school counsellors for advice on how to apply. If the university he wants to attend is in another community, he can find people to live with so his expenses will be lower. He can enroll at a university that offers a distance-learning program. Then he won't have to move and it will be more economical.
5. Answers will vary. Following is one student's response:

Plan to reward yourself when you complete the project. The reward will help to motivate you. Use positive self-talk to encourage yourself. If possible, work with others who can encourage you. When you can, do two things at once. For example, while you are washing your car, you can be thinking about the project.

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